# ORGANISATIONAL COMMITMENT OF PROFESSIONAL EMPLOYEES: MEASUREMENT AND INTERACTION EFFECTS


## Keywords

Organisational commitment; professionalism; perceived organisational support; social exchange; human resource management; accountants; scientists, pharmaceuticals.


## ABSTRACT


This thesis presents an exploratory study into the nature of organisational commitment among professional employees. The thesis argues that the classic definition of commitment (Mowday, Porter and Steers, 1982) has been superseded by a reshaped psychological contract that affects the employment relationship in post-industrial society.

Following exploratory, qualitative research organisational commitment was conceptualised as a multi-dimensional construct involving the congruence of individual and organisational goals, effort directed at goal achievement and innovation in the work place. A Behavioural Commitment Scale was developed and construct validity was examined through a cross-sectional, quantitative survey of 329 pharmaceutical chemists, 166 public sector accountants and 138 private sector accountants.

Social exchange theory is used to contextualise a study of how behavioural commitment is related to professionalism, perceived organisational support and social exchange disposition. Confirmatory factor analysis supported the three-dimensional structure of the Behavioural Commitment Scale. Multiple moderated regression revealed that the influence of situational variables upon interaction effects was greater than the nature of the profession. Union membership, low tenure, and prior involuntary job change all influenced positive interactions between perceived support and exchange. Professionalism moderated the effect of social exchange on commitment. Feelings of inability to leave the organisation and job insecurity in the late career stage both interact negatively with professionalism to have detrimental affects upon behavioural commitment.

The implications for human resource management include: recognition of the influence that competing commitments have upon employees and the potential for judicious use of support; and, maintaining commitment in climates of job insecurity and job immobility. Suggestions for further research are given.

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# ORGANISATIONAL COMMITMENT OF PROFESSIONAL EMPLOYEES: MEASUREMENT AND INTERACTION EFFECTS

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**at the University of Leicester**

**by**

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CONTENTS


| | | Page No. |
|---|---|---|
| List of Contents | | i |
| List of Tables | | x |
| List of Figures | | xiii |
| Acknowledgements | | xiv |

**PART 1: SETTING THE CONTEXT**

CHAPTER 1 INTRODUCTION

| | | |
|---|---|---|
| 1.1 | Overview of the research study | 1 |
| 1.2 | Assumptions and delimitations of the study | 4 |
| 1.3 | The structure of this thesis | 6 |

CHAPTER 2 THE PHILOSOPHICAL BASIS OF THIS STUDY

| | | |
|---|---|---|
| 2.1 | Introduction | 10 |
| 2.2 | Social science research | 11 |
| 2.3 | A research paradigm for this study | 19 |
| 2.3.1 | The ontology of organisational commitment | 19 |
| 2.3.2 | The paradigm 'choice' for this study | 21 |
| 2.3.3 | Justification of the epistemological approach | 23 |
| 2.4 | Summary | 26 |

CHAPTER 3 ORGANISATIONAL COMMITMENT

| | | |
|---|---|---|
| 3.1 | Introduction | 28 |
| 3.2 | Commitment in early management thought | 29 |
| 3.3 | The importance of organisational commitment | 32 |
| 3.3.1 | Commitment and individual performance | 32 |
| 3.3.2 | Other outcomes of commitment | 35 |
| 3.4 | Four bases of organisational commitment | 37 |
| 3.5 | Meaning and measurement of organisational commitment | 42 |

| | | | |
|---|---|---|---|
| | 3.5.1 | On the meaning of organisational commitment | 42 |
| | 3.5.2 | Scales for measuring organisational commitment | 46 |
| | 3.5.3 | Summary | 50 |
| 3.6 | Foci of commitment | | 51 |
| 3.7 | Antecedents and correlates of organisational commitment | | 53 |
| | 3.7.1 | Antecedents and correlates | 53 |
| | 3.7.2 | Summary of concept development | 60 |
| 3.8 | Commitment and professionals | | 60 |
| | 3.8.1 | Professional commitment | 60 |
| | 3.8.2 | Professional and organisational commitment | 62 |
| 3.9 | Commitment, reciprocity and organisation | | 64 |
| | 3.9.1 | Organisational influences on commitment | 64 |
| | 3.9.2 | Commitment as a reciprocal construct | 65 |
| | 3.9.3 | Commitment and perceived organisational support | 70 |
| 3.10 | Revisiting the measurement of commitment | | 73 |
| 3.11 | Summary | | 79 |
| CHAPTER 4 | PROFESSIONAL-ORGANISATIONAL LINKAGES | | |
| 4.1 | Introduction | | 82 |
| 4.2 | General labour market developments | | 83 |
| 4.3 | Commitment and the psychological contract | | 92 |
| 4.4 | The organisational professional | | 98 |
| | 4.4.1 | Introduction | 98 |
| | 4.4.2 | The professional-organisational environment | 99 |
| | | 4.4.2.1 Professionals in the workforce | 99 |
| | | 4.4.2.2 Professions in the public sector | 101 |
| | | 4.4.2.3 Professions in the private sector | 109 |
| 4.5 | Summary | | 114 |

## PART 2: THE RESEARCH STUDY

# CHAPTER 5 RESEARCH DESIGN


5.1 Introduction 116
5.2 The research model 117
5.3 An approach to construct validation 120

5.3.1 Item generation 121
5.3.2 Item scaling 122
5.3.3 Quantitative analysis 122
5.3.4 The development of a nomological network 122

5.4 The choice of sample 136

5.4.1 Determining the sample domain 136
5.4.2 Determining a sampling strategy 137
5.4.3 Choice of sampling frame 139
5.4.4 The sampling frame 141

5.4.4.1 Chemists in the pharmaceutical sector 141
5.4.4.2 Accountants in the pharmaceutical sector 141
5.4.4.3 Accountants in the public sector 142

5.4.5 Sample size 142

5.5 Data collection 143

5.5.1 Exploratory Qualitative Research 143

5.5.1.1 The interview sample 143
5.5.1.2 The researcher's relationship to the researched 144
5.5.1.3 Aims of the exploratory research 146

5.5.2 Planning and piloting of the quantitative survey questionnaire 147
5.5.3 The measurement of variables 148

5.6 Data analysis 152

5.6.1 Qualitative analysis 152
5.6.2 Quantitative analytical techniques 151
5.6.3 Definition of multiple moderated regression 153
5.6.4 Measurement scaling and multiple moderated regression 153
5.6.5 Sample size for multiple moderated regression 154
5.6.6 The detection of moderator variables 155

5.6.7 Statistical significance levels 157

5.7 Software used for analysis 157

5.7.1 Multiple moderated regression 157
5.7.2 Structural equation modelling 158
5.7.3 Data entry and checking 158

5.8 Methodological problems and limitations 159

5.8.1 The use of self-report measures 159
5.8.2 Causal relationships 161
5.8.3 Method variance 162
5.8.4 Coping with method variance 165
5.8.5 Sample representativeness 165
5.8.6 The choice of measurement scales 167
5.8.7 The item pool for the new commitment questionnaire 168
5.8.8 The analysis 168
5.8.9 The assumption of linear interaction 169

5.9 Summary of the Research Design 169

CHAPTER 6 RECONCEPTUALISING ORGANISATIONAL COMMITMENT

6.1 Introduction 172

6.2 Characteristics of committed professionals 173

6.2.1 The benefits of commitment 173
6.2.2 How are committed professionals perceived? 173
6.2.3 Commitment to goals and values 177

6.3 Commitment and organisational support 180
6.4 Affective and continuance commitment 183
6.5 The implications for operationalising organisational commitment 184

6.5.1 Towards a new definition of organisational commitment 184
6.5.2 Some propositions 188
6.5.3 Summary and conclusions 189

6.6 Item pool for a new organisational commitment questionnaire 190

## CHAPTER 7 PSYCHOMETRIC PROPERTIES OF THE BEHAVIOURAL COMMITMENT SCALE


7.1 Introduction 193
7.2 Labelling of variables 194
7.3 Descriptive statistics for the three samples 195

7.3.1 Response rate and missing values 195
7.3.2 Personal characteristics of respondents 196

7.4 Changes in continuous variables with grouping variables 200

7.4.1 Sex differences 200
7.4.2 Union membership 200
7.4.3 Professional groupings 201
7.4.4 Summary 202

7.5 Reliability of item scores 203

7.5.1 Internal consistency reliability 203
7.5.2 Stability of the Behavioural Commitment Scale 206

7.6 Testing for the assumptions for linear regression 206
7.7 Zero-order correlation matrix 208

7.8 Factor analysis 212

7.8.1 Factor rotation, extraction and loadings 212
7.8.2 Results of exploratory factor analysis 213
7.8.3 Confirmatory factor analysis 215

7.9 Psychometric properties of the Behavioural Commitment Scale 217

7.9.1 Reliability analysis 217
7.9.2 Exploratory factor analysis 219
7.9.3 Confirmatory factor analysis 222

7.9.3.1 Factor structure 222
7.9.3.2 Assessment of model fit. 223
7.9.3.3 Generalisability of the new scale 227
7.9.3.4 Assessing the measurement model 227
7.9.3.5 Reliability 231
7.9.3.6 Strengths and limitations of CFA 232

7.10 Convergent and discriminant validity 233
7.11 Summary 236

## CHAPTER 8 EXPLORING THE COMMITMENT OF ORGANISATIONAL PROFESSIONALS


8.1 Introduction 238
8.2 Stepwise regression analysis 239

8.2.1 Multicollinearity 242
8.2.2 General relationships 242
8.2.3 Prediction of the dimensions of behavioural commitment 245
8.2.4 Implications of stepwise regression 247

8.3 Multiple moderated regression 248

8.3.1 Dealing with multi-collinearity 248
8.3.2 Interpreting the MMR regression equations 249
8.3.3 Criteria for detecting interaction effects 251
8.3.4 Structural equation modelling of interaction effects 252

8.4 Interaction effects: organisational commitment 252

8.4.1 Introduction 252
8.4.2 Perceived support and social exchange interactions 262
8.4.2.1 Organisational commitment 262
8.4.2.2 Summary 265

8.4.3 Professionalism and social exchange interactions 266

8.4.3.1 Organisational commitment 266
8.4.3.2 Summary 268

8.4.4 Scale reliability and interaction effects 268

8.4.4.1 Perceived support and social exchange 270
8.4.4.2 Professionalism and social exchange 271
8.4.4.3 Objections to sample trimming 271

8.4.5 Professionalism and job security 272
8.4.6 Professionalism and continuance commitment 274

8.5 Organisational commitment and qualitative moderator variables 277

8.5.1 Homogeneity of error variance 278
8.5.2 Perceived support and union membership 279
8.5.3 Professionalism and union membership 280
8.5.4 Perceived support and sex 280
8.5.5 Professionalism and sex 280
8.5.6 Perceived support and involuntary job change 281
8.5.7 Professionalism and involuntary job change 281

8.6 Interactions on the dimensions of behavioural commitment 281

8.6.1 Support/exchange 282
8.6.2 Professionalism/exchange 282
8.6.3 Professionalism/job insecurity 283
8.6.4 Professionalism/continuance commitment 284

8.7 Interactions on commitment to local foci 285

8.7.1 Perceived support and social exchange 285

8.7.1.1 Commitment to work group 285
8.7.1.2 Commitment to supervisor 286
8.7.1.3 Commitment to top management 287
8.7.1.4 Scale reliability effects 288

8.7.2 Professionalism and social exchange 289

8.7.2.1 Commitment to work group 289
8.7.2.2 Commitment to supervisor 289
8.7.2.3 Commitment to top management 289
8.7.2.4 Scale reliability effects 290

8.7.3 Professionalism and job security 291
8.7.4 Professionalism and continuance commitment 292

8.8 Chapter Summary 293

## PART 3: REVISITING COMMITMENT

# CHAPTER 9 COMMITMENT IN ORGANISATIONS: EXTENDING THEORY AND UNDERSTANDING


9.1 Introduction 298
9.2 The Behavioural Commitment Scale 298
9.2.1 Factor structure 299
9.2.2 Comparison with the Organizational Commitment Questionnaire 302
9.2.3 Comparison with other measures of organizational commitment 305
9.2.4 Job involvement, achievement and innovation 307
9.2.5 The combination of attitudes and behaviours 309
9.2.6 The case for self-report measurement 313

9.3 Contextualising behavioural commitment 315
9.4 Social exchange and perceived organisational support 321

9.4.1 Dealing with Type I and Type II errors 321
9.4.2 Size and form of interaction effects 322
9.4.3 Exchange, support and organisational commitment 324
9.4.4 Commitment to local foci 329

9.5 Organisational commitment and professionalism 332

9.5.1 The role of support 332
9.5.2 Organisational commitment, professionalism and social exchange 333
9.5.3 Social exchange and commitment to local foci 335
9.5.4 Organisational commitment, professionalism and job insecurity 337
9.5.5 Job insecurity and commitment to local foci 339
9.5.6 Organisational commitment, professionalism and continuance commitment 340

9.6 Closing the discussion 341
9.6.1 Supplementary findings 341
9.6.2 Causality 342

9.7 Chapter summary 343

CHAPTER 10 DRAWING CONCLUSIONS

10.1 Introduction 347
10.2 General conclusions 347
10.3 The contribution of this thesis 349
10.4 Practical implications 353
10.5 Revisiting the limitations 357
10.6 Suggestions for further research 359
10.7 Summary 362

Appendix A. Reflections and self-assessment 365

Appendix B. The historical development of the professions 372

Appendix C. Job activities of sample respondents 380

Appendix D. Exploratory interview schedule 382

Appendix E. Selection and piloting of attitude scales 383

Appendix F. The survey questionnaire 406

Appendix G. Pilot testing of the behavioural commitment scale 418

Appendix H. Dealing with multicollinearity and error variance in MMR 422

Appendix I. Structural equation modelling of interaction effects 429

Appendix J. Prediction of the dimensions of behavioural commitment 432

Appendix K. Multiple moderated regression statistics 436

Appendix L. Dealing with type I and type II errors 491

References 494

Bibliography 540

LIST OF TABLES


3.1 Four bases of organisational commitment 41
3.2 Item content of the Organizational Commitment Questionnaire 48
3.3 Item content of the Continuance Commitment Scale 49
3.4 Item content of the Affective Commitment Scale 49
3.5 Item content of the British Organizational Commitment Scale 50

3.6 Personal antecedents of organisational commitment 56
3.7 Role related correlates of organisational commitment 57
3.8 Job and organisational correlates of organisational commitment 58
3.9 Work experience correlates of organisational commitment 59
3.10 Individual strategies for coping with dissonance 67

4.1 Changes occurring in organisational environments 86
4.2 Comparison of old and new psychological contracts 95

5.1 Commitment as a function of social exchange and professionalism (P2) 132
5.2 Principal analytical techniques 133
5.3 The sampling frame used in this study 143
5.4 Interview participants 144

6.1 Item pool for a new organisational commitment questionnaire 191

7.1 Labelling of independent variables 194
7.2 Labelling of dependent variables 195
7.3 Descriptive statistics for the three professional samples 197
7.4 Comparison of CIPFA membership with the CIPFA sample by sex and age group 198
7.5 Comparison of RSC membership with the RSC sample 199

7.6 Variable means by main grouping variables 202
7.7 Internal consistency reliability of measurement scales 204
7.8 Means, medians and standard deviations for main variables 208
7.9 Zero-order correlation matrix 209
7.10 Zero-order correlations between key variables 210

7.11 Factor loadings (principal axis factoring with oblique rotation) 214
7.12 Reliability of scores for the Achievement subscale 217
7.13 Reliability of scores for the Innovation subscale 218
7.14 Reliability of scores for the Commitment to Goals subscale 218
7.15 Reliability of scores for the new Behavioural Commitment subscale 219

7.16 Final statistics from Principal Components Analysis of the Behavioural Commitment Scale 220
7.17 Pattern matrix for the new Behavioural Commitment Scale 221

7.18 Factor correlation matrix for the Behavioural Commitment Scale 221
7.19 Fit statistics from confirmatory factor analysis on the Behavioural Commitment Scale 224
7.20 Comparative fit indices on three samples 227

7.21A Regression weights for the Behavioural Commitment Scale 228
7.21B Standardized regression weights 229
7.21C Covariance and correlation estimates 229
7.21D Estimated variances of latent variables and error variables 230
7.21E Squared multiple correlations 230
7.22 Multitrait correlation matrix 235

8.1A Measures of organisational commitment, betas and significance levels for terms accepted by stepwise regression 240
8.1B Foci of commitment: betas and significance levels for terms accepted by stepwise regression 241
8.2 The prediction of behavioural commitment for each sample group 244
8.3A Prediction of the Commitment to Goals dimension of behavioural commitment 245
8.3B Prediction of the Achievement dimension of behavioural commitment 246
8.3C Prediction of the Innovation dimension of behavioural commitment 246
8.4 Commitment to work group: support/exchange interactions 250
8.5 F values for interactions between perceived organisational support and social exchange ideology (Proposition P2, Centred Variable) 255

8.6 F values for interactions between perceived organisational support and social exchange ideology (centred variables, high reliability cases for social exchange) 256
8.7 F values for interactions between professionalism and social exchange (Proposition P3, centred variables) 257
8.8 F values for interactions between professionalism and social exchange (Proposition P3, centred variables, high reliability cases for social exchange) 258
8.9 F values for interactions between professionalism and job insecurity (Proposition P4, high reliability cases for job insecurity) 259
8.10 F values for interactions between professionalism and continuance commitment Proposition P5, centred variables) 260

8.11 F values for interactions with qualitative moderators; union membership, sex, and involuntary job change 261
8.12 Behavioural commitment: support/exchange interaction (IVC) 263
8.13 Behavioural commitment: support/exchange interaction (tenure < 2years) 264
8.14 Respondent-defined commitment: support/exchange interaction (union members) 265
8.15 Respondent-defined commitment: professionalism/exchange interaction (CIPFA) 267

8.16 Social exchange: inter-item variance and reliability 270
8.17 Affective commitment: professionalism/job insecurity interactions (men) 273
8.18 Affective commitment: professionalism/job insecurity interactions (women) 274
8.19 Behavioural commitment: professionalism/continuance commitment interaction 275
8.20 Continuance commitment: correlations with organisational commitment by sample group 277

8.21 F values for interactions between perceived support and social exchange on the dimensions of behavioural commitment 282
8.22 F values for interactions between professionalism and social exchange on the dimensions of behavioural commitment 283
8.23 F values for interactions between professionalism and job insecurity on the dimensions of behavioural commitment 283
8.24 F values for interactions between professionalism and continuance commitment on the dimensions of behavioural commitment 284
8.25 Commitment to work group: support/exchange interaction 286

8.26 Commitment to supervisor: support/exchange interaction (IVC > 1) 287
8.27 Commitment to top management: professionalism/job insecurity interaction (age > 50) 291
8.28 Commitment to top management: professionalism/continuance interaction (IVC >=1) 293
8.29 Summary of survey data analysis (Propositions P2 to P5) and additional findings 295

**Tables in Appendices**

E1.1 Summary reliability statistics from the pilot survey 404

G1.1 Reliability of Achievement scale 418
G1.2 Reliability of Innovation scale 419
G.13 Reliability of the Commitment to Goals scale 420
G2.1 Means, variances, minimum and maximum values 420

H1.1 Multiple moderated regression, uncentred variables 423
H1.2 Multiple moderated regression, centred variables 424
H1.3 Ratio of within-subject error variance for men and women 426

H1.4 Ratio of within-subject error variance for union and non-union members 427
H1.5 Ratio of within-subject error variance for involuntary job change 428

J1 Prediction of Commitment to Goals, CIMA 433
J2 Prediction of Commitment to Goals, CIPFA 433
J3 Prediction of Commitment to Goals, RSC 433
J4 Prediction of Achievement, CIMA 434
J5 Prediction of Achievement, CIPFA 434
J6 Prediction of Achievement, RSC 434
J7 Prediction of Innovation, CIMA 435
J8 Prediction of Innovation, CIPFA 435
J9 Prediction of Innovation, RSC 435

K1A-K15C Beta weights for all MMR regression equations 438
KA1-KA20 Perceived support and social exchange interactions 450
KB1-KB28 Professionalism and social exchange interactions 456
KC1-KC15 Professionalism and job insecurity interactions 464
KD1-KD21 Professionalism and continuance commitment interaction 468
KE1-KE6 Qualitative moderators 474

KF1-KF5 Perceived support and social exchange interactions on the dimensions of behavioural commitment 476
KG1-KG14 Professionalism and social exchange interactions on the dimensions of behavioural commitment 478
KH1-KH5 Professionalism and job insecurity interactions on the dimensions of behavioural commitment 482
KJ1-KJ21 Professionalism and continuance commitment interactions on the dimensions of behavioural commitment 484

L1.1 Reliability and range of values for sample sub-groups 492

LIST OF FIGURES

Fig. 1.1 Flow chart showing the main stages and components of this thesis 9

Fig. 3.1 The components and expression of organisational commitment 80

Fig. 5.1 Unmoderated and moderated regression models of perceived support and social exchange 134

Fig. 5.2 The Theoretical Model for this Study 135

Fig. 7.1Three-factor oblique model of behavioural commitment 225

Fig. 9.1 The process of organisational commitment among organisational professionals 310

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## Declaration of Authenticity

This thesis is the result of work done during the period of registration and is wholly the work of the the author. No part of this work has been submitted for another degree. This thesis may be made available for consultation, photocopying and for use at other libraries, in accordance with the regulations of the University of Leicester.

S Swailes .....

# PART 1

# SETTING THE CONTEXT

# CHAPTER 1

# INTRODUCTION

## 1.1 OVERVIEW OF THE RESEARCH STUDY

The concept of commitment is present throughout the management literature of the twentieth century. Commitment, broadly defined, is still widely seen as one of the keys to unlocking organisational potential and popular management wisdom holds that, without commitment from employees, organisations will be unable to maximise the impact of strategically important initiatives such as the management of change and the achievement of competitive advantage (Cheng and Kalleberg, 1996; Guest, 1998; Millward, 1994; Storey and Sisson, 1993). Much of the literature on organisational commitment that has appeared in the past 25 years has a debt of recognition to a paper published by Porter, Steers, Mowday and Boulian (1974) and to a classic text on the subject by Mowday, Porter and Steers (1982). Their influential view of commitment held that commitment is predicated upon an individual's belief in the goals of an organisation, a willingness to exert effort for the organisation and a desire to stay with the organisation. Our understanding of the nature of commitment, however, remains rooted in a line of thinking that has its origins long before society entered what has become known as a post-industrial or post-modern era (e.g. Kumar, 1995). Fundamental social and economic changes have brought about changes to the way people relate to organisations and so, it will be argued, to commitment which lies at the heart of the employee-organisation linkage. The new climate for employee relations affects both public and private sectors and can be explained through a reshaped psychological contract between employee and organisation that has embodied a change of emphasis in which the responsibility for career development has transferred from the employer to the employee.

Commitment in organisations has many faces and the thrust of strategies for creating and sustaining commitment among a workforce is usually aimed at engendering commitment to the organisation. By most definitions, organisational commitment involves a relationship between the employee and the organisation. This relationship has been variously defined in the organisational behaviour and organisational psychology literature but the most pervasive definitions centre around the notion of the employee strongly believing in the goals of the organisation that they work for. Having accessed the literature concerning commitment, however, I began to feel uneasy with the widespread acceptance of this broad definition and the way it has been operationalised as, for me, it did not capture the views that I had developed about commitment as a consequence of working in organisations for over 20 years, firstly as a technical specialist and subsequently as a junior and middle manager. Of particular concern was the commitment of organisational professionals, that is, professionals employed in bureaucratic organisations, as the literature shows a long-standing concern with conflict between the professional's commitment to their organisation and to their profession. As the first part of this thesis will show, not only has the climate for commitment been transformed by changed expectations, the status of the professions and of professional ideology have also come under fire. These two parallel developments call for a reassessment of the way that the organisational commitment of organisational professionals is defined and operationalised. Further concern surrounds the meaning of commitment as distinct from its causes and outcomes. Based upon my work experience, I felt that the literature had not sufficiently distinguished the root causes of commitment, usually seen as attitudinal, economic, or behavioural, from the expression of commitment itself. Furthermore, my work experience caused me to question the clarity with which the literature has delineated commitment from its presumed outcomes and, as such, despite an extensive literature, I was moved to pursue the topic further. Thus the first objective is to develop a fresh understanding of the concept of organisational commitment and this is captured by the question,

- What is the nature and form of organisational commitment among organisational professionals?

Taking a quantitative occupational and organisational psychology perspective, and assuming that the nature and form of organisational commitment have altered as a consequence of the new employee relations climate, the second objective is to create a new way of measuring organisational commitment and this leads to the second research question,

- How can contemporary thinking about organisational commitment be operationalised into a new, and more apposite, measurement scale?

The third objective is to examine how the new form of organisational commitment is influenced by other variables that are known to influence job-related attitudes and which are prevalent in the new employee relations climate. This objective cannot be achieved within a single study and will require much more theory development and testing before a new form of commitment is fully understood. In order to initiate such a revision, however, and following a consideration of the basis for commitment in professional organisations, the following research questions will cast light upon objective three.

- What is the extent of the reciprocal nature of organisational commitment among organisational professionals?

- To what extent is organisational commitment related to professional ideology?

- How does professional ideology affect the reciprocal basis of commitment?

To pursue these objectives, organisational commitment is viewed through the lens of a changed psychological contract brought about by the climate for employee relations that exists in a post-industrial society. This thesis engages with the appropriateness of existing measures of organisational commitment and describes the development of a fresh measure for use by researchers. This development occurs from the ground upwards and is rooted in notions of commitment that have sense and meaning to the managers of professional employees.

The research is needed for two reasons. First, to examine and address some difficulties present in the literature on organisational commitment which, if unchecked, will act only to perpetuate the use of outmoded measurement scales that carry the risk of steering researchers to erroneous conclusions about organisational commitment. Second, at the time of conceiving this thesis, levels of commitment were generally thought to be low following extensive organisational restructuring and the introduction of extensive managerialism to professional work settings. Indeed, in Britain, motivation and commitment levels declined sharply in the early 1990s to levels that were among the lowest in Europe and lower than they were during the confrontational industrial relations climate of the mid-1970s (ISR, 1995, p.12). Thus, if future research is to identify variables that are particularly influential upon commitment, then it is important that researchers have access to a measurement instrument that is located in post-industrial employee relations.

## 1.2 ASSUMPTIONS AND DELIMITATIONS OF THE STUDY

The achievement of the research objectives is tempered by the reality that all social research is based upon assumptions pertaining to the nature of the topic being investigated and the data obtained. The primary assumptions present in this study are given below.

1. Commitment and related constructs have an external existence and hence it is possible to describe and measure them at the level of the individual. The philosophical basis of this assumption is analysed in chapter 2.

2. Self-reports of the constructs of interest to this study are sufficiently reliable and accurate to justify an exploration of how the constructs are related to each other. This assumption is considered in detail in chapter 5 which deals with the research design.

3. The ordinal level data obtained from self-report questionnaires can be treated as interval level for the purposes of statistical analysis without harming the conclusions reached (see also chapter 5).

4. That the variables measured through a cross-sectional quantitative study were in stable equilibrium.

5. The examination that follows of relationships among variables assumes certain directional associations between them, for instance, that professionalism influences commitment and not that commitment influences professionalism. The inability of cross-sectional studies to verify causal relationships is well known and yet the establishment of causality in non-trivial social and behavioural science studies is experimentally and philosophically difficult, regardless of the research designs employed (see Sobel, 1995). Thus, it is assumed that a cross-sectional survey carried out as a test of theory, when complimented with qualitative research, can enhance our understanding of the commitment domain.

For practical reasons all social research is bounded by time constraints and methodological choice and the particular delimitations of this study are as follows.

1. The study is limited to a sample of the employees in three occupational groups who are based in the United Kingdom. The occupational groups selected were all organisational (corporate) professionals and the study does not, therefore, extend to non-professional employees. Caution should also be used when extending the findings to independent, high-status professional groups.

2. The sample respondents were drawn from a large number of organisations and thus commitment was not examined in any particular organisational context.

3. Work commitment is a multi-faceted concept comprising commitments to diverse groups and constituencies. Many aspects of the total work commitment domain are unexplored and the focus rests solely upon commitment to the organisation.

4. The study does not explicitly focus on the human resource strategies that may lead to high commitment from employees. While this is an important problem for both researchers and practitioners, this thesis is concerned with the prior question of clarifying the nature and meaning of organisational commitment

## 1.3 THE STRUCTURE OF THIS THESIS

This thesis adopts a traditional structure for reporting quantitative research in organisational behaviour and psychology in that Part 1, Setting the Context, (chapters 1-4) draws upon the literature concerning commitment to develop a case for the study. Part 2, The Research Study, (chapters 5-8) presents the research design and the findings from the research. Part 3, Revisiting Commitment, (chapters 9-10) discusses the findings and draws out the implications for commitment theory, moving towards some conclusions and a contribution to an understanding of commitment at work. In arriving at this structure, I was keen to develop and unfold a research study rather than present a 'cold' scientific report and, in doing so, treat the reader as an examiner, like a reader of any piece of academic research (Johnston, 1997). As such, further assumptions and limitations are introduced throughout the thesis in an effort to illustrate how the thinking, design and analysis were unfolded throughout the duration of the study.

Following this introductory chapter, chapter 2 deals with the philosophical basis of the thesis and states the main epistemological and ontological assumptions that underpin the study. The concept of organisational commitment is then examined in depth in chapter 3 with emphasis upon the notion of commitment as a reciprocal construct and its relationship to organisational support. Chapter 4 summarises developments in people management with

an emphasis upon showing how the employment climate has affected the commitment of professional employees in particular.

Part 2 of the thesis opens with chapter 5 which develops a model to assist the development of an improved commitment scale and which presents the research design. The rationale for sample selection is given together with the methods of qualitative and quantitative data collection, the measurement scales used, and the analytical procedures that were employed in the study. The limitations of the research design are identified and discussed.

Chapter 6 presents the results of an exploratory, qualitative study that examined the meaning of organisational commitment among the managers of professional employees. Stemming from this survey, an item pool was developed for use in the testing and validation of a new organisational commitment scale.

Chapter 7 presents the general findings from a large quantitative survey of professional employees with a particular emphasis on the characteristics of the samples obtained. Data screening is also conducted to assess the general characteristics of the data and to ensure that the quantitative data obtained complied with the assumptions of the statistical techniques used. The findings from exploratory and confirmatory factor analysis and tests of convergent and discriminant validity to establish the psychometric properties of the new organisational commitment scale originating from the qualitative survey described in Chapter 6 are presented.

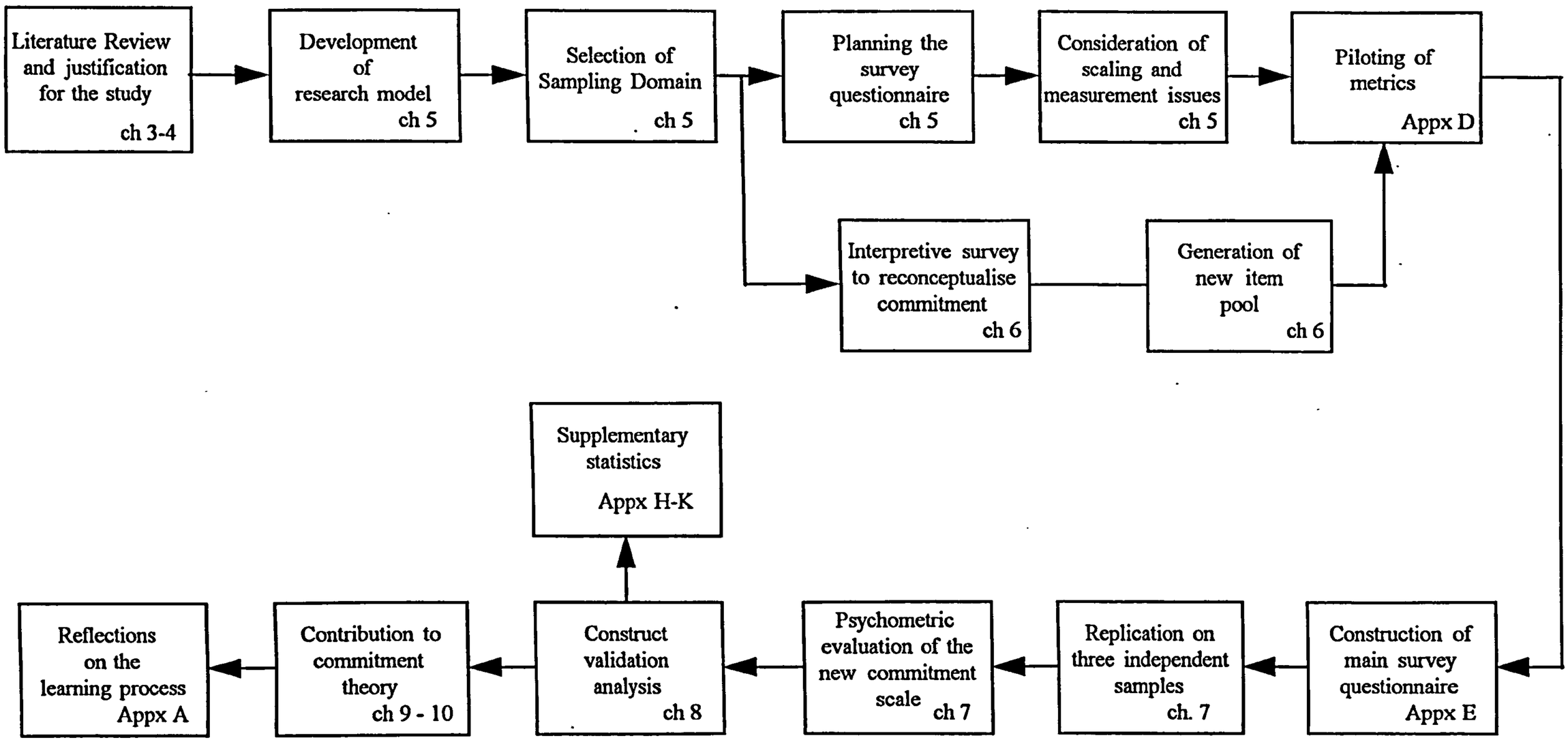
Chapter 8 extends the validation of a new commitment scale by demonstrating criterion-related validity. This is achieved by locating the new scale in a nomological (theoretical) network of other constructs including professionalism, perceived support and social exchange ideology. The moderating effects of perceived support and professionalism upon commitment to various foci are analysed in the context of situational factors such as tenure and the respondents' career history.

Part 3 of the thesis opens with Chapter 9 which discusses the key findings of this research in relation to existing theory concerning commitment and other closely related concepts. The new measure of commitment is compared and contrasted with existing commitment scales and the conditions under which certain variables appear to influence organisational commitment are discussed.

Chapter 10 draws out the conclusions arising from the study and demonstrates the contribution of the thesis to industrial/organisational psychology. The limitations of the study are revisited and suggestions for further research are given.

A flow chart showing the structure and content of this thesis, and the sequence of events that took place in the research process, is given in Figure 1.1. Appendix A contains my reflections written at the end of the research study and which contain my views about the research process and about research into management together with a comparison of the overall study to criteria for doctoral theses. Other appendices contain supplementary information concerning the piloting of measurement scales, the survey questionnaire, techniques for coping with statistical problems that arose during the study and supplementary statistical analyses. The empirical phase of this study follows closely the traditions of quantitative organisational research and this is reflected in the presentational style, particularly for Parts 2 and 3 of the thesis.

Figure 1: Flow Chart Showing the Main Stages and Components of this Thesis



# CHAPTER 2

# THE PHILOSOPHICAL BASIS OF THE STUDY

## 2.1 INTRODUCTION

The research student is advised to conduct his or her particular study because of a personal need to know about the topic (Rudestrom and Newton, 1992). This need has to be present if the research process is to be sustained over a long period, as is certainly the case with a doctoral thesis. A researcher's view of the world is shaped by their thought style (Fleck, 1979) and this will also influence the topic selected and the way that it is pursued. Even modest familiarity with the literature on organisation theory, and social research in general, reveals that the research community employs a host of philosophical approaches in a search for a better understanding of social phenomena. This diversity results from the multitude of different thought styles that is brought to bear upon research problems.

This chapter will show how these approaches can be grouped into a small number of research paradigms, each having an implicit set of philosophical assumptions of which individual researchers may, or may not, be aware. The presence of multiple paradigms presents a problem for the doctoral student, in social research at least, since the core requirement of a doctoral thesis is to study some aspect of the social world in order to make a contribution to knowledge or understanding, albeit on a small scale. It is difficult to imagine how a researcher can claim to make a contribution until they know where they stand in relation to contrasting sets of philosophical beliefs. This problem is compounded by the respective power of the various approaches (paradigms) to enable a contribution in a given academic field. It becomes necessary, therefore, for candidates who are pursuing social science doctorates to confront two complex areas of philosophy at the start of their research, namely, the epistemological and ontological assumptions and beliefs that will come to guide them. Epistemology is a branch of philosophy that concerns itself with understanding how knowledge can be generated and communicated, that is, how we come

to know and understand things. Ontology concerns the related area of what can be known, that is, the kinds of entities that exist and whether an entity has an existence external to the individual or whether it is a product of one's imagination (Burrell and Morgan, 1979, p.1). This chapter examines commitment in this framework and has three main aims; to consider the ontology of commitment, to consider how commitment can be studied, and, to present a methodology that will shape the future conduct of the thesis. In this context, methodology is used here to refer to a set of philosophical assumptions that underpins the research in contrast to 'method' which relates to the actual method(s) of data collection and analysis. Methodology is not itself a study of methods although it is concerned with justifying a choice of particular methods.

## 2.2 SOCIAL SCIENCE RESEARCH

The earliest philosophical tradition brought to bear on social research, and which is still highly influential, assumes that a social world exists which follows law-like propositions, for example, Durkheim's work in the nineteenth century on the explanations of suicide (Durkheim, 1895, 1950). In the same way that the natural world has an external, separate, existence to the researcher that can be examined then, so it is assumed, does the social world and it becomes the task of the social scientist to select research methods that can capture data about social phenomena. If this view of an external social world is accepted, then it follows that principles similar to those used by natural scientists should hold (Easterby-Smith, Thorpe and Lowe, 1991, p.23). They are:

- The researcher does not influence the people or objects being researched.
- Phenomena such as commitment can be 'operationalised' and, in turn, measured quantitatively. In this sense the research approach is 'nomothetic', meaning that the phenomena apply to all organisations and do not differ between them.

- Causal relationships between phenomena can be used to explain attitudes and behaviour.

- Large samples are needed to obtain statistical generalisability.

- Knowledge can be generated by hypothesis testing on representative samples.

These principles and assumptions describe a Positivist[1] approach to social research and has been used to group together the approaches used by some of the 'founding fathers' of social science, namely, Comte, Durkheim, Weber and Marx (see Bryant, 1985; Giddens, 1993; Hollis, 1994). Hollis, however, prefers the term 'positive science' to describe the application of scientific method to social research, 'conceived as belonging to a natural order open to objective enquiry' (1994, p.41). Positive science approaches to social research borrow heavily from research designs used in the natural sciences in that they assume that social systems can be treated in the same way as natural systems. Specifically, they assume that laws exist in social systems, that the objects of research (people) can be isolated and that laws (knowledge) can be extracted and generalised from samples to wider populations by a researcher who remains detached from the subjects being studied. Thus, positive science holds that there are facts about the social world that can be collected and analysed independently of the people from which the facts were obtained (May, 1993, p.6). Research in this tradition commonly, but by no means exclusively, seeks to quantify variables of interest and the quality of research is commonly assessed in terms of statistical measures of reliability and validity and through the rigour with which quantitative analyses are conducted including sampling considerations, researcher objectivity and the correctness with which statistical techniques are applied (Guba and Lincoln, 1994, p.115). Positivist organisation theory is still common in the literature and the underpinning research approach was used for some influential studies, notably those concerning the determinants of organisational structure (e.g. see Donaldson, 1996, pp.1-4).

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[1]Burrell and Morgan (1979, p.5) consider Positivism to be a particular kind of epistemology that looks 'for regularities and causal relationships between its constituent elements'.

However, criticism of positive science in social research is well documented (Giddens, 1993, p.138; Hassard, 1994, p.308; Hughes, 1981, p.21; Marsh, 1992, p.87) and alternative research approaches have been developed to overcome certain objections. Central to the anti-positivist standpoint is rejection of its key assumptions that permanent laws exist in social systems and that these laws can be extracted and analysed in isolation from the social system itself leading to May's (1993, p.7) observation that positivist methods, '..reflect the everyday world but not the conditions which make it possible'. Thus, while a self-report questionnaire (commonly used in positivist research) can assess attitudes, this approach struggles to shed light upon the reasons why individuals or groups have come to hold those attitudes or how those attitudes could change with circumstances. Positivist research places a high value upon the objective, detached researcher, and yet there has been a shift towards engagement with the subject matter 'as a condition of understanding social life' (May, 1993, p.9). In response to concerns about the plausibility of the assumptions of positive science, when applied to social research, alternative philosophical approaches have developed, namely, phenomenological, inductive, interpretive, qualitative, social-constructionist and ethnomethodological, although these terms have distinct meanings and are not synonymous. The key thrust of these alternative approaches is that knowledge gained from positivist research in social systems is flawed as it is detached from the rich explanations that individuals could give it.

These alternative approaches have been collectively termed 'phenomenological' (Easterby-Smith et al., 1991, p.24) and for simplicity this term is used here in order to show a contrast with positive science. The essence of phenomenological approaches is that attitudes and behaviour are determined by their social setting, that is, they are 'socially constructed', and hence it follows that the researcher should seek to understand and explain phenomena in a particular, localised, setting rather than seek universal laws that attempt to explain them free of any context. This dichotomy of research approaches is also found in Evered and Louis (1991) who contrasted 'enquiry from the outside' (positive science) with 'enquiry from the inside' (phenomenology). However, the dichotomy is for ease of understanding only and does not indicate that a simple two-way choice confronts the social researcher. In comparison to the five principles of positive science (above), equivalent

principles of phenomenology are:

- Researchers cannot avoid influencing the findings of research and this is an accepted feature of the research process.

- Causal relationships among variables may exist but will be contextualised and not necessarily generalisable to other settings.

- Operationalisation and measurement of variables would only be valid in the context of a particular research location (and would generally be avoided).

- Relatively small samples are sufficient to provide a 'thick description' (Geertz, 1973, p.10) and 'rich' and 'deep' insights into the phenomena of interest (Sieber, 1973, p.1335).

- Knowledge gained is localised and emerges from the use of research questions rather than hypothesis testing and phenomenology is more concerned with developing theory than testing it.

In sum, phenomenological research is considered to be better suited to the exploration of social processes rather than social structure (Van Maanen, 1983) and to situations where theory cannot so readily be developed in advance and then tested. Theory emerges from the analysis rather than testing *a priori* theory by hypothetico-deductive methods (Sutton and Staw, 1995). It tends to rely upon qualitative methods and the 'quality' of research is assessed using the criteria of 'trustworthiness, credibility, transferability, confirmability' (Denzin and Lincoln, 1994, p.13). These criteria are similar to notions of authenticity, plausibility and criticality proposed by Golden-Biddle and Locke (1993). Authenticity helps the reader to accept that the researcher was immersed in the situations being described and, through that immersion, gained a solid understanding of them. Plausibility is achieved when the reader is convinced of the methods used and criticality is achieved when readers begin to re-examine the taken-for-granted assumptions in the field.

The dichotomy of approaches above illustrates a serious tension that arises from efforts to achieve a good balance of relevance and rigour in research. Positive science allows the rigorous examination of narrowly-defined problems whereas phenomenology is strong at examining important problems albeit with 'messy' data collection and analysis techniques. Management research is thus open to the criticism of either using highly sophisticated and powerful methods on trivial problems, or of exploring important problems with unsophisticated methods. Ideally, more management research should move towards a position where both relevance and rigour are present[2]. A third dimension can be added to this view, which is the implication of the research design for the development of theory. Thus, ideal research designs would combine the rigorous pursuit of relevant problems with a high potential for making theoretical contributions.

Although the dichotomy summarised above helps to contrast different approaches to social research it is somewhat simplistic. Hatch (1997) describes four perspectives on research in organisation theory in which she adds 'Classical' and 'Postmodern'. The classical approach is based upon deep personal reflection on experience, for example, as was used by early writers such as Weber and Fayol in their accounts of organisations and management. The postmodern approach adopts largely theoretical, in contrast to empirical, methods being based upon the idea of 'deconstruction', that is, reducing arguments to their base assumptions and challenging those assumptions. Hardy and Clegg (1997) also propose four research approaches; normative (positive science), interpretive (phenomenological), postmodern, and critical theory. Critical theory approaches appear to be relevant where the main focus of the research is on power relations, conflict and domination at work and are also highly theoretical.

The different approaches outlined above represent what Kuhn (1970) termed paradigms, and which represent, 'the entire constellation of beliefs, values, techniques, and so on, shared by members of a given community' (1970, p.175). The concept of paradigm has

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[2]The Relevance/Rigour idea was presented by Gerry Johnson to the British Academy of Management Conference, London Business School, September, 1997.

been criticised for the lack of clarity associated with the term. Nevertheless, it usefully draws together and describes some commonalities in philosophical assumptions, the beliefs of particular research communities and the tools and language that they use to describe their world (see Masterman, 1970). Burrell and Morgan (1979) developed a four paradigm schema for defining paradigms in use by social and organisational analysts and their model has been influential among organisation theorists (Hassard, 1991, p.24). It is based upon classifying 'four sets of assumptions related to ontology, epistemology, human nature and methodology' (1979, p.1) Ontological assumptions are polarised between realism, in which the social world comprises tangible entities that exist independently of the researcher, and nominalism, which assumes that there is no certain, tangible world and that concepts serve only to make sense of what is observed (p.4). Epistemological assumptions are polarised between positivism and anti-positivism which denies the search for law-like relationships and which maintains that understanding comes from the researcher 'occupying the frame of reference of the participant', (p.5). Assumptions about human nature are polarised between determinism in which people are presumed to respond in predictable manner to situations, and voluntarism, which assumes that people are unpredictable and autonomous (p.6). Methodology is polarised between a nomothetic approach that typically relies upon hypothetico-deductive method and implied generalisation of findings, and an idiographic approach which celebrates the uniqueness of participants and which denies generalisation.

The Burrell and Morgan paradigms are obtained by considering two dimensions, the subjective versus objective approach to social science, which essentially parallels the positivist and phenomenological approaches, and approaches which seek to either explain social order and stability or which seek to explain the motives for social change and conflict and which challenge the forces for stability (1979, p.10). The four paradigms that result are comparable to those outlined above in that the functionalist paradigm is comparable to positive science through its assumptions that the social world has a real and fixed existence which is objective not subjective and which is essentially stable. Researchers would typically distance themselves from the researched and seek to produce stable and useful knowledge. The interpretive paradigm is broadly comparable to the phenomenological approach above in that it does not assume that a fixed social reality

exists, preferring instead to see it as the product of subjective experiences. It is best understood by the researcher sharing the experiences of the researched and then attempting to make sense of them. The idea of an objective social science is largely rejected. The radical humanist paradigm, in common with the interpretive paradigm, sees the world as socially constructed but, additionally, is concerned with problems of social change and conflict. It engages aggressively with capitalism and the 'ideological superstructures' that prevent individuals from achieving total fulfilment and appears to share conceptual ground with postmodern approaches. The radical structuralist paradigm also concerns itself with social change, rather than explaining stability, but accepts an objective rather than subjective view of the social world. Thus an independent social reality is thought to exist but which embeds forces for radical change.

The main message that I draw from a consideration of these paradigms (Burrell and Morgan, 1979; Hardy and Clegg, 1997; Hatch, 1997; Morgan, 1990) is that none of them can claim some moral or pragmatic ascendancy. Each approach is verifiable only as far as the power of argument is able to persuade the researcher to adopt one belief system above another. Each approach enjoys a strong following as evidenced by the number of journals with very different editorial policies concerning the type of research they wish to publish[3] but no approach should be dogmatically preferred ahead of another (Hughes, 1981, p.27). Each approach has its limits and weaknesses (Hardy and Clegg, 1997); positive science for its attempts to depersonalise and decontextualise complex social phenomena, phenomenology for struggling to create valid descriptions of the people it claims to speak for; critical theory and postmodernism for producing convoluted narratives based on largely on conceptualisation rather than observation in which the meaning and relevance for management practice are hard to identify.

It trivialises the complexity of social research to consider that the researcher makes a conscious choice of research paradigm to follow for a given study. While four paradigms

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[3]Compare, for instance, the narrative style and content of articles in the *Journal of Management* with those in *Organization*.

appear to represent the current range of approaches taken by researchers, from my involvement in the academic community, I am able to make three observations. Firstly, that researchers do not simply 'choose' from the paradigms. Instead, their 'choice' is made for them by their early education and training and the beliefs they already hold about the social world when they begin to research (Bechhofer, 1981, 1996). Important among these beliefs is Burrell and Morgan's voluntarism-determinism divide concerning the essence of human nature. The second observation is that researchers tend to continue working within a particular paradigm and seek fresh research projects which allow them to utilise the vocabulary and techniques that they have acquired on new research problems. Third, there is generally little switching by individual researchers between paradigms although such switching as does occur seems to usually represent a move away from positive science towards phenomenological paradigms and occurs over a long period of time.

Thus, other criteria should come into play when research approaches are 'selected'. These include the researcher's own beliefs and preferences, the importance of injecting rigour and creativity into research (Silverman, 1993, p.10), in management research the relevance of research to practitioners (ESRC, 1994, p.16; Tranfield and Starkey, 1998) and the notion of reflexivity (Hardy and Clegg, 1997). Reflexivity calls for the researcher to locate his or her theory in the context of other theory, to engage with diverse approaches rather than follow a single approach in the confines of a narrow literature, and to show how the researcher and practitioners benefit, in practical terms, from theory that is developed. It is the presence, or absence, of these criteria that contribute to the production of 'good' management research in conjunction with the adoption of research methods that are appropriate to the questions being asked. Having summarised research paradigms, it is now necessary to return to the specific issue of research into organisational commitment before the paradigm 'choice' for this study is given.

## 2.3 A RESEARCH PARADIGM FOR THIS STUDY

### 2.3.1 The Ontology of Organisational Commitment

There is, in the field of organisation theory, a wide range of phenomena that managers, scholars and employees use to make sense of their world. Common among these are motivation, job satisfaction, loyalty and, of interest here, organisational commitment. Textbooks on organisations usually have chapters covering these and other concepts and it is taken for granted that they exist. Indeed, a criticism of such texts is that they rarely contain much discussion about the rationale for the existence of such concepts such (e.g. Daft, 1989; Spector, 1996). Their existence appears to be largely taken for granted. At a basic level, one might argue that if a concept can be described and defined, then it exists. But this argument could be taken to absurd limits and is not a valid one (Hospers, 1981, p.427). Unlike entities in the natural sciences (e.g. heat, rocks and fossils), it is not obvious that commitment has a separate existence, nor is it obvious what its existence looks like. In order to develop some ontological assumptions, it is necessary to return to a starting set of questions: what is the evidence for belief in organisational commitment; what is the evidence against such a belief; and, what can be said about the nature of organisational commitment[4]?

In response to these questions, it is evident from a review of the human resource management and organisational behaviour literature (see Chapters 3 and 4) that there is widespread belief in the existence of a concept that has come to be called organisational commitment and that this belief has been present in the literature for nearly 100 years. A search of computer databases *Psyclit* and *ABI/Inform* shows that in the past 25 years, several thousand articles have been published on some aspect of workplace commitment. The journal source of these articles is mostly North American and the research studies mostly follow a positive science approach as judged by the journal titles that most

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[4]This sequence of questions was adapted from Hospers (1981, p.425).

commonly occur[5]. The concept of organisational commitment was also found, albeit to a much smaller extent, in journals that favour phenomenological research and which saw the concept through a nominalist ontology (e.g. see Coffey, 1994; Grey, 1994). Noteworthy among the majority of articles on organisational commitment is the widespread and uncritical use of two or three popular measures of commitment across diverse sample groups and the frequent use of quantitative survey designs leading to studies of causal relationships. The overwhelming ontological assumption in the literature is that organisational commitment has an external, and largely universal, existence and a largely universal meaning. It, therefore, fulfils a Realist ontology using the schema of Burrell and Morgan (1979). Furthermore, in compiling this thesis, no evidence was found that belief in commitment is redundant. Morrow (1983), in fact, found the opposite as several concepts used by researchers to describe life in organisations (e.g. career salience and job involvement) were found to be partially redundant with organisational commitment which proved to be a more distinctive concept.

Subsequent chapters will expand upon the nature of organisational commitment but, to summarise here, it is usually thought to be predicated upon employees working towards the goals of an organisation and it can be influenced positively or negatively by a range of other variables that are believed to be antecedent to it. While it is easy to see the formal, legal, organisation in the form of buildings, equipment and staff, it is much harder to see the social structures that exist and which make the organisation function. It is the social structure, particularly among top management, that creates the goals which provide the fundamental reason for the organisation to exist. Given that commitment relates closely to the pursuit of goals, it is a concept that is central to the idea that organisations are social entities.

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[5]A Search of the Psyclit database for 'organizational commitment' in 1999 revealed almost 1000 articles and the top five sources were: *Journal of Organizational Behaviour; Journal of Applied Psychology; Journal of Management; Human Relations* and *Academy of Management Journal.*

It would be uncritical of any researcher to accept without comment the 'taken for granted' assumptions of a research community. I find myself therefore, reflecting upon my own working experience in several organisations during which I have heard managers and sub-ordinates speak of varying levels of commitment to objects such as the organisation, to customers and to the job. This experience is enough to convince me that commitment has a distinctive existence that is considered to be real and capable of being apprehended and which is quantified and appraised by others. Having worked in diverse organisations, and importantly with many organisations, I have developed reservations about the universality of the research community's interpretation of commitment and this is underlined by the observation that thousands of studies involving many thousands of employees have applied a narrow range of operationalisations of commitment that, in themselves, each muster only around 100 words[6]. This must raise questions about the meaning and relevance of the definitions when the very wide range of sample groups to which the definitions have been applied is considered. This observation is now incorporated into some considerations pertaining to the overall paradigm approach for this study which is given below.

### 2.3.2 The Paradigm 'Choice' for this Study

It is necessary at this point to recall the research questions guiding this thesis:

- What is the nature and form of organisational commitment among organisational professionals?

- How can contemporary thinking about organisational commitment be operationalised into a new measurement scale?

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[6]By operationalisation, I mean the way in which a definition of commitment is converted into a measurement scale (attitude scale) for use in research. The word count of the Affective Commitment Scale (Meyer and Allen, 1984) totals 94. In the full 15-item Organizational Commitment Questionnaire (Mowday et al., 1982), commitment is described using 226 words although a shorter, 9-item, version is commonly used.

- How do contemporary views of organisational commitment or organisational professionals compare to current commitment theory?

These questions, in particular the way they are phrased, have a large bearing upon the suitability of alternative paradigms that may be employed to pursue them. It would be possible to take an entirely theoretical approach to the first question but my preference is to begin the exploration using a qualitative study to explore the meaning of commitment within a particular occupational group. This appeals to my thought style and my desire that the research should, as far as is reasonable, be located in organisations as a way of maximising its relevance to practitioners and to academics. The second question concerning the operationalisation of organisational commitment implies a positive science approach and this is justified in that I believe that it is valid to talk of organisational commitment as an external entity that can be measured and this belief underpins the whole thesis. The third research question concerning a comparison of findings will be pursued through a positive science approach that involves examining the relationships among a set of measured variables. However, I am less convinced that organisational commitment has a truly universal (nomothetic) nature and believe that its form will differ between broad occupational groups and settings and it becomes necessary, therefore, to study commitment within a well defined occupational group. I do not, however, take the view that commitment as elaborated in one setting cannot be extrapolated to any other, even if similar, setting. I am therefore comfortable with the idea of examining commitment in one context and extending the findings to other contexts where there are similarities in terms of occupations, type of employment and macro-environmental conditions.

In terms of Burrell and Morgan's (1979) schema, the approach followed in this thesis is largely functionalist in that the ontology is decidedly realist, the methodology is essentially nomothetic although I am concerned to avoid universal generalisation and seek a 'bounded generalisation' stance through a focus upon distinct occupational groups. Assumptions of human nature in the study are deterministic. The epistemological stance is largely positivistic but is built upon a study that explores commitment with a group of employees at the outset.

### 2.3.3 Justification of the Epistemological Approach

In this thesis it is important to recognise that the objectives will be tackled sequentially as each builds upon the other. As such, an exploratory study was used to inform a largely functionalist and quantitative development of a measure of commitment. This combination helped to maximise the utility and relevance of the functionalist approach and this was an attempt to address the paradigm's biggest weakness. Thus, this research is not faced with the difficulty of integrating the findings from multi-paradigm studies that had exactly the same objectives. Here, a little qualitative research was conducted in a positivist frame of mind in order to shed some light upon commitment before taking those findings forward in another way. In this fashion, I believe that the nature of the research questions are being allowed to dictate a considered choice of research methodology.

Since the study is functionalist, it is necessary to consider some criticisms of this technique in order to substantiate its use in the study. First, it is appropriate to the manner in which research questions have been written, particularly since operationalisation and the consequent validation of a new measure call upon nomothetic techniques by and large. Although phenomenological designs could explain why variables are inter-related, the strengths of those relationships could not be measured except in the broadest terms and an attitude scaling approach is capable of assessing the strength of the relationships between variables with greater precision. While phenomenological approaches appears to be growing (Bechhofer, 1996) their research techniques do not offer a flawless epistemology and for a detailed rebuttal and critique of the opponents of positivist organisation theory see Donaldson (1985, 1996). Furthermore, by continuing the tradition of positive science in commitment research in this study, the findings should be directly comparable to previous work and will extend the body of knowledge and understanding concerning the antecedents and correlates of commitment, whereas findings from a wholly phenomenological approach would not be directly comparable with the bulk of previous research in the field.

Second, the choice of research design should be driven by the research aims. Where the aim is, for instance, to understand and describe relationships within social systems then the attraction of phenomenological designs would be compelling. In contrast, where numeric data are readily available to researchers, such as in finance or business strategy, then positivist methods have much to offer. The aims of this particular study do not align closely to either of these two extremes and, because the primary aims involve the validation of a measurement instrument and the assessment of the strength of relationships between variables, a quantitative stance is justified. Third, specific criticisms of positivist research in organisations (Behling, 1991, p.46) can be countered. He makes five criticisms, italicised below, for which counter-arguments are advanced. The charge that research findings cannot be generalised from *unique* organisations, for example, unique in terms of culture and employee profile, is met by the observation that, if consistent findings emerge across studies in diverse organisations, then those findings may be robust to contextual change. The common call for replication of studies at the end of academic papers is there for a good reason - it is a practical response to the generalisability problem.

Another criticism concerns the *unstable, temporary* nature of social knowledge against the relative permanency of natural science knowledge. The methods of positive science, it is claimed, assume a permanency in the knowledge they seek. But why so? Theory development in commitment research has mostly derived from on-going positive science research studies being used to modify earlier theories that were derived from within the same paradigm (e.g. see Becker and Billings, 1993). Assumptions about the permanency of knowledge are not artifacts of the methodology, rather they are in the mind of the interpreters of that knowledge.

Next, positivist research designs can be transparent (Behling uses the term *sensitive*), that is, the motives can be plain to see and mischievous respondents may deliberately alter their behaviour or falsify reports of their attitudes. While this is a possibility, there are ways of masking the research objectives so that sabotage is less likely. Also, if there is little reason why subjects should falsify data, careful explanation of survey objectives may heighten awareness and raise the quality of data obtained. It would also be naive to consider that

data captured through qualitative research designs are somehow immune to falsification and demonstrate high validity simply by virtue of their nature.

*Lack of realism*, or narrowness, is arguably the most difficult criticism to refute since, for practical reasons, the full range of potential interconnecting variables cannot usually be measured using detached approaches. This is countered in practice by a research community that replicates similar research designs so that aggregate findings can be compared, and the use of meta-analytic techniques (Tett, Meher and Roese, 1994) that draw together the findings of similar studies and take account of sample size in determining weighted correlations in order to show a wider picture.

Finally, *epistemological differences*. These concern the central question of whether natural science designs can yield worthwhile knowledge if the reasons why relationships exist between variables remain at the theoretical level as is often the case. Running counter to this is the point that phenomenological approaches are at their weakest when it comes to converting data into meaning brought about by problems in obtaining convincing levels of reliability. The techniques of phenomenological research are no more advanced than positivist techniques and the process of deriving meaning from qualitative data remains open to interference from the researcher, sub-consciously or consciously. Indeed, although there are many texts on the analysis of qualitative data, the processes of getting from data to conclusions are not particularly well-described (Hartley, 1995, p.220). Furthermore, issues of data validity and reliability remain, regardless of the data collection method. Thus, while a richer description of commitment might follow from a large scale interpretive design, there is no strong reason to believe that the utility of the research findings to management practitioners would be any greater. Lastly, detached approaches, by definition, have artifactual means of protecting the data from the researcher, at least when it is being collected, (Behling, 1991, p.53) whereas the potential for sub-conscious contamination of qualitative data seems much greater.

The support for positive science presented here is not intended in any way to suggest that it is superior to alternative paradigms. It is in the nature of the different philosophical approaches to research that it is possible to refute any particular research design at length but it would serve little purpose here to pursue further a debate that has no ending to it. Before closing this chapter, it is necessary to comment briefly on the nature of knowledge pursued by this thesis. The discussion above may have suggested to the reader that each of the paradigms can tease-out a certain knowledge when it has finished wrestling with a research problem. Knowledge does not yield to such straightforward means, however. Researchers contribute to knowledge by writing (crafting) accounts of their work that are accepted by their peers as making sense (Daft, 1983). Peer acceptance is the key test of knowledge generation strategies as all knowledge is thought to be socially constructed (Morgan and Smircich, 1980; Popper, 1972), that is, knowledge cannot be obtained independent of the way researchers attempt to produce it and the language they use to present it. The findings of this study offer a type of socially constructed knowledge in that the knowledge was constructed using the dialogue and conventions followed by devotees of commitment research who have followed a functionalist paradigm. This paradigm contains a long-standing knowledge dialogue on commitment that cannot help but shape the knowledge produced by this study through its effects on the way that research questions and hypotheses are phrased and on the way findings are interpreted. Recognising this facet of research life, this doctoral thesis demonstrates a thorough acquaintance with the vocabulary and syntax of the field, that is, the ability to write <u>with knowledge</u> of its concepts and practices so that the thesis serves as an intellectual contribution.

## 2.4 SUMMARY

The import of philosophical debates into management research has helped to raise awareness of epistemological and ontological issues and, in doing so, it has required researchers to understand their own position in relation to multiple paradigms and to confront the limitations of their findings and the theory that derives from them. As Giddens

(1993, p.141) noted, 'there can be no foundations of knowledge that can be unshakeably secure'. This study proceeded with a functionalist approach but which employed qualitative data in the early stages. In this regard, it reflects my position of using 'moderate objectivity' to view the world. This choice is suited to the way in which the research questions were phrased and it is for this reason, that postmodern, radical humanist and critical theory approaches were not followed. The phrasing of the questions also shows my pre-disposition towards research since a person more aligned with these very contrasting paradigms is unlikely to have phrased their research questions in the way that I have done. The study endeavours to demonstrate relevance to the academic and practitioner communities in response to widespread concerns over the relevance of much management research (ESRC, 1994; Tranfield and Starkey, 1998). A reflexive stance (Hardy and Clegg, 1997) was followed that is open and transparent about the limitations of the research design and which aims to extend the theoretical contribution beyond the narrow confines of the historic tradition in commitment research.

# CHAPTER 3

# ORGANISATIONAL COMMITMENT

## 3.1 INTRODUCTION

This chapter draws together previous research that has examined organisational commitment from organisational and occupational psychology perspectives. These perspectives assume that commitment can be measured and that it can be related to other variables, also measurable, that act as antecedents, correlates or as outcomes. Commitment can be positioned as a dependent variable or as an independent variable that acts as a predictor of, for example, intention to quit or labour turnover. However, at least seven substantial reviews of organisational commitment exist (Griffin and Bateman, 1986; Mathieu and Zajac, 1990; Meyer, 1997; Meyer and Allen, 1997; Morrow, 1993; Mowday et al., 1982; Reichers, 1985) and so a further exhaustive review of the full commitment domain is not repeated here.

The structure of a discussion about organisational commitment is confounded by the need to distinguish between the causes of commitment, the types of commitment that are presumed to exist, the nature and form that commitment takes, and the outcomes of commitment. The terminology to describe the domain is unveiled in this chapter, but, until that point, organisational commitment is used as a generic term. The chapter opens by clarifying organisational commitment among a network of related variables and the different bases for commitment are identified. Popular measures of organisational commitment are compared and findings from studies of antecedents and correlates of commitment are summarised in terms of personal, job, role and work-experience variables. The commitment of professionals is then considered and the reciprocal nature of commitment is emphasised using social exchange and reciprocity theories. Having drawn together an overview of commitment research, the chapter returns to the question of how commitment is measured. This is necessary since the accuracy and explanatory power of

commitment theory are directly related to the accuracy with which measures of commitment represent the construct that they are supposed to represent. Criticisms of current measures of commitment are developed which justify the need to revisit the measurement of organisational commitment.

## 3.2 COMMITMENT IN EARLY MANAGEMENT THOUGHT

The modern concept of commitment is present in Henri Fayol's (1949) principles of management written to capture his experience in French mining interests during the nineteenth century. He believed that the organisation's interest must always take preference over the interests of an individual or a group of employees. This does not necessarily require internalisation of goals, although it could do, but what is more important is that the organisation's interests dominate and Fayol leaves untouched the individual's reasons for sub-ordination. The second of Fayol's principles that relates to commitment concerns the importance of stable tenure of personnel which is now thought to be one of the most reliable outcomes of attitudinal commitment as conventionally defined (Mowday et al., 1982). Fayol saw tenure as providing continuity and providing the time for employees to properly understand the requirements of their jobs so that work is performed properly.

Although he also did not use a term which translates directly as commitment, the modern concept of organisational commitment can also be traced to Weber (1947) through his interest in the ways organisations (bureaucracies) are structured and the effects of bureaucratic organisation on the achievement of bureaucratic goals. Weber did, however, write about *zweckrational* action, or rational action, in relation to goals, and *wertrational*, or rational action, in relation to a value (Fores, Glover and Lawrence, 1991, p.87). This appears similar to the meaning of organisational commitment prevalent in the literature today. Weber believed that coercion was not a viable way of obtaining identification with goals and that the provision of formal rules, career structures in hierarchical bureaucracies, and fair and logical reward systems would be needed. A weakness in Weber's assumptions which came to light shortly after his death in 1920, was that they did not take sufficient

account of personal needs and commitments such as obligations and commitments to family (Lupton, 1966, p.28), which later came to be explored through the field of industrial and organisational psychology.

Merton (1940) was concerned with the internalisation of the rules of an organisation by its employees and, even though rules are not the same as goals, rules were originally devised in organisations to achieve goals and so a link to current notions of commitment can be made. Burns and Stalker (1966), in their classic study of types of work organisation, noted that the 'organic' form of organisation, which is successful at coping with changing environmental conditions, is characterised by the 'spread of commitment' to the organisation and its tasks. They also identified that employees have obligations, 'sectional commitments', to work groups and to their career, and that this 'tri-partite system of commitments' can impede the adoption of organic over 'mechanistic' forms. Likert (1961), in a consideration of high performing managers, proposed that they instil in employees, 'favourable attitudes of identification with the organisation, its objectives and a high sense of involvement in achieving them (1961, p.280) and these outcomes are very similar to the content of the Organizational Commitment Questionnaire. At about this time, commitment began to emerge as a distinctive concept that, following the traditions of industrial/organisational psychology, was seen as an independent and as a dependent (outcome) variable and the search began to isolate the effects that other variables have upon it.

Research on employee commitment gathered pace in the 1970s and, since then, researchers have enlarged the theoretical network but have not produced a proportionate increase in conceptual clarity. Morrow (1983), for instance, identified 29 related concepts and measures of commitment and five broad referents or foci of commitment. These foci are:

1. To work itself, that is, work regardless of organisation or job. Persons committed to work itself hold a strong sense of duty towards their work and place intrinsic value on work as a central life interest (Dubin, Champoux and Porter, 1975; Furnham and Koritsas, 1990; Mueller, Wallace and Price, 1992).

2. To a specific job (e.g. Lodahl and Kejner's 1965 job involvement scale).

3. To a union or staff association (Barling, Wade and Fullager, 1990; Guest and Dewe, 1991; Thacker, Fields and Barclay, 1990).

4. To a career or profession (Blau 1985, 1988, 1989).

5. To an employing organisation (Griffin and Bateman, 1986; Mowday et al., 1982; Reichers, 1985).

Using a similar conceptual framework, Randall and Cote (1991) proposed that multivariate relationships exist among organisational commitment, career salience (the importance of work and career in one's life), commitment to a work group, job involvement and the Protestant Work Ethic. The main difference to Morrow (1983) is that their model replaces commitment to a specific job with commitment to a work group. These foci for the commitment of individuals at work should not be seen as mutually exclusive as employees can have multiple commitments although one or two foci may dominate an individual's attitudes and behaviour. In addition to workplace commitment, non-work commitments are important (Cohen, 1995; Van Dyne, Graham and Dienesch, 1994). At times, perhaps for some people most of the time, the primary focus of commitment can be outside work such as to family, religion or voluntary activity.

It is still unclear whether an individual has a finite amount of commitment to share between the possible foci, or whether the aggregate level of commitment shown to multiple foci can increase. Kalleberg and Berg (1987) saw commitment as a zero-sum game such that, if commitment to one focus increases, commitment to another focus would decrease correspondingly. In support of this theory, low demands outside work, for example, lack of family commitments, have been suggested to increase the energy for investment at work (Van Dyne et al., 1994). These, they suggest, allow a more personal investment in a

'covenantal relationship' which in turn leads to higher levels of quality, quantity, attendance and other avenues of organisational obedience. In contrast, Randall (1988) found that commitment was unrelated to non-work ties and Romzek's (1989) two year longitudinal study found that organisational involvement was positively related to non-work and career satisfactions. Organisational support for non-work issues has been found to associate with commitment (Cohen, 1995) and non-work participation positively relates to commitment (Cohen and Kirchmeyer, 1995). Research findings on the foci of commitment discussed later suggest that multiple commitments are possible under certain conditions, thus negating the zero-sum viewpoint (Becker, 1992; Becker and Billings, 1993).

Each of the broad foci for commitment identified above has attracted considerable attention from researchers. Of all the commitment measures, organisational commitment is one of the most distinctive in that, as traditionally defined, it does not share concept redundancy with similar constructs, (Morrow and McElroy, 1986), and it is the central theme of this thesis. Commitment to work itself, to a specific job or to a union are not addressed directly. To minimise repetition hereafter, the use of the term 'commitment' on its own is used to represent organisational commitment unless otherwise indicated.

## 3.3 THE IMPORTANCE OF ORGANISATIONAL COMMITMENT

### 3.3.1 Commitment and Individual Performance

If there was strong empirical evidence that increasing commitment led to increased performance at work, the subject might be even more widely studied than it is. Despite the best efforts of researchers, however, the evidence for a strong positive link between commitment and performance is patchy (Cohen, 1991; DeCotiis and Summers, 1987; Mathieu and Zajac, 1990; Mowday et al., 1982; Steers, 1977). Similar findings exist for the related concept of job satisfaction which shows, at best, only a weak link with performance (Iaffaldano and Muchinsky, 1985). There is some evidence that reports

significant positive links between attitudinal (affective) commitment and performance, although correlations are often small to moderate (Baugh and Roberts, 1994; Jauch, Glueck and Osborn, 1978; Leong, Randall and Cote, 1994; Mathieu and Zajac, 1990; Mowday et al, 1982). Using their own measure of commitment, DeCotiis and Summers (1987) found no link between commitment and supervisor ratings of performance, although they did find a link between commitment and cost controls within the control of subjects. When commitment is based upon economic grounds or restricted job mobility (continuance commitment), small but significant negative correlations with performance behaviours have been observed (Meyer, Paunonen, Gallatly, Goffin and Jackson, 1989). In their study of teams at work, Cohen and Ledford (1994) found that, while team members' organisational commitment correlated highly (0.56) with members' own perceptions of their team's performance, the correlation of commitment with independent ratings of performance by managers was smaller but significant (0.26), and there was no significant correlation between organisational commitment and supervisors' ratings of team performance. This finding is consistent with Mathieu and Zajac (1990) who concluded that higher correlations between performance and commitment occur when self-ratings of performance are used rather than independent measures such as records of absence.

The relationship between commitment and performance is stronger when the financial requirements of employees are low (Brett, Cron and Slocum, 1995). Employees with private incomes or working partners had stronger commitment-performance relationships, contrary to expectations. While their paper usefully emphasises the economic role of work in affecting attitudes, it carries a weakness in that performance was measured through the sales volume achieved by salespeople and high or low sales could be influenced by variables above and beyond individual effort. With these reservations, the findings suggest that high commitment may need a stable underpinning of economic factors and perhaps even stable social conditions. Unstable economic factors may create so much uncertainty that commitment to any particular focus is weakened as the individual attempts to hedge their bets. Rather than commit highly to an organisation, and lose a degree of freedom, individuals may withhold it or distribute it across foci from which it can be reclaimed at little psychological cost.

These findings appear to contradict the general view in the human resource management literature (see later), that higher commitment should lead to higher performance and low commitment should lead to lower performance. Why so? One explanation may lie in the widespread use of the Organizational Commitment Questionnaire (which measures attitudinal commitment) to measure commitment in samples containing individuals whose commitment was based, to a large extent, on economic (continuance) reasons as well as affective reasons. Other explanations for the apparent weak link may be found in the organisations that have been studied. Organisational policies, systems and poor levels of management skills could intervene to prevent the highly committed person from converting his or her commitment into performance outcomes. A further problem confounding research on the link between commitment and performance concerns the way performance is measured. Ratings or measures of performance may contain insufficient variation to enable meaningful correlation, and, in the direct or surrogate measures of performance used by researchers, colleagues may be able to 'cover-up' the poor performance of an employee.

Katz and Kahn (1978, p.760) identified that employees must carry out innovative and co-operative tasks above and beyond their agreed job descriptions for the good of organisational effectiveness and recent work on Prosocial Behaviour (Brief and Motowidlo, 1986), which is similar in conceptualisation to Organizational Citizenship Behaviour (Bateman and Organ, 1983; Smith, Organ and Near, 1983), is helping to better understand this link. Organ (1988) proposed that citizenship behaviours result from perceived fairness in relations between employees and the organisation because, through fairness, a social rather than an economic exchange relationship develops and citizenship behaviours are one possible channel for employee reciprocation (Gouldner, 1960a). Evidence that commitment relates positively to citizenship behaviours has been provided by Konovsky and Pugh (1994) and Van Dyne et al (1994), and the links between job satisfaction and aggregate measures of citizenship behaviours have been found to be considerably stronger than between satisfaction and performance (Bateman and Organ, 1983). This could be because citizenship behaviours represent actions directly under the control of individuals rather than conventional performance measures which can be

bounded by organisational restrictions or affected by the performance of co-workers. In sum, the persistent research finding that commitment bears a small positive correlation with performance may be a result of methodological inadequacies rather than a 'true' finding. However, even if these findings prove to be valid, there are other reasons why commitment remains an important goal for managers.

### 3.3.2 Other Outcomes of Commitment

Organisational commitment is important where the attitudes and behaviours of individuals have a close link to organisational effectiveness. High commitment is thought to be an important factor in the successful conclusion of organisational change programmes (Beer, Eisenstat and Spector, 1990; Coulson-Thomas, 1992; Iverson, 1996), although a confounding factor with the notion of a positive link between commitment and successful change is that such programmes now so often occur in an environment of job insecurity which can have a negative effect on an individual's level of commitment (Hain, 1996; Swailes, 1997). Furthermore, at a time when organisations need most the high commitment of individuals to provide the levels of flexibility needed to stay competitive, commitment levels are often under pressure. In the short term, after a fall in commitment, an individual's output or performance may not fall but there remains the possibility however that the weakly committed individual will contribute in a negative way to the organisation, perhaps by not 'talking-up' important issues with others, and pro-social behaviour may also be curtailed. In the long run, key skills may be lost to an organisation through voluntary turnover which is one of the most widely reported consequences of low commitment (Mowday, et al., 1982).

The importance of the employees' skills base in underpinning competitive advantage is becoming more widely acknowledged as explanations of organisational performance move away from external environmental causes towards internal explanations that focus on core competences and capabilities (see Hamel and Prahalad, 1989, 1993). The essence of this view is that, while product designs and the physical assets of organisations may be copied

by competitors, the skills and the linkages between individuals that are sustained by their commitment are not mimicable, at least, not in the short run. Organisations that require continuous new product development, not through gradual adaptation of products but through the continuous development of new concepts, rely upon commitment as a key ingredient of successful initiatives including, quality management (Speller and Ghobadian, 1993), achievement of marketing plans (Piercey and Morgan, 1991), turnaround strategies (Ghoshal, 1994), and technology management (Cleland and Bursic, 1992; Rothwell, 1992). Thus, high commitment seems to be a critical success factor where intellectual contributions to organisations are needed, for example, from scientists and engineers, and where the behaviours of individuals are inseparable from the success of service delivery.

Support for this notion comes from work on service quality, in particular, Zeithaml, Parasuraman and Berry (1990), whose service quality model shows a series of potential gaps between the consumers' perceptions of what a service should be like and their perceptions of the delivered service. The services marketing literature advises that the role of the deliverer is fundamental to closing gaps and effecting successful transactions. As production industries reduce their share of gross domestic product in many developed countries coupled with the growth of service industries, the importance of committed individuals interacting at the point of service delivery and consumption seems crucial. This proposition has been tested but only a weak link between organisational commitment and delivery of service quality was found (Pitt, Foreman and Bromfield, 1995). Their finding can be explained, however, through their use of a unique commitment scale (given in Hunt, Wood and Chonko, 1989) which asks respondents whether they would be willing to change company for more money, more creative freedom, more status or to work with people who are more friendly. As such, their questions mostly tap commitment based on economic factors rather than commitment based upon favourable attitudes towards the organisation and the original notion that high commitment should associate with high service quality delivery remains to be challenged empirically.

A further benefit of commitment to organisations is that it is closely associated with job satisfaction (Vandenberg and Lance, 1992). Even though the causal ordering of

commitment and job satisfaction remains unclear (Bateman and Strasser, 1984; Curry, Wakefield, Price and Mueller, 1986; Vandenberg and Lance, 1992; Williams and Hazer, 1986), and while the association might not lead to higher individual performance for the organisation, higher satisfaction should improve subjective well-being at work (Cook and Wall, 1980, p.40). Not-for-profit and voluntary organisations rely heavily on the satisfaction and affective commitment of employees since there is generally less opportunity than in the profit-making sector to reward individuals with salary growth and other benefits which would stimulate commitment based upon economic factors.

In ending this section on the benefits of commitment it is worth pointing out that, in some organisations, low commitment among a majority of the workforce may not have a critical impact on performance. For example, in a mass production environment, where products, services or customers are largely influenced by processes, machinery and close supervision rather than by the actions and behaviours of committed employees, there is a basis for considering that organisations can operate successfully with low levels of employee commitment (e.g. see Guest, 1992, p.114). In these cases, high commitment from a core of managerial and/or professional employees can be sufficient to meet the expectations of key stakeholders such as investors and the management team. However, having demonstrated the distinctiveness and important of commitment, the review now looks in detail at the way it has been conceptualised in the literature.

## 3.4 FOUR BASES OF ORGANISATIONAL COMMITMENT

One of the early contributions to understanding how organisational commitment arises highlighted the importance of the way organisational members are oriented (involved) towards the organisation as a power (or control) system (Etzioni, 1961). He proposed, for 'lower participants' in organisations, three forms of involvement; moral, calculative and

alienative[1]. For our purposes, alienative involvement can be largely discounted since it is a negative orientation and arises when an individual's behaviour is severely constrained, perhaps through enforced membership of an organisation or society. Prison inmates or military conscripts are involved in their organisations but sometimes on an intensely negative basis (Etzioni, 1961, p.10). Calculative involvement is much more relevant to business organisations and represents a relationship with an organisation based on a notion of exchange in which members evaluate the trade-off between what they give to the organisation and what the organisation gives or offers in return. Calculative involvement can lead to a mild positive or negative orientation towards the organisation. Moral involvement, in contrast, signifies a highly positive orientation towards an organisation. It stems from internalisation of organisational norms and has one of two forms (Etzioni, 1961, p.11). Pure moral involvement arises when the member, acting individually, internalises organisational norms and values. Social moral involvement arises when the internalisation is as a result of pressure from other social groups such as the immediate work group, internal or external customers, suppliers or a management team. Etzioni equated moral involvement with high commitment.

Linking the three kinds of involvement with three postulated kinds of power; coercive, remunerative and normative, Etzioni advanced nine kinds of compliance relations (Etzioni, 1961, p.12). The three most commonly occurring were:

-coercive[2]-alienative;

-remunerative[3]-calculative; and,

-normative[4]-moral.

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[1]Involvement refers to the evaluative orientation of an actor towards an object, characterised in terms of intensity and direction (Etzioni 1961, p.9).

[2]Coercive power rests on the threat of application of sanctions.

Remunerative power is based on control over material resources and rewards.

[4]Normative power reflects manipulation of esteem, prestige or acceptance.

Etzioni maintained that employees would align with only one form of involvement. In contrast, Mowday et al., (1982), citing Kanter (1968), suggested three forms of commitment: continuance, cohesion, and, control, and that an employee would be subject to all three although one form may dominate. Continuance commitment comes from the accumulated sacrifices and investments made by employees who come to feel that they have too much to lose by quitting. Such feelings are centred upon economic reasons and also capture the processes by which individuals become committed and embodies the 'cost' of leaving an organisation (Becker, 1960). Thus, decisions to send children to a particular school, living near a place of work, or accruals in a pension scheme are examples of binding behaviours that lead to feelings of continuance commitment. Becker's (1960) side-bets theory underpins commitment based on behavioural acts. Cohesion commitment stems from attachment to social groups in the organisation. Control commitment arises when employees believe that the norms and values of an organisation represent a suitable model to follow to guide their own actions and work (Mowday et al., 1982, p.24).

Commitment arising from positive attitudes towards the organisation has become the dominant paradigm in the literature although one other basis for commitment exists. This is behavioural commitment which stems from the effects of past behaviours and actions that over time bind an employee to a greater or lesser extent to an organisation and/or courses of action (Salancik, 1977, 1982; Neale and Northcraft, 1991). Three characteristics can tie an individual to his or her acts and hence lead to commitment, namely, the visibility, the irrevocability and the volitionality of the behaviours. Individuals can become more or less committed by varying the three characteristics (Salancik, 1982, p.209).

In light of the aims of strategic human resource management, there are now grounds for thinking that the distinction between attitudinal and continuance bases of commitment have polarised. Management and employees are now exposed to issues such as corporate social responsibility and sustainable economic development (Azzone and Bertele, 1994; Burke and Logsdon, 1996) and this leads to greater propensity to scrutinise more closely the activities of an employer and, in doing so, evaluate their employer's social worth (Turban and Greening, 1996). Those individuals showing attitudinal (moral) commitment

might now be doing so in a more considered and evaluated manner. In contrast, concerns about declining job security and long term job prospects (e.g. Scase and Goffee, 1989) can be expected to have heightened concerns about individual and family welfare. Behaviours concerning personal finance and home ownership, for example, are more likely to have become more important and, in turn, come to have a higher weighting in job-related decisions. In organisations that are able to convince employees that they are demonstrating corporate social responsibility, the attitudinal commitment of employees will be bolstered because of greater goal congruence. Where social responsibility cannot be, or is not, demonstrated, the attitudinal commitment of employees may fall because of low goal congruence. Continuance commitment may have increased due to the heightened insecurity felt by operatives, managers and professionals caused primarily by fear of job losses or financial insecurity. It seems plausible that factors that generate attitudinal or continuance commitment now have a higher profile in everyday consciousness.

Running through the debates about attitudinal and continuance commitment is a common thread of psychological attachment to organisations. Building on notions of how individuals accept influence (Etzioni, 1961; Kelman, 1958), O'Reilly and Chatman (1986) found that psychological attachment could be predicted on three factors; compliance, identification and internalisation[5]. These patterns of commitment were differentially related to work related attitudes and behaviours such as prosocial behaviours (behaviours for the good of the organisation) or intent to stay. Extra-role activities (activities for the good of the organisation but not specified in job descriptions) were positively related to internalisation and identification-based commitment, but not to compliance-based commitment. These findings help to explain why previous studies of the antecedents and outcomes of commitment have struggled to improve conceptual clarity. Many researchers have used the Organizational Commitment Questionnaire (Mowday et al., 1982) which measures attitudinal commitment whereas other researchers have used scales that have

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[5]Compliance attitudes and behaviours stem not from shared beliefs but simply to gain rewards. Identification occurs when an individual respects values and achievements of others without accepting them as his/her own. Internalisation occurs when the values of the individual and organisation are the same (O'Reilly and Chatman, 1987, p.493).

measured continuance (calculative) commitment (e.g. Hrebiniak and Alutto, 1972). Previous researchers may not have consciously differentiated between the motives underlying the commitment of the people surveyed in their research designs. Samples examined with attitudinal scales might have been saturated with calculatively committed subjects and vice versa. This would have lead to confusion as the antecedents and outcomes of commitment have not been carefully separated from the motives underlying the commitment. However, the Identification component of the O'Reilly and Chatman measurement scales has been found to be redundant with the OCQ and the Compliance measure found to have weak reliability (Vandenberg, Self and Seo, 1994, p.139).

It is now possible to draw together a part of the commitment domain and to clarify the terminology used. This is attempted in Table 3.1 which contrasts the four bases of commitment.

**Table 3.1 Four Bases of Organisational Commitment**

| Bases of Organisational Commitment | Originators/Developers |
|---|---|
| Attitudinal or Affective Commitment<br>(Based upon acceptance of and belief in the goals of an organisation or group). | Etzioni (1961): Moral commitment<br>Kanter (1968): Cohesion commitment<br>Mowday et al. (1982)<br>O'Reilly and Chatman (1986): Internalisation |
| Continuance Commitment<br>(Based upon socio-economic factors) | Becker (1960): Side-bets theory<br>Kanter (1968): Continuance commitment<br>Meyer and Allen (1984)<br>Mowday et al. (1982)<br>O'Reilly and Chatman (186): Compliance |
| Normative Commitment<br>(Based upon feelings of loyalty and obligation) | Allen and Meyer (1990)<br>Kanter (1968): Control commitment<br>O'Reilly and Chatman (1986): Identification |
| Behavioural Commitment<br>(Based upon binding behaviours) | Salancik (1977, 1982) |

While the authors in Table 3.1 have written extensively about commitment, my interpretation of their work is that they have dwelt too much upon the factors that link employees to organisations in contrast to what that linkage leads to and achieves.

Commitment, in my view, is the outcome of these linkages, not the linkages *per se*. In order to push this argument further, the discussion now turns to see how organisational commitment is measured.

## 3.5 MEANING AND MEASUREMENT OF ORGANISATIONAL COMMITMENT

### 3.5.1 On the Meaning of Organisational Commitment

Mowday et al. (1982, p.20) drew attention to the proliferation of definitions of organisational commitment but highlighted that underlying these definitions was the notion of the individual's attachment or linkage to an organisation or social system. The research community has, by and large, adopted this view such that, for the purposes of measurement, high commitment has effectively become equated with positive feelings towards the organisation and its values, in essence, an assessment of the congruence between an individual's own values and beliefs and those of the organisation.

The focus of attitudinal commitment is assumed to be the organisation and Mowday et al. (1982) used 'attitudinal' and 'organisational' commitment interchangeably. They advocated a definition which has been particularly influential upon researchers in which organisational commitment was seen as,

> The relative strength of an individual's identification with and involvement in a particular organisation. (1982, p.27).

Three underpinning factors were proposed (p. 27):

- a strong belief in, and acceptance of, the organisation's goals and values;
- a willingness to exert considerable effort on behalf of the organisation; and,

- a strong desire to retain membership in the organisation.

Although still commonly used in the USA and with increasing application to non-English speaking countries (see White, Parks and Gallagher, 1995) this definition has been criticised for not carefully separating the motives for commitment from their effects. In particular, a desire to remain with an organisation can be seen as a consequence of commitment rather than as part of its definition (Peccei and Guest, 1993, p.7; Reichers, 1985, p.469). Indeed, many studies have shown strong correlations between this definition of commitment as operationalised through the Organizational Commitment Questionnaire and labour turnover (Mowday et al., 1982; Tett and Meyer, 1993). This persistent finding may be a product of the techniques used to measure commitment rather than a true characteristic of the commitment-turnover relationship.

Linked to this issue is the distinction between commitment and loyalty. The two constructs are distinct even though they are traditionally seen as being closely related (Mueller et al., 1992). They saw loyalty as 'an affective response to and identification with an organisation based on a sense of duty and responsibility' (1992, p.213). Using Fielder's (1992) review of the meaning of loyalty, identification stems from obligations arising from possession of a role and from membership of a group and so loyalty can be seen as intervening between pressures on an individual to leave an organisation and the decision to stay or leave. With this interpretation, loyalty is different to intent to stay. While the two concepts have been combined in the widely used Organizational Commitment Questionnaire, Mueller et al (1992) found that loyalty and intent to stay were conceptually and empirically distinct and suggested that the two concepts should be separated in further studies. Intent to stay can be viewed as a more unemotional variable, that is, with little if any affective attachment (Halaby, 1986; Halaby and Weakliem, 1989). The picture emerging from the literature is that the reasons for wanting to stay with an organisation determine whether an employee is loyal or not. If an employee wants to stay because he or she is seen to identify with goals, then he or she is seen as loyal. If the reasons are economic or convenience, then the person is perceived as being less loyal. This opens-up an intriguing issue as it seems that assessment of loyalty is framed by the beholder's perception of the reasons for staying.

The notion of the committed employee having a strong desire to remain with an organisation is arguably less relevant today than in the early 1970s when the influential definition embodied in the OCQ gained acceptance. In the post-war years unemployment was low, by today's standards, and the notion of employment to pensionable age with one organisation was commonplace. Indeed the notion of a career with one or few large organisations was commonly held (Whyte, 1956) and was part of the assumed background to early work in organisational studies. Given the labour market dynamics of the 1980s and 1990s, the idea of committed employees necessarily having a desire for tenure can be challenged. This can be reconciled with commitment theory if we begin to move away from the widely accepted definition embodied in the OCQ (and the Affective Commitment Scale, see below) that commitment incorporates a desire to remain. Employees presumably seek job security, but with job cuts being used as a major strategy to stay competitive, and the need for flexible, adaptive, organisations, do employers want turnover rather than tenure from their employees? To what extent can employees now anticipate long tenure? Despite the view that attitudinal commitment equates to organisational commitment (Mowday et al., 1982; Porter et al., 1974), only the component concerning a belief in goals is expressed purely attitudinally. The tenurial and effort components assess attitudes towards behaviours (behavioural intent) and the relevance of the tenurial component can also be questioned in view of the contemporary labour market dynamics discussed in the next chapter.

Also implicit in the literature is a notion of 'real' commitment being based on individuals internalising the norms and values of the organisation rather than being based upon economic exchange or expectancy notions. Farrell and Rusbult (1981) defined organisational commitment as the likelihood that individuals remain with the job and feel attached to it whether or not it is satisfying. (How long they expected employees to stay in dissatisfying jobs is not clear). Scholl (1981) advocated that commitment should be separated from the basic expectancy theory notion that individuals will do things that they perceive will lead to valued outcomes.

> If commitment is viewed as a force distinct from expectancy, it can be used to explain instances of behavioural direction being maintained despite lowered expectancy (Scholl, 1981, p.597).

According to Scholl, an individual shows commitment when he or she maintains a behaviour after motivating forces for that behaviour based on calculation or exchange have been nullified. Weiner (1982) conceptualised commitment on the premise that work behaviour is determined not only by calculative-instrumental processes, but also by normative pressures such as personal moral standards.

> Real commitment is defined as a totality of internalised normative pressures to act in a way that meets organisational interests. (Weiner, 1982, p.418).

In a high pressure working environment where long tenure may not be possible in an era of retrenchment, rationalisation and redundancy, the only component remaining from commitment's classic definition within the will of employees is identification with goals and values and the giving of effort. This argument is similar to DeCotiis and Summers (1987, p.448) who saw commitment as

> A two dimensional construct centred on organisational goal and value internalisation, and role involvement in terms of those goals and values. Hence, organizational commitment can be defined as the extent to which an individual accepts and internalizes the goals and values of an organization and views his or her organizational role in terms of its contribution to those goals and values, apart from any personal instrumentalities that may attend his or her contribution.

Oliver's (1990) findings also support the idea of commitment being towards actions rather than objects. It is clear, therefore, that no single definition of commitment has been universally adopted and this is further illustrated by a consideration of the way commitment is measured.

### 3.5.2 Scales for Measuring Organisational Commitment

The conflation of attitudes, behaviours and binding economic actions in the measurement of commitment prompted Meyer and Allen (1984) to develop two new scales that, in their view, more carefully distinguished among them. They introduced the terms affective and continuance commitment to describe attitudinal commitment and commitment based upon economic factors respectively. Meyer and Allen (1991, 1997) later developed a three-component model of commitment in an attempt to draw together three processes by which a person can show commitment to an organisation and which added normative commitment to affective and continuance commitment. Normative commitment derives from the individual's feelings of obligations to stay brought about by events before or after joining the organisation and the three types of commitment were defined as follows (Meyer and Allen, 1991, p.67).

- Affective commitment refers to the employee's emotional attachment to, identification with, and involvement in the organisation.
- Continuance commitment refers to an awareness of the costs associated with leaving the organisation.
- Normative commitment reflects a feeling of obligation towards continued employment.

Support for Meyer and Allen's (1984) scales has come from McGee and Ford (1987) and Meyer, Allen and Gallatly (1990). In particular, affective commitment was found to be distinct and reliable whereas two sub-scales were proposed within continuance commitment to measure continuance based upon low employment alternatives and continuance based on high previous personal sacrifices. Additional support for this model comes from Dunham, Grube and Casteneda (1994), Hackett, Bycio and Hausdorf (1994). Both of these studies provided support for McGee and Ford's (1987) notion of two sub-scales for continuance commitment (Dunham et al., 1994, p.376; Hackett et al., 1994, p.21). Meyer and Allen (1997, p.13) advise that the three components should not be seen as mutually exclusive types of commitment, but as components that can variously co-exist, That is, a person's commitment can be based upon one, two or all three reasons.

DeCotiis and Summers (1987) developed an attitudinal model of commitment which measured the employee's goal and role congruence rather than desire for tenure and effort expended. Their six item scale does not appear to have been used by many other researchers (for an exception see Jans, 1989) who appear to have used either the OCQ or scales developed by Meyer and Allen and for a useful summary of commitment scales in diverse applications see Randall (1993). The driving force behind commitment measurement has been by North American researchers although a nine-item British Organizational Commitment Scale, (BOCS), was developed by Cook and Wall (1980) with particular reference to manual workers. Their definition of commitment was

> The concept of organizational commitment refers to a person's affective reactions to his employing organisation. It is concerned with feelings of attachment to the goals and values of the organisation, one's role in relation to this, and attachment to the organisation for its own sake rather than for strictly instrumental values. (Cook and Wall, 1980, p.40).

The three BOCS subscales are modelled upon the OCQ and each contains three items to measure identification with the organisation, involvement measured through attitudes to work rather than behaviour, and loyalty, which is equated with desire to stay. This scale has been used in the UK (e.g. Fletcher and Williams, 1996) and has been extensively reviewed by Peccei and Guest (1993). The main findings relevant here are:

- there is a gap between Cook and Wall's definition of commitment and the way it was operationalised, in particular goal and value internalisation (1993, p.6);

- 'both the BOCS and the OCQ can be criticised for failing to differentiate sufficiently between the phenomenon of commitment itself as a psychological state and some of its presumed consequences' (1993, p.7); and,

- 'strong empirical support was found for the existence of three related but distinct factors...identification, involvement and loyalty' (1993, p.30).

Since the measurement of organisational commitment is a central theme of this thesis, the scale items contained in the Organizational Commitment Questionnaire, the Affective Commitment Scale, the Continuance Commitment Scale and the British Organizational Commitment Scale are shown in Tables 3.2 to 3.5. The content of these scales is revisited at the end of this chapter.

**Table 3.2 Item content of the Organizational Commitment Questionnaire (Mowday et al., 1982).**

| |
|---|
| 1. I am willing to put in a great deal of effort beyond that normally expected in order to help this organisation be successful. |
| 2. I talk up this organization to my friends as a great organization to work for. |
| 3. I feel very little loyalty to this organisation (Reversed). |
| 4. I would accept almost any type of job assignment in order to keep working for this organisation. |
| 5. I find that my values and the organisation's are very similar. |
| 6. I am proud to tell others that I am part of this organization. |
| 7. I could just as well be working for a different organisation as long as the type of work were similar (Reversed). |
| 8. This organisation really inspires the very best in me in the way of job performance. |
| 9. It would take very little change in my present circumstances to cause me to leave this organisation (Reversed). |
| 10. I am extremely glad that I chose this organisation to work for over others I was considering at the time. |
| 11. There's not too much to be gained by sticking with this organisation indefinitely (Reversed). |
| 12. Often, I find it difficult to agree with this organisation's policies on important matters relating to its employees (Reversed). |
| 13. I really care about the fate of this organisation. |
| 14. For me this is the best of all possible organisations for which to work. |
| 15. Deciding to work for this organisation was a definite mistake on my part (Reversed). |

The 9-item version is obtained by omitting the 6 reverse-scored items. Note that only item 2 is assessing a clear behaviour. All other items capture a belief, attitude or attitude towards a behaviour.

**Table 3.3 Item Content of the Continuance Commitment Scale (Meyer and Allen, 1984)**

1 Right now, staying with my organisation is a matter of necessity as much as desire. (LA)

2. One of the major reasons I continue to work for this organisation is that leaving would require considerable personal sacrifice - another organisation may not match the overall benefits I have. (HS)

3. I feel I have too few options to consider leaving this organisation. (LA)

4. One of the few negative consequences of leaving this organisation would be the scarcity of available alternatives. (LA)

5. It would be very hard for me to leave this organisation right now, even if I wanted to. (HS)

6. To much in my life would be disrupted if I decided to leave this organisation now. (HS)

LA = Low alternatives, HS=High sacrifice

**Table 3.4 Item Content of the Affective Commitment Scale (Meyer and Allen, 1984)**

1. I would be very happy to spend the rest of my career in this organization.

2. I enjoy discussing my organization with people outside it.

3. I really feel as if this organization's problems are my own.

4. I think I could easily become attached to another organization as I am to this one. (Reversed).

5. I do not feel like 'part of the family' at my organization. (Reversed)

6. I do not feel 'emotionally attached' to this organization (Reversed).

7. This organization has a great deal of personal meaning for me.

8. I do not feel a strong sense of belonging to my organization. (Reversed)

**Table 3.5 Item content of the British Organizational Commitment Scale (Cook and Wall, 1980)**

| |
|---|
| 1. I am quite proud to be able to tell people that I work for [Org] |
| 2. I feel myself to be part of [Org] |
| 3. I would not recommend a close friend to join [Org] (Reversed) |
| 4. To know that my own work had made a contribution to the good of the organization would please me. |
| 5. In my work I like to feel that I am making some effort not just for myself but for the organization as well. |
| 6. I'm not willing to put myself out just to help the organization (Reversed). |
| 7. Even if [Org] were not doing too well financially, I would be reluctant to change to another employer. |
| 8. The offer of a bit more money with another employer would not seriously make me think of changing my job. |
| 9 I sometimes feel like leaving this employment for good (Reversed). |
| Items 1-3 tap Identification, 4-6 tap Involvement, 7-9 Loyalty. |

### 3.5.3 Summary

Developments in the measurement of commitment in the 1980s were directed at refining the measurement of attitudinal and continuance reasons for commitment. The refinements however have been delicate rather than substantive. Constructs such as organisational commitment are not immune to changes in their meaning and form and, given that organisational responses to dynamic business environments call for change, there are grounds for considering that established measures of organisational commitment have not kept pace with developments in human resource management practices and this notion is further developed in Chapter 4. There is also an issue concerning how far popular scales that purport to measure commitment actually do so and whether they measure the reasons why people are committed. Further reconceptualisation of commitment is required in order

to determine how well the classic measures such as the Organizational Commitment Questionnaire and the Affective Commitment Scale capture current manifestations of commitment in the workplace and this issue is returned to in section 3.10.

## 3.6 FOCI OF COMMITMENT

In addition to debates about attitudinal and behavioural bases of commitment and problems of measurement, a major problem troubling some authors has been the notion of the 'organisation' in organisational commitment as a homogenous, uniform entity (Coopey and Hartley, 1991; Reichers, 1985, 1986). This oversimplified representation of organisations had been recognised previously (see Burns, 1966) but until recently had not concerned many commitment researchers. Using reference group theory, Reichers advocated that committed employees are likely to be committed to multiple sets of goals and values such as colleagues, customers, sub-ordinates and other groups making up the organisation (Reichers, 1985, p.472). This view was consistent with the view that organisations operate as coalitions of interest groups (Cyert and March, 1963; Katz and Kahn, 1978, p.240, p.481). Goals and values in one part of an organisation may be different to those in another and thus the organisation can be viewed as a sum of parts with employees committed to some parts and not to others. A further distinction needs to be made between commitment to the organisation itself and commitment to goals and values. According to Gouldner, (1960b, p.486)

> Commitment to the specific values of an organisation is distinct from commitment to the organisation as a whole, and further that commitment to one organisational value is sometimes independent of another.

The relationships among the foci of commitment have recently been illuminated by Becker (1992) and Becker and Billings (1993) who found four patterns of commitment.

1. Individuals committed to the supervisor or work group (the locally committed).

2. Individuals committed to top management and the organisation itself (the globally committed).

3. Individuals committed to both local and global foci (the committed).

4. Individuals committed to neither global nor local foci.

These findings are consistent with theoretical studies of employee loyalty in which loyalty can be given to particular groups but not others (Fielder, 1992). Reworking Becker's (1992) data, Hunt and Morgan (1994) examined whether organisational commitment should be seen as one of many foci for commitment or whether it is a mediating construct regarding commitment to local foci. Their findings suggest that commitment to top management and to supervisor contribute to global organisational commitment. No local foci were found to conflict with or diminish global organisational commitment and commitment to work group was independent of global organisational commitment. Another way of viewing Hunt and Morgan's findings is to see top management as the organisation since it is their values and goals that are cascaded in the form of plans and objectives through the supervisor as an agent of the top management and in-turn the organisation. In this regard their findings are unsurprising yet they open up a fresh possibility that, in contemporary organisations, organisational commitment is simply a commitment to whatever top management is committed to.

These ideas suggest that if a profile of an individual's commitment to multiple foci at work at a point in time could be drawn, then this profile can change if some aspect of the job or the organisation changes. A new venture or mission for the organisation, a new team leader or a change of work group might cause a change in the absolute amount of organisational commitment shown by an employee. This view of the heterogenous rather than homogenous organisation is bolstered by research showing that organisations can exist as a set of sub-cultures in different departments or locations rather than a single homogenous culture (Gregory, 1983).

Another unstated but implied assumption of early commitment theorists was a notion that the organisation was 'right' and that employees not upholding organisational views were uncommitted. Furthermore, it was implied that the uncommitted employee should, through the overcoming of negative influences, become committed for the organisation's benefit. This notion overlooks the value of pluralism (Fox, 1973), that is, accepting a range of sometimes opposing views, all or most of which could be taken into account in decision making. This links to the earlier point about employees having clearer ideas about their own values and of what is 'right'. Employees who appear uncommitted may simply be committed to other things that they see as more valuable or more morally acceptable. The commitment shown by the organisation to profit making or market development, for example, should not necessarily be seen as the only standard that all those in the organisation should subscribe to. Management practitioners may choose to disagree on this point, however.

## 3.7 ANTECEDENTS AND CORRELATES OF ORGANISATIONAL COMMITMENT

### 3.7.1 Antecedents and Correlates

Many studies have examined the factors that could be expected to be antecedent to organisational commitment and these are summarised elsewhere (Meyer, 1997; Meyer and Allen, 1997; Mowday et al., 1982). Morrow (1983) identified a 'laundry list' of variables and for a comprehensive review the reader is referred to a meta-analysis by Mathieu and Zajac (1990). For illustration, Tables 3.6 to 3.9 show zero-order correlations obtained in a sample of studies. Among the personal characteristics shown in Table 3.6, age and organisational tenure tend to have a low positive association with commitment (typically measured with the Organizational Commitment Questionnaire or the Affective Commitment Scale). Age and tenure may have a non-linear association with commitment, however, as Cohen (1993) found that the strength of the correlations was stronger for younger employees and for those with high tenure. Level of education typically has a non-significant or low negative association. Sex appears to have no influence on organisational

commitment (Aven, Parker and McEvoy, 1993; Bruning and Snyder, 1983). Perceived personal competence shows a strong correlation (Allen and Meyer, 1990).

Given the largely universal application of commitment scales across diverse samples, an important question is whether the antecedents and correlates of commitment differ between occupational groups, in particular between professionals and nonprofessionals. Howell and Dorfman (1986), using the OCQ, found that role clarification was an important predictor of commitment for both groups, whereas supportive leadership correlated positively for professionals (r=0.23) but not significantly for non-professionals (r=0.11). Enforcement of organisational rules and procedures correlated positively with commitment for non-professionals but negatively for professionals. With professionals, intrinsically satisfying work tasks and the importance placed on organisational rewards were strong substitutes for support from leaders. Relationships between antecedents and commitment appear to be moderated by occupation, with a broad distinction existing between blue-collar, white-collar non-professionals and professional groups (Cohen, 1992, Cohen and Gattiker, 1994). For instance, role ambiguity was a weaker antecedent of commitment for professional groups than for non-professionals suggesting that some aspect of professional work intercedes to depress the influence of the negative role state. Table 3.7 shows role-related antecedents such as role clarity, role ambiguity and task significance. The picture to emerge from the table is that phenomena that a person would normally be expected to avoid, such as, role conflict, role ambiguity and role overload, associate negatively with commitment. Likewise, phenomena that a person would normally be expected to seek, such as role clarity, satisfaction with co-workers and meaningful tasks, all show positive associations with commitment.

Alongside antecedents, researchers have explored a range of 'correlates' of organisational commitment such as job security, job satisfaction, and commitment to other foci such as a union or an occupation. The high correlations that occur between organisational commitment and its correlates can give rise to fears over concept redundancy but organisational commitment emerges from these studies as a distinctive construct (Brooke, Russell and Price, 1983; Mathieu and Farr, 1991; Morrow, 1983, 1993). Among the job

and organisational correlates shown in Tables 3.8 and 3.9, there are again negative correlations with undesirable states, such as job insecurity and powerlessness, and positive correlations with desirable states, such as job satisfaction and support from the organisation for the individual. Whereas the causal relationship between personal variables, such as age, and commitment is in no doubt, there is much less confidence about the causal pathway that operates among role, job, organisational and work related variables. This is a consequence of the research designs typically employed and the practical obstacles to overcoming them that face researchers, such as, the construction of longitudinal studies and the identification of appropriate time lags between the measurement of variables.

When commitment is positioned as a dependent variable it is clear that both dispositional and situational factors are both capable of explaining variance. The proportion of commitment explained varies with sample characteristics but it would appear that situational factors generally have more influence than personal characteristics. If we accept that the relationship between individuals and their environments is not a static one, then it is logical that personal and situational factors can and will interact to influence other attitudes and behaviours. It is surprising therefore, that although the range of situational factors that has been studied seems extensive, relatively little research has been conducted to see how much variance in commitment can be explained by interactions, that is, the combination of situational and dispositional factors with each other. Noteworthy among the studies (see Table 3.8) are the generally large correlations observed between commitment and aspects of organisational support which might derive from the organisation's commitment to providing job security or providing training for future jobs. This finding is developed further in the research design for this thesis in the context of studying interaction effects upon commitment. In sum, there is strong evidence in the various studies and meta-analyses that occupational group has an important influence on relationships among variables suggesting, for studies that question the meaning of commitment, there are major implications for choice of sample.

## Table 3.6 Personal Antecedents of Organisational Commitment

| Antecedent and correlation | Sample | Measure | Source |
|---|---|---|---|
| Education, -0.15<br>Personal competence 0.68<br>Education, -0.16 | 250 mixed employees | ACS | Allen & Meyer, (1990) |
| Tenure, 0.18 | 119 nurses | 9 OCQ | Blau (1985) |
| Education, -0.17<br>Tenure, 0.27 | 290 hospital employees | 9 OCQ | Gregerson (1993) |
| Age, 0.33<br>Education, -0.19 | 319 health and social workers | 15 OCQ | Glisson and Durick (1988) |
| Age, 0.12<br>Education, -0.17<br>Tenure, 0.05<br><br>Age, 0.22<br>Education, 0.03<br>Tenure, 0.16 | 161 non-professionals<br><br>450 professionals | 15 OCQ | Mathieu and Hamel (1989) |
| Age, 0.20<br>Education, -.09<br>Tenure, 0.17<br>Personal competence, 0.63<br>Protestant work ethic, 0.29 | Meta analysis | Various | Mathieu and Zajac (1990) |
| Age, 0.31<br>Education, -0.26<br>Sense of competence, 0.56 | 506 health care workers | 15 OCQ | Morris and Sherman (1981) |
| Age, 0.25<br>Education, -0.17<br>Position tenure, 0.15<br>Organisation tenure 0.22 | 728 university employees | 15 OCQ | Morrow and Wirth (1989) |
| Age, 0.14 | 334 mixed employees | Etzioni (1975) | Romzek (1989) |
| Age, 0.29 | 521 nurses | Alutto et al (1973) | Trombetta and Rogers (1988) |

[In Tables 3.6 to 3.9, 15 OCQ and 9 OCQ refer to the 15 and 9 item versions of the Organizational Commitment Questionnaire. ACS refers to the Affective Commitment Scale].

## Table 3.7 Role Related Correlates of Organisational Commitment

| Correlate and correlation | Sample | Measure | Source |
|---|---|---|---|
| Role clarity, 0.53<br>Goal clarity, 0.35<br>Goal difficulty, 0.56<br>Peer cohesion, 0.51<br><br>Goal difficulty, -0.17 | 250 mixed employees | ACS<br><br>CCS | Allen and Meyer (1990) |
| Role ambiguity, -0.32 | 119 nurses | 9 OCQ | Blau (1985) |
| Supervisor satisfaction, 0.43<br>Co-worker satisfaction, 0.35 | 100 college faculty | 9 OCQ | Barling et al (1990) |
| Role conflict, -0.43<br>Role ambiguity, -0.57<br>Task significance, 0.33<br>Task identity, 0.29 | 319 health and social workers | 15 OCQ | Glisson and Durick (1988) |
| Role strain, -0.17<br><br>Role strain, -0.09 | 161 non professionals<br><br>450 professionals | 15 OCQ | Mathieu and Hamel (1989) |
| Role conflict, -0.27<br>Role ambiguity, -0.22<br>Role overload, -0.21 | meta analysis | various | Mathieu and Zajac (1990) |
| Role conflict, -0.40<br>Role ambiguity, -0.36 | 506 health care workers | 15 OCQ | Morris and Sherman (1981) |
| Role ambiguity, -0.41<br>Role conflict, -0.19<br><br>Role ambiguity, -0.41<br>Role conflict, -0.28 | 168 non professionals<br><br>88 professionals | 15 OCQ | Podsakoff, Williams and Todor (1986) |

## Table 3.8 Job and Organisational Correlates of Organisational Commitment

| Correlate and correlation | Sample | Measure | Source |
|---|---|---|---|
| Management receptiveness, 0.48<br>Organisational dependability, 0.61 | 250 mixed employees | ACS | Allen and Meyer (1990) |
| Likelihood of job change, -0.22<br>Powerlessness, -0.40<br>Job insecurity, -0.47 | 183 mixed employees | 9 OCQ | Ashford, Lee and Bobko (1989) |
| Pay satisfaction, 0.22 | 100 college faculty | 9 OCQ | Barling et al (1990) |
| Job satisfaction, 0.55<br>Perceived alternatives, -0.58 | 129 nursing employees | 9 OCQ | Bateman and Strasser (1984) |
| Job involvement, 0.18<br>Job withdrawal cognitions, -0.16 | 119 nurses | 9 OCQ | Blau (1985) |
| Perceived organisational support, 0.64 | 422 hourly paid and 109 managerial employees | ACS | Eisenberger et al (1990) |
| Company commitment to job security, 0.53<br>Training for future jobs, 0.61<br>Internal job mobility, 0.61 | 496 manufacturing employees | 9 OCQ | Gaertner and Nollen (1989) |
| Organisational age, 0.42<br>Leadership, 0.51 | 319 health and social workers | 15 OCQ | Glisson and Durick (1988) |
| Unpleasant supervisor, -0.60<br>Unpleasant co-worker, -0.28 | 52 nurses | 9 OCQ | Leiter and Maslach (1988) |
| Participative leadership, 0.39<br>Leader communication, 0.45<br>Leader consideration, 0.34<br>Job scope, 0.50<br>Job challenge, 0.35 | Meta analysis | various | Mathieu and Zajac (1990) |

**Table 3.8 (continued) Job and Organisational Correlates of Organisational Commitment**

| Correlate and correlation | Sample | Measure | Source |
|---|---|---|---|
| Job satisfaction, 0.63<br>Organisational formalisation, 0.13<br>Organisational decentralisation, 0.35 | 450 prof's | 15 OCQ | Mathieu and Hamel (1989) |
| Decentralisation, 0.33<br>Functional dependence, 0.25<br>Formalisation, 0.18 | 262 university employees | 15 OCQ | Morris and Steers (1980) |
| Job satisfaction, 0.53<br>Job breadth, 0.30 | | ACS | Morrison (1994) |
| Organisational formalisation, 0.61<br>Alienation, -0.55<br><br>Formalisation, 0.35<br>Alienation, -0.39 | 88 prof's<br><br>168 non-prof's | 15 OCQ | Podsakoff et al (1986) |
| Procedural justice, 0.53<br>Distributive justice, 0.49 | 675 US Bank workers | BOCS | McFarlin and Sweeney (1992) |
| Job security, 0.18 | 214 UK Eng and science graduates | 15 OCQ | Morris et al (1993) |

**Table 3.9 Work Experience Correlates of Organisational Commitment**

| Correlate and correlation | Sample | Measure | Source |
|---|---|---|---|
| Job challenge, 0.63<br>Equitable treatment, 0.55<br>Participation in decisions, 0.51<br>Work feedback, 0.36 | 250 mixed employees | ACS | Allen and Meyer (1990) |
| Communication flow, 0.39<br>Promotion satisfaction, 0.32<br>Work satisfaction, 0.27 | 100 college faculty | 9 OCQ | Barling et al (1990) |
| co-worker support, 0.31<br>supervisor support, 0.42<br>perception of training adequacy, 0.38 | 55 Australian engineers | 9 OCQ | Benson (1998) |
| Information adequacy, 0.29 | | Alutto et al (1973) | Trombetta and Rogers (1988) |
| Fairness in work assignment, 0.36 | 287 mixed US | Hrebiniak and Alutto | Witt (1993) |

### 3.7.2 Summary of Concept Development

Individuals can be committed to different foci to different extents. One focus is the organisation which is best seen as a collection of constituencies with employees variously committed to its constituent parts. The importance of commitment to various foci varies between organisations. Commitment has been viewed as having an affective, normative, continuance or behavioural basis stemming from attitudinal, obligatory, socio-economic and behavioural ties respectively. An individual's commitment can migrate between these bases over time in response to events at work and in non-work events. Committing attitudes may lead to behaviours that in-turn reinforce attitudes in a self-reinforcing cycle. High commitment from employees is assumed to be good for organisations, supporting a platform of strategies for organisational survival. Before the commitment research domain was fully understood however, organisations reacted to turbulent business environments and in doing so altered the psychological contract within which commitment had previously been studied. Much of the early work on commitment has been overtaken by concerns about how to create and maintain high commitment in the 'new order' for employee relations and this argument is developed in chapter 4. Having reviewed organisational commitment in general terms so far, the following section looks specifically at the literature dealing with commitment and organisational professionals

## 3.8 COMMITMENT AND PROFESSIONALS

### 3.8.1 Professional Commitment

Commitment to a profession (professional commitment) has been accepted as one of the several dimensions of the professional ideology (professionalism) held by an individual (Bartol, 1979, p.817; Snizek, 1972, p.110). Early studies of the work commitment of professionals held that commitment to profession and organisation were incompatible, that the values of the organisation and profession would be in conflict (Friedlander, 1971; Gouldner, 1957, 1958; Pelz and Andrews, 1966). Gouldner's (1957) Local-Cosmopolitan

distinction held that a professional would either accept the organisation and act as a local or maintain external professional allegiance and act as a cosmopolitan. Cosmopolitans would be high on professional commitment and low on organisational commitment, locals would be high on organisational rather than professional commitment. Other researchers however argued that professional and organisational commitment were independent, that is, both commitments could be high, both low, or high on one or the other. (Aranya and Ferris, 1983; Bartol, 1979; Bennis, Berkowitz, Afinito and Malone, 1958; Berger and Grimes, 1973; Flango and Brumbaugh, 1974). Thornton's (1970) study of teachers found that organisational and professional commitment could co-exist in certain conditions, notably, when professionals perceive the organisation as reaffirming and exemplifying certain characteristics of professionalism such as; determination of performance on a professional basis, when authority over others is based on greater or equal expertise and standing, and, when supervision of professionals is based on greater or equal professional expertise or standing. This finding supports Ritzer's (1973, p.69) belief that organisational structure must support professional behaviours to maximise the congruence between individual and organisational professionalism. Thornton's study mirrors other findings that commitment to a union and to an organisation can occur together when the labour-management climate is co-operative (Angle and Perry, 1986). Sturdevant-Reed, Young and McHugh (1994) also found a strong correlation between organisational and union commitment in four countries with a mean corrected correlation of r=0.42. This psychology is further supported in a study of ethnic minority managers who reported higher satisfaction and commitment when they perceived their organisation supported minority interests (Burke, 1991). Thus the view that commitment is a zero-sum game is contradicted by research. Other findings supporting the notion that the two commitments are moderated by organisational variables include Bartol (1979), Welsch and LaVan (1981).

Thornton's (1970) findings parallel the motivational studies of Herzberg, Mausner and Snyderman (1959). In particular, when supervision and authority over professionals were based on higher expertise there was no correlation with professional-organisational commitment, but supervision and authority not based on higher expertise lead to negative

correlations with professional-organisational commitment. Professionalism by the organisation does not lead to higher commitment, but the absence of professionalism by the organisation seems to lead to low commitment. Mowday et al (1982, p.51) observed that professionals could become more committed to their profession than to their organisation and that this would explain the negative relationship often found between the amount of education that an employee receives and the amount of organisational commitment shown (see Table 3.6). Strong support for this notion comes from Weisberg and Kirschenbaum (1991) who found that higher educational level was associated with higher intentions to leave an organisation. This finding is particularly important since it was derived from a national (Israeli) sample of working males and not from a single site American study as is often the case.

### 3.8.2 Professional and Organisational Commitment

Bedian, Kemery and Pizollatto (1991) examined how the career commitment of nurses was influenced by perceived career growth opportunities. When career commitment was high, turnover intentions reduced as perceptions of career growth opportunities increased. When career commitment was low, the opposite was found, turnover intentions increased as perceptions of career growth opportunities increased. This finding fits with the most reproducible result from organisational commitment research - that organisational commitment is negatively associated with labour turnover. That persons with high career commitment would want to enhance their career seems self-evident. Conventional commitment theory would hold that an individual who enhanced his or her career by moving between organisations shows low organisational commitment. Yet an individual who remains with an organisation to further a career, perhaps by increasing professional knowledge or experience, would be seen as more organisationally committed than career committed. This finding (Bedian et al., 1991) provides further support for the view that commitment in today's organisation should not be associated with notions of tenure. As noted earlier, long tenure is no longer expected or in many cases offered - witness the growth in fixed term contracts in Higher Education and Local Government.

To examine whether professional and organisational involvement were self-correlating (early studies assumed they were not) Schein, McKelvey, Peters and Thomas (1965), used two scales on which individuals were measured; technical-managerial and institutional-noninstitutional. If the two commitments were highly associated then it would be of limited use to study them separately. No correlation between the two was found, however, indicating that technically-oriented individuals could be institutionally-oriented and managerially-oriented individuals can be non-institutionally oriented (Schein et al, 1965, p.343). Thus, it is justifiable to separate organisational and professional commitment in correlational studies.

However, method bias has influenced the examination of the two commitment foci in some studies. The strong positive correlation (r=0.44) between professional and organisational commitment found by Aranya, Pollock and Amernic (1981) could be explained by their use of very similar instruments to measure the two commitments as, in this case, 'profession' was substituted for 'organization' in the wording of the items taken from the OCQ. Virtually identical mean scores in that study of 5.46 and 5.48 for professional and organisational commitments also indicate that a high amount of overlap had occurred. Using the same method, Aranya and Ferris (1983) again found strong positive correlations between organisational and occupational commitment. Their sample contained a seemingly high proportion of partners (in accounting practices) and sole-practitioners who would be expected to show high commitment to their organisations. Other studies support a positive association between organisational and occupational commitment (Aranya and Ferris, 1983; Aranya and Jacobsen, 1975).

The approach of substituting 'profession' for 'organization' in the OCQ has been used elsewhere on the grounds that, despite the similarities in measures, professional and organisational commitments were distinguishable (Gunz and Gunz, 1994; Morrow and Goetz, 1988; Morrow and Wirth, 1989). Using the modified OCQ, Vandenberg and Scarpello (1994) in a time-lagged study concluded that occupational commitment was antecedent to organisational commitment. Interestingly, Morrow and Wirth (1989) found that professional commitment and job involvement (measured by Lodahl and Kejner's

1965 scale) were not meaningfully distinct. Whether this reflects deficiencies in one or both of the scales could not be determined. In contrast, using different measures of career commitment (Blau, 1988), and job involvement (Kanungo, 1982), Blau (1989) found that the two measures were distinct. Blau's work on career commitment and his development of a seemingly valid measure have advanced the study of this aspect of work commitment considerably.

## 3.9 COMMITMENT, RECIPROCITY AND ORGANISATION

### 3.9.1 Organisational Influences on Commitment

Researchers have examined personal, role and job-related variables for their influence on commitment and in doing so, the organisation has been viewed as a constant. In one organisation over a short time this seems reasonable, but, in studies involving several organisations, or in a longitudinal study, the organisation cannot be assumed to remain constant. Apart from differences in size, structure and served markets, organisational cultures will vary. Given that culture reflects core values and assumptions it will enshrine the foci that are most adored and culture will influence the extent to which a given variable would affect a particular individual (Bourantis and Papalexandris, 1992).

Among organisational variables examined (Table 3.8), moderate to strong correlations have been observed with organisational formalisation (Mathieu and Hamel, 1989; Morris and Steers, 1980; Podsakoff et al, 1986), decentralisation (Mathieu and Hamel, 1989; Morris and Steers, 1980), leadership variables (Glisson and Durick, 1988; Mathieu and Zajac, 1990), well-defined value systems and well-articulated reward systems (Caldwell, Chatman and O'Reilly, 1990). It should be recognised, however, that individuals are likely to be affected by different variables to different extent and at different times depending upon the weighting given by the individual to the many variables in operation. The weighting is, in-turn, influenced by the proximity of the factor to the individual for it seems likely that factors in close proximity will affect them more so than a comparatively

distant factor (Lewin, 1943). Proximal factors in one organisation may be distant factors in another, and vice-versa. The business environment will also play its part in determining reactions to organisational variables. The appointment of a new Chief Executive with new priorities, job cuts, drives for greater efficiency and quality, or anxieties caused by a proposed merger or takeover are all environmental influences to which an individual could respond, and this response may lead to changes in individual levels of commitment.

In the same way that researchers have held the organisation 'constant' in commitment research, then so to has the individual been seen as a constant. An unsaid assumption has been that individuals are mostly capable of high commitment if only role, job and organisational variables can be optimised. But is this assumption reasonable? While variables that individuals could be expected to welcome tend to associate positively with commitment, and those that could be expected to confound or confuse associate negatively, the impact of these variables on individuals could be buffered by personality dimensions. Individuals with personalities that are disposed towards the expression of committing attitudes and behaviours may be able to tolerate negative job, role and organisational variables. Persons whose dispositions hold back the expression of committing attitudes and behaviours may be unable or unwilling to respond to commitment enhancing variables. Perhaps some people, through their personality, are more disposed towards high commitment attitudes and behaviours than others. This idea is beginning to attract attention (e.g. Furnham, Brewin and O'Kelly, 1994; Morrow, 1993, pp.161-162), and is pursued in this research through the measurement of social exchange ideology. Personality characteristics have been overlooked in commitment research so far but there is an attractive argument for their inclusion in future work.

### 3.9.2 Commitment as a Reciprocal Construct

One of the central assumptions of this thesis is that relatively recent changes in organisational environments (discussed in chapter 4) have led to organisational responses which, in turn, have amplified the reciprocal nature of commitment. The notion is

grounded in theories of social exchange (Adams, 1965), cognitive dissonance theory (Festinger, 1957) and Schein's (1980, p.99) hypothesis that commitment and loyalty are dependent 'to a large measure' on the extent to which the psychological contract of individuals and organisations are in balance, and the nature of the exchange, for example, job security in return for hard work.

Given the background of labour market changes discussed in the next chapter, it is proposed that, until recently, most professionals would have held the view that job and other proximal factors were relatively stable. Organisational responses to business environments, it is argued, have adversely influenced these proximal factors. In such a scenario, dissonance should arise and would be more or less uniform across a group of individuals in a department or organisation (Festinger, 1957, p.194). Since these factors should be important to the individual, the magnitude of the dissonance should be high (1957, p.262). While there are many ways of reducing dissonance, those most relevant here include:

1. Adjusting one or more elements causing the dissonance such as changing job or employer, lowering attachment and dependence on the organisation.

2. Changing one's view of the importance of the elements causing dissonance, e.g. believing that job insecurity is not as important or not as threatening as initially perceived.

3. Discarding one set of dissonance causing elements in favour of another set, e.g. by switching commitment from the organisation to the work group or customers.

4. Attempting to change the actions of others, e.g. influencing employers with measures to enhance job security or severance packages.

5. Misinterpretation of new information such that dissonance is not increased.

The third mode of dissonance reduction above, coupled with the finding (Festinger, 1957, p.265) that groups of people facing similar dissonance reduce dissonance through social support is particularly relevant here. It explains why employees in a troubled or struggling organisation may transfer their commitment from organisation to a work group or other focus. The basis of Adams' (1965) theory is that a person compares their output/input ratio with that of others and adjusts if inequity is perceived. Adjustment comes either through altered behaviour, for example, to reduce an input, or an altered cognitive state, for example, perceiving an input or output in a different way. Adams (in Mowday, 1991, p.114) proposed six possible ways of restoring equity which are mapped onto Festinger's five ways of dissonance reduction in Table 3.10.

**Table 3.10 Individual Strategies for Coping with Dissonance**

| Festinger (1957) | Adams (1965) |
|---|---|
| 1. Change causes of dissonance | Leave the field (exit) |
| 2. Change view of importance of causes of dissonance | Cognitively distort inputs or outputs |
| 3. Discard the dissonance causing elements for a new set | Alter inputs. Change the comparator |
| 4. Change the actions of others. | Alter outcomes. Attempt to change actions of others. |
| 5. Misinterpret information causing dissonance. | Cognitively distort inputs and/or outputs. |

Equity theory arose out of theories of social exchange (Mowday, 1991, p.111). It is one of several theories of motivation and, while commitment is not the same as motivation, the theory has application here. It is a useful theory to explain how commitment could vary through its emphasis on understanding interpersonal interactions at work. While developed to explain comparisons with others, the 'other' can also be an organisation. Here, the input is commitment and the outcome is the 'package' received by the employee. Further

justification for commitment as a social exchange phenomenon can be found in Gouldner's (1960a) review of reciprocity in social systems. Essentially, Gouldner holds that the norm of reciprocity is generalised and universal and that it makes two demands; 'people should help those who have helped them', and, 'people should not injure those who have helped them' (1960a, p.171). Five key points emerge from his thesis that are particularly relevant to commitment (1960a, pp.171-172).

1. 'Obligations of repayment are contingent upon the imputed value of the benefit received'.

2 'Obligations imposed by the reciprocity norm may vary with status of the participants within a society'

3. The reciprocity norm varies in intensity between cultures.

4. That the norm is 'commonly found..in the culture structure in all institutional sectors, even the most rationalised, in the United States', and,

5. While some sociologists believed that the norm stipulates that the 'amount of return to be made is roughly equivalent to what has been received..there may be a specific reciprocity norm which does in fact call for equivalence'.

The reciprocity norm remains active in work organisations and explains the level of commitment shown by an individual at various times. The norm would act to explain why an employee stays with an organisation when either more attractive opportunities beckoned or when current exchange relationships were dissatisfying (Scholl, 1981, p.594). Levinson (1965) considered reciprocation between man and organisation more specifically. He saw reciprocation as, 'a continuous process of fulfilling mutual expectations' (1965, p.384) and three points in particular are relevant to the reciprocity-commitment linkage.

1. Reciprocity fosters psychological growth through the individual internalising organisational skills and knowledge.

2. Reciprocity raises opportunities for advancement.

3. 'In reciprocation, each partner shapes the other to some extent' (1965, p.389).

Reciprocity has at least two bearings on commitment. First, and positively, it explains why employees persevere with an organisation during times of difficulty if they believe that they have not repaid or returned previous inputs from the organisation, such as the costs of training that they have received. Second, and negatively, reciprocity theory explains why employees are not prepared to input above average effort if they perceive that they are receiving nothing above what is reasonably expected from an employer. The issue is clouded by the finding that individuals can differ in their reciprocation ideology. An individual may have a 'creditor ideology' in which he or she returns more than they have received, others have a 'reciprocation wariness' or debtor ideology through which the individual is cautious of giving repayments for fear of being manipulated or taken advantage of (Eisenberger, Cotterell and Marvel, 1987). This finding is akin to Mowday's (1991, p.125) account of Pritchard, Dunette and Jorgenson (1972) who classed individuals as either input-oriented or output-oriented regarding their reactions to inequity.

Reciprocity theory provides a foundation for the view that survivors who witness the sudden redundancy of conscientious colleagues might alter their perception of the organisation and their view of the effort they should expend for it. On one hand, survivors might attempt higher performance in an effort to become less vulnerable to future job losses and this is supported by Brockner, Grover, Reed and DeWitt (1992, p.422) who found that feelings of moderate job insecurity lead to greater work efforts than feelings of low job insecurity but only when the individual had a high economic need to work. Clark and Koonce (1995) found that survivors' capacity for higher performance after downsizing was limited and temporary. Alternatively, performance might be consolidated or even reduced if employees feel that good performance will give them no immunity. Building

on the ideas of Gouldner (1960) and Scholl (1981), the idea of commitment being examined directly as a social exchange phenomenon has attracted attention from researchers who attempted to operationalise the concept with a measure of perceived organisational support (Eisenberger, Huntington, Hutchinson and Sowa, 1986; Eisenberger et al. 1987; Eisenberger et al., 1990; Shore and Tetrick, 1991).

### 3.9.3 Commitment and Perceived Organisational Support

As noted above, although loyalty and commitment are different, they have much in common. Trust is a likely ingredient of loyalty (Fielder, 1992, p.75) and is thought to be a driver of commitment (Hosmer, 1994). While there is no single definition of trust (see Clark and Payne, 1997), accepted definitions from philosophy and ethics include the notion that decisions by the trusted, the organisation, would at least not be detrimental to the trusting person, the employee, (Hosmer, 1995). Perceived support is not equivalent to trust but it seems likely that a person who perceived high support would also express trust in the organisation and, likewise, low perceived support would generally be expected to associate with low trust. In light of attempts by strategic human resource management to move away from compliance and control as supposed determinants of organisational success, organisations must seek to establish trust and demonstrate their support to individual employees. This notion of trust and fairness is key to organisational success, particularly where knowledge workers are concerned, and is discussed more fully in chapter 4. Eisenberger et al. (1986) were also concerned with the extent to which organisations value their employees' contributions and care about their well-being, postulating that employees form a general perception about these factors. This general perception was operationalised as perceived organisational support (POS) and developed into a uni-dimensional, 17-item scale, the Survey of Perceived Organizational Support (SPOS), to measure the construct. Perceived organisational support correlated strongly and negatively with periods of absence, positively with supervisor ratings of performance, and positively with affective attachment (r=0.64) for both managers and hourly paid workers. The link between perceived organisational support and absence was strongest for employees with a strong

exchange ideology as measured on a five-item scale. This finding is useful in highlighting that employees can differ substantially in their adherence to and acceptance of the reciprocity norm at work. The sample size of 71 teachers, however, calls for more studies of the effect of exchange ideology on work behaviour.

Kottke and Sharafinski (1988) also supported the uni-dimensionality of the SPOS and adapted it to measure support from the supervisor. Shore and Tetrick (1991) examined the distinctiveness of the SPOS from other constructs, finding it to be empirically distinct from affective and continuance commitment (Meyer and Allen, 1984) and the OCQ. Furthermore, employees were able to differentiate affective and continuance commitment from the organisation's commitment to them. The divide between satisfaction and perceived support was less clear suggesting some similarity between the two constructs in that dissatisfaction with both organisation and the job may be very closely linked. Although high zero-order correlations between commitment and perceived support were found, it is worth noting that the average tenure of participants in their study was 22 years. Given the positive association between tenure and commitment found in the literature, it might be that the general level of commitment of employees in this single-site study was relatively high arising from the positive commitment-tenure link noted earlier.

Although they did not use the SPOS, Gaertner and Nollen (1989) examined the links between affective commitment and employee perceptions of employment practices. Their results were substantiated by findings that employees with favourable perceptions about opportunities for internal mobility, organisational training for future jobs and organisational concerns for job security were more affectively committed to the organisation. These perceptions of organisational employment practices explained more of the variance in commitment than other work-related variables. While the business environment in which their field site operates is not given, it is reasonable to assume that, as a large US manufacturing plant, it had been exposed to competitive forces and that employees were aware of the general economic conditions.

Perceived support has been found to positively associate with attendance, affective commitment, continuance commitment and innovation for the organisation (Eisenberger et al, 1990) and to be a better predictor of citizenship behaviours than either affective or continuance commitment (Shore and Wayne, 1993). Orthner and Pittman (1986) found a significant relationship between organisational support for employees' families and the job commitment of the employee. A distinct but similar construct to perceived organisational support is organisational dependability (Buchanan, 1974; Spencer and Steers, 1980). Meyer and Allen (1988) define this as 'the extent the organisation could be trusted to behave as it said it would', which is similar in conceptualisation to 'those experiences which confirmed the important expectations of senior managers' (Buchanan, 1974, p.38). Buchanan's (1974) work is interesting in that he examined how commitment changed with the career stage of managers, proposing that different variables will operate at three different stages, ie. the first year, 1-4 years, 5 years and above. Organisational dependability was presumed to be a major influence on commitment after five years' tenure but not before. In a regression equation across all career stages with commitment as the dependent variable, dependability was one of seven variables that collectively explained 68% of variance (N=279). However, separate regression equations were computed, one for each of three career stages. Contrary to theoretical predictions, dependability explained none of the variance in commitment for managers (N=142) in their fifth year or beyond. Nor did it explain any commitment variance in the first and second career stages.

One explanation for these findings is that Buchanan's five item scale did not adequately measure dependability, and that dependability did, in fact, account for some of the unexplained variance. An assessment of his scale items, however, is not possible as they were not reported. If the scale was a valid measure of the construct, subjects may have shown little variance if they mostly perceived organisational dependability to be of the same level, that is, no variance in the measure would have been observed. Alternatively, dependability may not have been a significant influence on commitment at the time of the survey. Since the early 1970s, however, organisational climates and labour market conditions have substantially altered such that dependability and similar constructs can

now be expected to be more influential. As Patch, Rice and Dreilinger noted, 'The new [psychological] contract is one of mutual commitment rather than loyalty and security.' (1992, p.49). Since the perceived support construct measures employees' feelings about their future prospects, in the wider context of an uncertain job market, it can be considered a highly proximal variable at the present time (see also Bartlett and Ghoshal, 1995).

In sum, this review has emphasised the reciprocal nature of organisational commitment. Although reciprocity theory is not itself new, it is evident that developments in the background climate of employee relations have amplified its role in organisation theory as evidenced by the development of scales such as the survey of perceived organisational support which measure the organisation's commitment to the individual. Having explored the commitment domain, it is necessary now to return to the specific question of how commitment is measured since this is the bedrock on which commitment theory is built. Before going further, the reader may wish to refer to the commitment scales in Tables 3.2 to 3.5 in order to recall their specific item content.

## 3.10 REVISITING THE MEASUREMENT OF COMMITMENT

The literature maintains that commitment can arise from one, or more, of four reasons.

1. Commitment can arise because people identify with and internalise the goals of an organisation because the goals have meaning and relevance to the individual. This is termed affective or attitudinal commitment and is often measured using the Affective Commitment Scale (Meyer and Allen 1984), the OCQ (Mowday et al. 1982) or the BOCS (Cook and Wall, 1980). See also DeCotiis and Summers (1987, p.458) for a 6-item attitudinal scale.

2. People can be committed due to economic and financial ties that bind them to an organisation and this is measured using the Continuance Commitment Scale (Allen and Meyer, 1990; Meyer and Allen, 1984; Meyer et al., 1990)

3. The fourth, qualitatively different, reason to be committed stems from a general feeling of duty towards an object and this represents the normative commitment of Wiener (1982) and Allen and Meyer (1990).

4. Binding to organisations can arise following the display of open and explicit behaviours which are so explicit that the individual feels obliged to display commitment (Salancik, 1977). This is related to the situation in which people become committed to courses of action because of feelings of personal responsibility for initiating the original action (eg. see O'Reilly and Caldwell, 1981; Staw, 1976; 1982). Studies into this phenomenon commonly involve experiments rather than questionnaire-based surveys (Bobocel and Meyer, 1994).

When these scales are used, it is implied that they are measuring one or other form of commitment. These forms are then related to other variables, typically in a linear fashion with affective, continuance or normative commitment commonly being positioned as a precursor to behavioural outcomes such as turnover or job performance. The discussion will now attempt to show that there is an important weakness in these conceptualisations that centres around the distinction between the bases for commitment (the reasons why people are committed) and the description of commitment itself.

Consider the continuance commitment scale in Table 3.3. These 6 items all assess barriers to exit from the organisation, for example, the item based on low alternatives, 'I feel I have too few options to consider leaving this organisation', and the item based on high sacrifice, 'It would be very hard for me to leave my organisation right now even if I wanted to.' Together with their sister items, these items say nothing about the way that the commitment they are thought to lead to is revealed or displayed. For someone who scores highly on this scale, it is saying that their continuance commitment is high because they cannot easily leave the organisation. It is hard to imagine a manager considering that an employee is committed because the employee finds it hard to leave, and it seems more likely that, in assessing commitment, a manager would evaluate factors other than a person's accumulated ties. While Becker (1960, p.37) as the originator of the 'side-bets'

view pointed out that people who cannot easily exit may adjust their perceptions to conform to the requirements of their position, it is impossible to escape the view that the use of the term commitment in this case implicity equates commitment with inability to leave. This is clearly inappropriate and the construct measured through this scale would be more meaningfully called 'perceived exit barriers'.

The Normative Commitment Scale (not shown in the Tables) purports to assess the extent to which people give their commitment out of feelings of duty and obligation which are most likely the result of upbringing or past socialisation. For instance, the scale contains the items, 'I owe a great deal to my organization', and, 'This organisation deserves my loyalty' (Meyer and Allen, 1997, p.119). Once again, these scale items convey nothing about what the beliefs they refer to mean for the organisation and a high score on the normative scale seems unlikely to mean anything for commitment as a manager would seek to judge it in an employee. Of course, a person may well feel a sense of duty and obligation, but we are left wondering about the nature of the commitment it produces. It is argued here that it is misleading to consider personal values, which are measured using the normative scale, as commitment in their own right. This scale would be better renamed 'loyalty' or 'allegiance' as it simply captures a person's felt level of allegiance to an organisation.

The Affective Commitment Scale items in Table 3.4, for example, 'I enjoy discussing my organisation with people outside it', assesses the extent to which an individual identifies with an organisation or system, but to what extent does identification continue to represent commitment itself? This is the challenge to all three scales as the recurring assumption of these conceptualisations in the literature is that commitment is a distinctive entity that has both determinants and outcomes such as personal sacrifice and persistence (Weiner, 1982), in-role and extra-role behaviours (O'Reilly and Chatman, 1986), or prosocial behaviours (Becker, 1992). Despite reasonable clarity surrounding the reasons why a person can be committed, there seems to be much less clarity over the distinction between these reasons and a description of commitment itself. The considerable efforts directed by researchers, mostly in the United States, to explain commitment appear to have unravelled the 'why'

question but have largely played-down the question of what is commitment? Furthermore, Becker's (1992) work that drew attention to the importance of the foci of commitment appears to have aided an understanding of the 'what to' question but, once again, researchers are not provided with a clear picture of commitment itself.

The stock response to this criticism would be that researchers have assessed commitment by linking affective, normative and continuance scales to various outcomes and, in doing so, have explored the question of what is commitment? But there is a void in this argument that lies between the bases and the effects. What is this entity that exists, apparently, for either attitudinal, normative, continuance or behavioural reasons and which is linked to a multitude of outcomes? It is as if researchers have been dealing with a commitment 'black box' into which the reasons for commitment are entered and out of which has flowed a series of outcomes. Commitment research needs a much fuller understanding of what lies on the 'other side' of the bases of commitment, that is, a description of the commitment they may or may not lead to. If this limitation of commitment research is accepted, then the reasons for the inability of research to show links between commitment and its common-sense correlate performance become clearer since commitment itself has arguably not been measured with much accuracy, at least not with Meyer and Allen's scales.

This question over the nature of commitment, rather than its inputs and its outcomes, seems to have intrigued British researchers more than their North American counterparts. Guest (1991, p.43) views the concept of commitment as 'highly problematic' and sees high commitment as being

> 'concerned with both behavioural commitment to pursue agreed goals and attitudinal commitment reflected in a strong identification with the enterprise'.

Oliver (1990), following, a study of British workers, concluded that the targets for commitment should be actions (behaviours) and not objects, such as the organisation, as the notion of organisation has become too complex following the recognition of multiple constituencies. Coopey and Hartley (1991, p.28) felt that

> 'Commitment would be a more valuable concept..if it were defined in a more rigorous way based on a recognition that commitment can develop either through affect or behaviour'.

They also suggest that it is

> 'Necessary to redefine and operationalise the concept of commitment to include affective and behavioural manifestations and to clarify what organisational goals are being considered' (1991, p.29).

This suggestion is reminiscent of the OCQ, which is qualitatively different to the affective, normative and continuance scales through its use of three sub-scales to measure identification, effort and desire to stay. The items measuring identification are comparable to those in the affective commitment scale but the OCQ is substantially different through its embodiment of favourable attitudes towards both a desire to stay and job-related effort which reflect features that might associate with commitment, or at least have associated with commitment in the early 1970s. Thus, the OCQ can be commended for portraying a more rounded picture of what is commitment than the ACS which followed it. However, the incorporation of these two sub-scales in the OCQ over and above identification with goals has been a source of criticism (Morrow, 1993, p.107; Peccei and Guest, 1993; Reichers, 1985). In contrast, I believe that by combining identification with some of the behavioural intentions that can result from identification, the OCQ is a more accurate representation of commitment because it measures a tangible entity, a physical presence that can be expressed and which can be judged. It does not fall into the category of solely measuring a reason why someone may be committed but reveals something about what that commitment means for the organisation. The BOCS is comparable to the OCQ in having three sub-scales assessing identification, willingness to give effort (involvement) and desire to stay. Furthermore, all the BOCS items are expressed as either a belief or as an attitude. Thus, with the exception of one of the OCQ items, all the items contained in popular scales measure beliefs and or attitudes (see Table 3.2).

There seem to be at least two reasons why commitment has resisted attempts to produce a clearer understanding of its nomological network. First, commitment may be more than a set of uni-dimensional constructs and it may be more fruitful to think of commitment as constituting a series of dimensions that embody the reasons for commitment, the foci to which commitment is directed and a description of what commitment actually is. Given that this would necessarily involve several dimensions, the measurement of commitment and, in particular, the categorisation of an individual's profile of commitment would become highly complex. The second reason is that, even if commitment has a simple structure, then it is suggested here that it has been misconceived by researchers who became pre-occupied with its causes and its outcomes, and who have neglected the basic question, 'what is commitment?'. Although there are many definitions of commitment, it is arguable that there has been some slippage between its definitions and the way it is operationalised. It is ironic that slippage, if it has occurred, has been with the three-component measure designed in the 1980s to overcome alleged weaknesses in the OCQ.

What is more, the measures discussed above have been applied to a very wide range of occupational groups and yet little account of how commitment might differ between occupational groups appears to have been taken by the originators of these scales. Only Cook and Wall (1980) who consciously related the BOCS to manual workers appear to have done this. The final point to make is that the popular scales are steeped in a view of commitment in American organisations and also in the widespread quantitative approach to measurement that popularises American management journals which may have perpetuated an 'atomistic' view of this and other constructs in order to facilitate measurement and linear modelling. This cultural influence on the way commitment has been measured has been a 'hidden hand' shaping the interpretation of results - perhaps due to a lack of viable alternatives available to researchers.

## 3.11 SUMMARY

This chapter began by showing that organisational commitment can be traced to the management literature of the early twentieth century. The concept is still surrounded by much uncertainty and it is closely related to other forms of work commitment and involvement. Recent advances in commitment theory centre around the recognition of the organisation as an assembly of constituencies, rather than as a uniform social entity, and the idea of commitment profiles involving a pattern of commitments to these constituencies. Despite the uncertainty that remains, there is general agreement that commitment is beneficial to a wide range of organisational types. The commitment of professionals was then discussed, noting the added complexity of commitment to the profession. Commitment was then examined as a reciprocal construct and the need to explore its relationship to perceived support and social exchange was emphasised.

The discussion then returned to basics and asked questions about what it is that researchers have measured rather than simply assume that it has been organisational commitment in one form or another. Figure 3.1 illustrates my views of organisational commitment following this literature review. The components and expression of organisational commitment are divided into 4 layers. The first layer considers the reasons why people are variously committed (in terms of feelings of belonging) to an organisation or group. These 'real' reasons are highly personalised, so much so that they will often not be understood by colleagues or managers. The reasons given by employees may mask hidden factors that act to bind them to a particular group at a particular time. Since the factors can be hidden, they are difficult to assess, except through interpretive research, and they do not lend themselves to being measured and generalised. These factors are portrayed in the second level in Figure 3.1 as coalescing into more general feelings of how people ought to relate to others (moral values) and are the stimuli for behaviours arising from socio-economic arrangements.

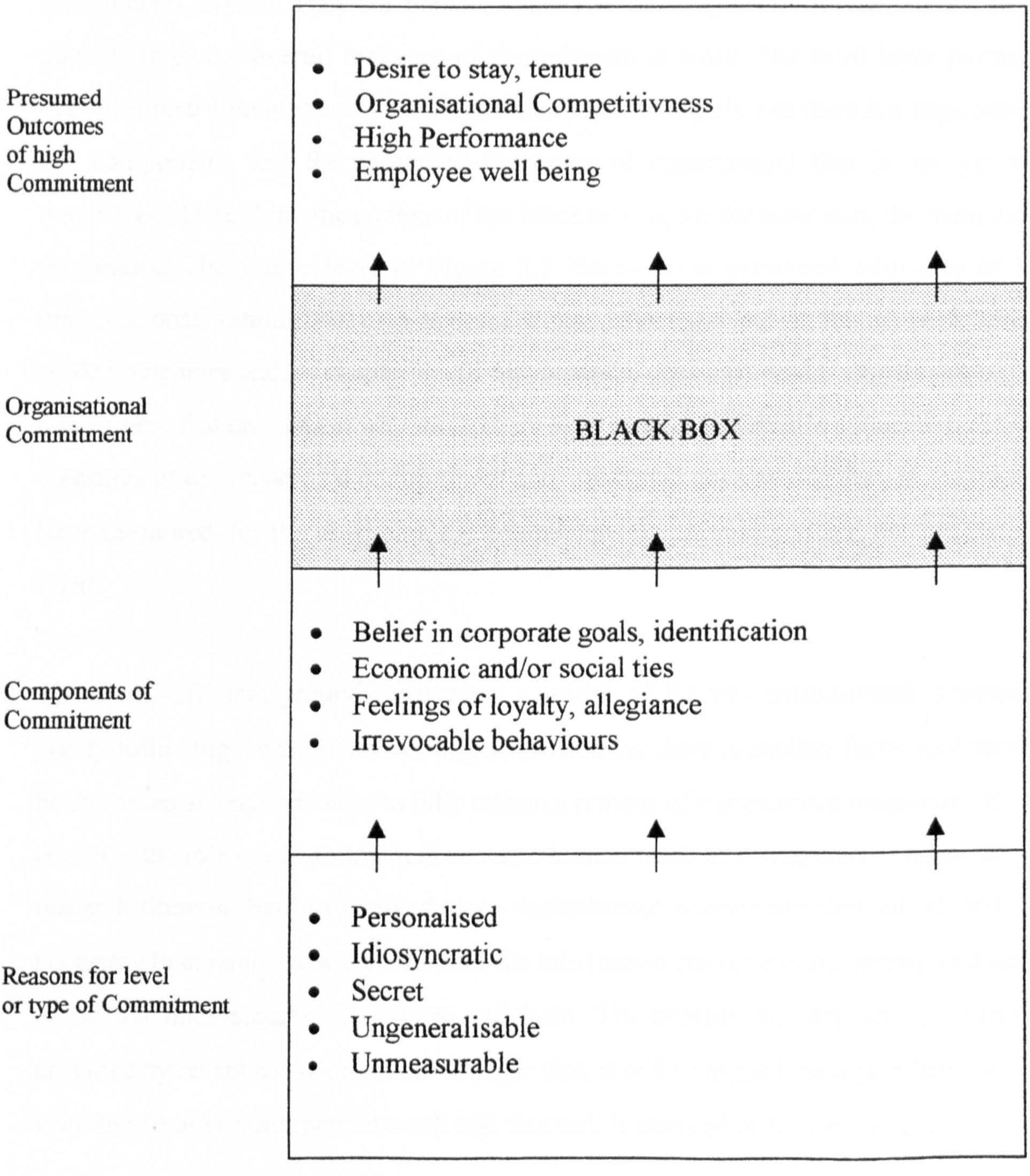


Fig 3.1 The Components and Expression of Organisational Commitment.

These feelings and perceptions are measurable and generalisable through, for example, the Affective, Continuance and Normative scales. At an aggregate level, they can be seen as the bases of commitment since they are the ground on which commitment, in whatever form it takes, is built. They are perhaps better seen as components of commitment as they contribute to the overall make-up of commitment at work. The third layer portraying organisational commitment is shown as a 'black box' to signify that there is a stage between the components and the presumed outcomes of commitment that is not yet well-understood. Describing the content of the 'black box' is, for the most part, the main aim of this thesis. The fourth level in Figure 3.1 shows some presumed outcomes of high organisational commitment such as desire to stay in an organisation, tenure, performance-related outcomes and, as chapter 4 will demonstrate, organisational competitiveness. It is argued here that one reason why researchers have usually found little connection between measures of organisational commitment and presumed outcomes is that, in reality, they have measured, for the most part, the components of commitment and not commitment itself.

There are sufficient grounds to warrant a rethink of the way commitment is measured purely following a critique of existing scales and yet there is another factor that needs to be discussed at length in order to fully inform a critique of commitment measurement. This concerns the role of commitment in strategic human resource management - a practice and research domain that has evolved since commitment scales were first introduced. It is necessary to examine how commitment fits into human resource management as a means of further understanding its nature and form. The context for such an exploration is provided by recent socio-economic changes that, it will be argued, have problematised the very nature of commitment at work and this task is pursued in the next chapter.

# CHAPTER 4

# PROFESSIONAL-ORGANISATIONAL LINKAGES

## 4.1 INTRODUCTION

During the time that researchers have been exploring how a virtually static view of organisational commitment is affected by different variables, a stream of literature has emerged that deals with one crucial topic - the relationship between economic change and social/cultural change. The unifying theme among these texts is the assertion that society has entered a postmodern era, that is, an era representing a time beyond the industrial, mass production society. This has been variously described as the end of organised capitalism and the advent of postmodern culture (Lash and Urry, 1987), the end of Fordist mass-production and internal labour markets and the coming of an era of flexible accumulation (Harvey, 1990; Lovering, 1990), the advent of an information society supplanting post-industrialism (Lyon, 1986), and, on the basis that 'the changes in society in the latter part of the twentieth century are regarded as so momentous, and constitute so sharp a break with earlier capitalist patterns and practices', Kumar's (1995) account of post-industrial and post-modern society.

While these texts admirably cover economic and cultural change, they do not specifically address the issue of how these changes might be affecting the practice of employee relations in Britain. This has been left to other authors who will be reviewed in this chapter in an effort to show that the employee relations landscape has been reconfigured as a result of legislation, market-based competition, organisational restructuring and attitudinal change. It will be argued that a new landscape for employee relations calls for the re-examination of old beliefs and assumptions with particular reference to the nature and form of organisational commitment. The main changes that have occurred in the operating environments of public and private organisations are discussed before turning to examine how these changes have affected employee relations. The central role of commitment in

achieving successful outcomes for strategic human resource management is identified and the changed climate for employee relations is then linked to the nature of organisational commitment. A rationale for re-evaluating commitment in light of the changes is developed with particular reference to organisational professionals.

## 4.2 GENERAL LABOUR MARKET DEVELOPMENTS

There is no single event or specific time to which the start of the reconfiguration of industrial and labour relations in Britain can be traced. However, the 'Winter of Discontent' in 1978/9 (see Hay, 1996) followed by the election in 1979 of a Conservative government that was to remain in office until 1997 represent a turning point for British labour relations (Brown, Deakin and Ryan, 1997; Edwards, Hall, Hyman, Marginson, Sisson, Waddington and Winchester, 1992). It would be incorrect to see the start of sectoral change as being a simple consequence of a new government, however, as the pressure for change had been building for some time. The build-up was caused by an acceleration of international trade during the 1970s and the inability of producers to shed out-of-date working practices that were hampering competitive responses to market conditions. The significance of the changes since then is emphasised by the quantity and quality of research in the field, for example, the longitudinal Workplace Industrial Relations Surveys (Millward, 1994) sponsored by the Department of Employment, the Economic and Social Research Council, the Policy Studies Institute and the Advisory, Conciliation and Arbitration Service. The stature of these bodies underwrites the importance of the research to an understanding of employee relations practices that can be used by policy makers, practitioners and academics alike.

An important aspect of industrial and employee relations in the 1980s was the introduction of a series of Acts of Parliament designed to introduce legislation to regulate industrial action, closed shops and individual employment rights. This era also saw the government in open confrontation with organised labour as exemplified by the printers' dispute of 1981 and the miners' strike of 1985, conflicts which eventually led to a triumph for management

and subsequent changes to working practices and sharp reductions to the numbers employed in those sectors (e.g. Richardson and Wood, 1989). Two deep recessions occurring in the early 1980s and 1990s brought about major transformation to the structure of the productive industries in the UK (Geroski and Gregg, 1993, Lash and Urry, 1987) and typical reactions by firms included large scale shedding of jobs and increased business failure rates. Employment in production and manufacturing industries[1] fell from 12.0 million in 1981 to 8.8 million in 1991 and to 8.5 million in 1998 as a result of contraction and site closures. Service sector employment rose from 13.5 million in 1981 to 15.8 million in 1991 and 17.9 million in 1998, and these shifts in employment have been reflected in the share of national gross domestic product from manufacturing and production falling from 34.7% in 1980 to 26.6% in 1995 while the share of output from service sector activity has increased from 47.9% to 66.4% in the same period[2].

These structural adjustments were, in part, attributed to the survival strategies of organisations in the face of rapidly growing competition brought about by internationalisation of product markets and the reluctance, or inability, of government to introduce protective measures. Following the United Kingdom's entry into the European Community, it became unlawful for one member state to impose import protection against another and competition policy has since become increasingly influenced by the European Commission. To compound government reluctance or inability to protect sectors, the Commission took a close interest in investigating competition policy in order to eliminate unfair practices which might result from collaboration between firms, the use of monopoly power, and the provision of state aid to industry. At the same time as these developments were affecting Britain, newly industrialising countries, such as South Korea and Taiwan, were expanding their economies rapidly with much of the expansion built upon production for export markets in Europe and North America. Large sections of the British workforce were exposed to import competition as the share of imports in home demand increased

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[1]Source: *Labour Market Trends*, published monthly by the Department for Education and Employment.

[2]Source: *UK National Accounts, 'The Blue Book'*, Office of National Statistics.

from 26% in 1980 to 45% in 1995 (Brown et al, 1997). Thus, a major factor in the background to workplace changes that have occurred since the early 1980s has been the growth of competition. This is not to say that rising competition has been the sole cause of the changes that have occurred, although that is an attractive argument. A counter-argument that the changes resulted from the prevailing political ideology in the UK also exists, as illustrated by Hutton's (1996) '*The State We're In'*. Regardless of the causal sequencing, however, organisations were required to respond to changes in their competitive and operating environments and this is evidenced by the high level of interest in seeking explanations of competitive advantage and a substantial literature exists with this objective ( Hamel and Prahalad, 1993, 1994; Kay, 1993; Porter, 1985).

Rising competition, however, was not solely confined to the private sector and, in the UK, public sector organisations were required to respond to increasing pressures on public spending. In the face of the demand for, and expectations upon, public services rising faster than public funding could accommodate, public sector organisations began to evaluate and implement management practices such as Compulsory Competitive Tendering (latterly Best Value) in local government, quasi-markets in the National Health Service and market testing in the Civil Service, (Pollitt, 1993). These initiatives forced a rethink of roles and responsibilities leading to extensive job changes (Colling, 1993). A programme of privatisation of nationalised sectors including electricity generation, gas and water supply, telecommunications and transportation exposed the managements and employees of large organisations to market forces and the search for competitive strategies. These pressures are reflected in public sector employment dropping from 7.2 million in 1981 to 5.2 million in 1995 concurrent with a rise in the number employed in the private sector of 2.4 million to 20.3 million (Hughes, 1996). Another large sector affected, in this case by deregulation and the rapid advance of information systems technology, was financial service retailing which witnessed major job losses in some organisations and the entry of new competitors, thus raising levels of competition in the sector. Handy (1989, p.7) considers that the historical norm of 'incremental' change is being replaced by an era of 'discontinuous' change in which organisations find themselves having to cope with sudden, large scale changes to their markets and a comparison of the main features of the

'old' and 'new' organisational environments is given in Table 4.1.

**Table 4.1 Changes occurring in organisational environments.**

| | Post-Industrial | Industrial |
|---|---|---|
| Business Environment | Global and international scale competition | Domestic scale competition |
| | Productive capacity exceeds demand | Demand and supply in balance |
| | Lower barriers to trade | High tariffs and quotas |
| | Decreased state intervention and support | State intervention to protect and manage economies |
| | Individualisation of products | Mass Production |
| Working Practices | Team oriented, flattened and horizontal structures | Hierarchical<br>Directive, control oriented |
| | Reliance upon individual level innovation | Routine |
| | Fuzzy boundaries between customer-oriented units | Clear boundaries between departments |
| | Focus on the individual and work group | Collective focus for setting pay and for assessing performance |
| | External labour markets | Internal labour markets |
| Organisational Practices | Networking, collaboration, alliances, relocation | Little inter-organisational collaboration |
| | Small volumes feasible through JIT technology | Emphasis on large production volumes |
| | Fragmented Production, outsourcing of functions | Centralised production of business functions |
| | Supplier partnerships | Adversarial relations |
| Job skills | Expanding services and professional work | Industrial and manual labour dominates |

Source: Adapted from Harvey (1990), Hatch (1997).

However, while they form part of the general backdrop to this study by demonstrating environmental turbulence, specific structural changes at sector level are not of primary importance here. What is of greater interest to this thesis is the effect that these structural changes have had on the employee-organisation linkage (see Hamel and Prahalad, 1994; Herriot and Pemberton, 1995; Hiltrop, 1995). For the moment, relationship changes are considered at a broad level rather than at a sector-specific level because it is assumed that, in general, relationship changes have been largely uniform across sectors. It cannot be assumed, however, that the relationship changes have been the same for all occupational groups and this raises a question for the choice of sampling frame to be used in the study. I return to this in the next chapter, but for the moment, it is necessary to move the discussion forward in order to show how the macro-level changes have affected the employee-organisation relationship and to consider in some detail the role of commitment in organisations.

Prior to 1979/1980, the practice of employee relations (commonly then termed Employment Relations and emphasising the contractual side of employment) was concerned with personnel management and commonly dealt with issues at a collective level through trade unions and employee associations. Concurrent with the sector-level changes outlined above, there was a move away from collective personnel management, illustrated by the decline in the number of employees covered by collective bargaining and statutory wage arrangements from 83% in 1980 to 48% in 1994 (Brown et al., 1997, p.75), towards the notion of strategic human resource management (Storey, 1989, 1992). Four broad themes can be found in the employee relations literature reflecting changes that have required a reconceptualisation of the way organisations attempt to manage people.

1. Restructuring of organisations (through downsizing and delayering) which was carried out as a precursor to increased productivity but which has been linked to negative outcomes such as job insecurity, reductions in morale, employee trust and loss of organisational knowledge (Cooper, 1998; Holbeche, 1995; Kozlowski, Chao, Smith and Hedlund, 1993; Mishra, Spreitzer and Mishra, 1998; Smith, 1996; Stroh and Reilly, 1997).

2. Individualism, that is, a de-collectivised employment relationship that emphasises individuals taking increased responsibility for their continued employability (Beardwell, 1992, p.6; Guest and Peccei, 1992, p.34).

3. Diminution of trade union membership and recognition with concomitant moves towards recognition of sole bargaining rights for a single union or staff association and, in some organisations, non-union agreements (Cully and Woodland, 1997; Visser, 1998) .

4. Decentralisation, which embraces localised pay bargaining on the basis that organisations should pay what they can afford rather than submit to multi-firm or industry-wide pay agreements (Brown et al, 1997; Jackson, Leopold and Tuck, 1992).

These four themes co-existed to give greater freedom to managers to organise work, to implement management concepts and practices and to carry them through with greater authority and assertiveness. The collective effects of these and other changes have been dubbed the 'New Industrial Relations' (Beardwell, 1992; Kelly and Kelly, 1991) and a substantial literature has emerged dealing with the human resource management strategies of organisations and the effects of these strategies on employee attitudes and performance across a range of occupational groups. A recurring theme in this literature is the aim of HRM practices 'to engender employee commitment to organisational goals' (Millward, 1994, p.3). The central role of employee commitment is also evident as commitment is seen as a focal point of human resource management strategies because of its presumed antecedence to outcomes such as performance, labour flexibility and creativity (Cheng and Kalleberg, 1996; Coopey, 1995, p.56; Guest and Peccei, 1992, p.34). The title of Walton's 1985 paper, *From Control to Commitment in the Workplace* makes the point which has been pursued by others (Barrow and Loughlin, 1992; Bowen and Lawler, 1992; Guest, 1992; Ulrich, 1998; Wood and Albanese, 1995). Since commitment to organisational goals lies at the heart of existing definitions of organisational commitment (see chapter 3), a clear link is thus established between organisational commitment and the new employee

relations. What, though, can be said about the actual effects of these apparently well-meaning changes on actual attitudes towards work? Bryson and McKay reporting a longitudinal study of attitudes towards work found that employees feel the working environment has clearly deteriorated since the early 1980s.

> Nowadays employees are more likely to feel that the gap between the high and low paid at their workplace is too large, that management and employee relations are poor, that their jobs are insecure, that their workplaces are not being managed as well as they could be, and that they do not have much say over how their work is organised. (Bryson and McKay, 1997, p.38)

While their study showed that employees were no more likely than in the mid-1980s to pursue extreme exit strategies, like quitting, there is a distinct possibility that tensions are growing and have been frustrated by long term inability to find another job. Bryson and McKay were concerned about the effect on employers should labour market conditions improve.

> If employers are to maintain employee commitment, and prevent employees 'voting with their feet' (either by searching for work elsewhere or leaving the labour market entirely), then they will need to consider new ways of accommodating employees' desire for greater voice. (Bryson and McKay, 1997, p.38).

At the time this thesis was being conceived, the new employee relations were widespread throughout many employment sectors and occupations (Millward, 1994, p.117) and, since the literature on working life within the new climate and reactions to it is already extensive, then one could ask why is it necessary to pursue it further? Three reasons can be offered in response to this. First, achieving high commitment is by no means straightforward, and a literature extending back at least to the 1950s exists which has, as its main theme, the aim of identifying variables which raise or retard commitment (see chapter 3 for a review). However, attempts to implement high commitment human resource management practices can be thwarted by embedded cultures, technology and

systems (Guest, 1992) and other variables that appear to have negative effects on the creation and maintenance of commitment include lack of institutional support and lack of trust (Kelly and Kelly, 1991) and lack of natural justice (Clark, 1993). Given the widespread acceptance of the importance of commitment in, and to, organisations, it is necessary to continue to seek a detailed understanding of its antecedents and the factors which can moderate negative influences upon it.

Second, even though it is one of the key constructs of interest in the strategic human resource management literature, the content and expression of organisational commitment have not been re-evaluated to take account of any effects that the new employee relations may have had upon them. While the literature is firm in its conviction that commitment is a positive outcome for strategic human resource management, the meaning of commitment in the literature is not always made clear and this could also be an indication that commitment has different meanings in different work settings. By 'meaning', I am referring to the expression and form of commitment *per se*, and not its oft presumed outcomes (see below). That is, I am concerned to explore what commitment 'looks like', for example, what attitudes and behaviours would be judged as being indicative of high or low commitment in others? This may not be an issue for researchers who adhere to an interpretive, phenomenological research paradigm as they would not seek to extend a definition of commitment beyond the organisational setting in which it was explored and from which it was developed. In contrast, organisational behaviourists and psychologists who follow a substantially nomothetic outlook (see Chapter 2) seek 'transportable' operationalisations to use in studies of antecedents, correlates and outcomes (e.g. see Mathieu and Zajac, 1990; Meyer, 1997). The review of literature on commitment (chapter 3) identified that researchers continue to rely heavily on measures of organisational commitment that were developed before the new employee relations climate proliferated, in particular, the Affective Commitment Scale (Meyer and Allen, 1984), which owes much to the Organizational Commitment Questionnaire (Porter et al., 1974, Mowday et al., 1982) and the British Organizational Commitment Scale (Cook and Wall, 1980). Despite these concerns, research is still continuing that employs measures of commitment developed 30 years ago (e.g. Benson, 1998; Kalliath, O'Driscoll and Gillespie, 1998).

Third, as discussed in chapter 3, there is already a substantial literature dealing with the antecedents and outcomes of commitment, but a limitation of research published prior to the mid-1980s is that it was conducted during a time when business environments were relatively stable and predictable compared to the business environments of today. Strebel's (1996, p.89) observation following a case study of barriers to change in an Anglo-Dutch electronics manufacturer illustrates how roles and responsibilities were well-defined, in which case it was reasonable for commitment researchers to focus on the influence of micro variables:

> Job descriptions and position in the hierarchy set limits on responsibilities and operating outside these boundaries was discouraged. There was no incentive to exceed minimum expectations of performance.

For so long as employees can be confident of tenure and plentiful job opportunities, it is reasonable to expect that employee attitudes would be influenced by the more day-to-day events and issues that affected them. These factors are referred to here as micro-variables, since they were often within the corrective influence of employees and supervisors. Negative correlates of commitment such as role ambiguity could be addressed directly by the employee and his or her supervisor, for instance. This thesis maintains that, while these micro-variables are still important, the new employee relations climate has shifted the balance of the relationships among commitment's antecedents and correlates. The direction of the change, it is argued here, has been to de-emphasise micro aspects of the job and organisation and amplify the bigger, macro issues that have come to dominate working life and which lie further beyond the direct influence of employees. The thesis will later examine commitment in relation to certain macro-variables in order to explore this proposition.

## 4.3 COMMITMENT AND THE PSYCHOLOGICAL CONTRACT

The new order for employee relations and expectations can usefully be discussed in the context of a changing psychological contract. Psychological contracts are formed even when written formal contracts are used to describe an employment relationship. Schein (1980, p.22) sees the contract as an explanatory framework for describing the 'unwritten set of expectations operating at all times' between members of an organisation. Robbins (1994, p.93) believes the contract 'sets out mutual expectations - what management expects from workers and vice versa'. Each member of an organisation uses a contract to explain his or her exchange relationship with the organisation and with other members of it, and it can be interpreted as the employee's perception of mutual obligations between the two parties. As such, contracts are individualised and their primary function is uncertainty reduction (Shore and Tetrick, 1994, p.94). While the individual perceptions of psychological contracts differ, it is possible to identify some common assumptions within the contracts held by a group of employees. The classic assumption until the early 1980s heralded in the 'new industrial relations', was that organisations provided job security in return for hard work and loyalty (Herriot, Manning and Kidd, 1997, p.152; Strebel, 1996). Having noted some of the macro-level changes that have affected the workforce, for example, organisational restructuring and job cuts, it is important to look for micro-level changes that have had a general impact on the individual employee and which could have influenced employee-organisation linkages. These include, (Millward, 1994, pp.127-130):

- Greater communication from management, often via supervisors and team leaders, in order to foster greater involvement and, in particular, greater commitment to goals. Increased communication among employees has also resulted from greater reliance upon team work to tackle problem-solving tasks and to provide services to clients and customers, particularly in knowledge-based organisations (Scott and Tiessen, 1999).

- Increased scrutiny of employee attendance and day-to-day performance together with periodic performance review and development assessment including their introduction to the public sector (Edwards et al., 1992, p.27; Townley, 1991a).

- Harmonisation of conditions of employment within an organisation, for example, reductions in the numbers of salary scales.

- Increased availability and acceptance of part-time and temporary work.

- A higher incidence of job insecurity which can be seen as a failure of organisations to uphold their side of the (old) psychological contract and which associates with declines in commitment and trust in an organization, and with a rise in intentions to quit (Ashford, Lee and Bobko, 1989, p.819).

In sum, micro-level changes of this nature turn the spotlight more clearly upon individual employees and their contribution to the organisation. Taking account of the new employee relations and, in particular the corporate restructuring that occurred in the 1980s and 1990s (Cooper, 1998; Hiltrop, 1995; Mishra et al, 1998; Stroh and Reilly, 1997), the main differences between the core assumptions of the old and new psychological contracts are summarised in Table 4.2. Formerly, the essence of the contract embraced secure employment, salary increments for satisfactory work and the ability to progress within a career structure (Herriot and Pemberton, 1995). New contracts emphasise uncertainty over tenure, salary increases only for high performance and restricted career advancement in the same organisation. Inkson (1995, p.193), after a study of UK managers, concluded that the notion of a career as being progressive, hierarchical and pro-active was increasingly problematic. Inkson's research also showed that, in the recessionary period 1989-1992, managers experienced a marked decrease in the number of upward moves, while the proportion of sideways and particularly downward moves increased (1995, p.191). Job changes were increasingly reactive rather than proactive in origin.

Psychological contracts, once formed, are stable but can be changed as a response to perceived breaches of contract by the employee or organisation. Perceived breaches of contracts will be moderated by three factors (Shore and Tetrick, 1994, p.103): the type of violation; the size of the discrepancy; and, the amount of organisational responsibility for the unmet obligations. A worst case violation would occur when the type or process of the violation is seen as unfair, for example, being selected for regrading or relocation in an arbitrary as opposed to a procedural manner; when the size of the violation is large, causing the individual to focus on emotional issues, and, when the organisation is seen as consciously and deliberately taking the action. The effects of organisational restructuring on the contract have been largely ignored by organisations when making changes (Caulkin, 1995). Only recently is literature appearing that recognises the severity of the problem (Brown, 1995; Cooper, 1998; Hiltrop, 1995), although the dangers of leaving employees feeling unfairly treated was recognised some time ago (Gannon, Foreman and Pugh, 1973). Research linking breaches of the psychological contract to employee reactions is limited but indicates that outcomes are negatively related to citizenship and withdrawal behaviours (Shore and Tetrick, 1994, p.105). Hence, the psychological contract provides a theoretical mechanism for explaining how organisational responses to market conditions can lead to changes to work-related cognitions such as commitment.

## Table 4.2 Comparison of old and new psychological contracts

| Past | Present |
|---|---|
| Job security | 'Jobbing' professional |
| Career ladder (a 'carrot' of promotion) | Career development, responsibility rests with the individual |
| Predictable remuneration package<br>Predictable non-pay benefits | Pay and other exchanges heavily contribution based (eg. training) |
| Hierarchical organisation structures | Fewer points of authority and position power |
| Predictable workload and expectations | Load and expectations contingent upon organisational priorities and goals |
| Development in a job context | Development in a career context |
| Narrow role definitions | Broad role definitions (role adapts to meet priorities) |
| Limited involvement in corporate information ('need to know basis') | Access to more information so employees can select that which is useful |
| Full(ish) employment therefore scope for voluntary job change | Not so full employment therefore more involuntary job change |
| Tenure not solely linked to individual performance and contribution | Tenure more dependent upon contribution (added value) |
| Homogenous identity | Heterogeneous identity, fractional organisations (profit centres, service units) |

Source: Adapted from Hiltrop (1995)

As the aim of the employee relations changes has been to change attitudes at work (Hartley and Stephenson, 1992, p.7), then behavioural changes would also be expected to follow. This arises from application of the theory of planned behaviour (Ajzen, 1985, 1991; East, 1993) which, in essence, holds that in situations where a person has choice, a change in a person's beliefs will lead to a change in their attitudes which in turn will lead to a change in their behaviour. Furthermore, it is implicit in strategic human resource management that the attitude and behavioural changes should be widespread and stable in the long term. In view of the centrality of commitment to the new human resource management, it follows that commitment becomes an important topic to study and the rationale for this can be summarised as follows.

- Strategic human resource management has been developed in place of collectivist personnel management (Blyton and Turnbull, 1992; Mabey, Salaman and Storey, 1998; Storey, 1989, 1992).

- Human resource management strategies aim to create favourable attitudes and behaviours directed towards the goals of the organisation (Hartley and Stephenson, 1992; Keenoy and Anthony, 1992).

- Favourable attitudes and behaviours are traditionally at the heart of organisational commitment which is thus central to the success of human resource management strategies (Cheng and Kalleberg; 1996; Coopey, 1995; Guest, 1992; Iles, Mabey and Robertson, 1990; Millward, 1994).

- From an organisational psychology perspective, the measurement of commitment is an important component of empirical studies (Meyer, 1997; Morrow, 1993).

- Researchers continue to measure commitment with instruments developed during the personnel management era and which have not explicitly been reassessed in light of strategic human resource management (Benson, 1998; Kalliath et al., 1998).

- Meaningful research in organisational science requires valid measures of important constructs and, therefore, it is necessary to re-examine the measurement of organisational commitment.

In sum, the size, scope and conviction of the management literature on human resource management and industrial relations leaves little doubt that some serious changes have been taking place in the management of business and commerce. What is less clear is how much agreement there is about the real impact that the changes have had upon individuals at work. The general climate for employee relations has not been constant in this period and one major change has been the diminution of industrial disputes and action from a high point around the early to mid-1980s. It is also important to recognise that the empirical evidence for positive outcomes resulting from the implementation of human resource management practices is patchy (Legge, 1995a). Indeed, the entire human resource management field can be criticised for being a stereotypical rhetoric in contrast to a managerial reality that brings about real changes to workplace practices (Legge, 1995b). The issue is whether the changes to managerial practice have brought about real change to the way employees feel and behave at work, or is this largely an illusion based upon an image of an ideal type of employee created by management as an ideal solution to the ambient competitive situations that organisations encounter (e.g. see Poole and Mansfield, 1992)? It would be foolish to uncritically accept that all managements and all employees have responded to a new employee relations climate and that this climate has uniformly reconfigured orientations towards work and organisations. This is an important observation given that the central tenet of this thesis is a re-examination of organisational commitment. However, the focus of this thesis is to investigate how commitment is constructed specifically among organisational professionals and to test that construction on appropriate sample groups. Consequently, the remainder of this chapter examines the changing employee relations climate for the organisational professional with particular reference to its effects on commitment and professional ideology.

## 4.4 THE ORGANISATIONAL PROFESSIONAL

### 4.4.1 Introduction

Having built a case to reassess organisational commitment, it is necessary at this point to consider some implications for the choice of sample domain. This is needed here because the literature has reported the application of a small set of universal measures of organisational commitment across a wide range of sample groups and, in Chapter 2, I have questioned the ontological status of doing so. The second reason is that the choice of occupational group(s) for this study has shaped the detailed research design by influencing the choice of variables to examine and the sampling strategy. It is important therefore, to give careful consideration to the sample used in this study and the rationale for its choice. Familiarisation with the organisational sociology literature (e.g. Friedson, 1994; Grusky and Miller, 1970) identifies that the professionals have problematic relationships with organisations due to the presumed tensions caused by dual commitments, that is, to their profession and to their organisation. It is also apparent from the literature on economic and industrial change below (DfEE, 1997; Foster, 1995), that the number of employees in professional, or professionalising, roles is on the increase. Concurrent with this trend, however, is a literature which deals with threats to professional values brought about by managerialism which threatens the classic autonomy of the professional at work (Exworthy and Halford, 1999; Pollitt, 1993). While other occupational groups, for example, manual workers, have also been affected by the new employee relations, their organisational commitment is not complicated by the presence of a profession that competes for their commitment and their numbers in the workforce are contracting rather than increasing. It may, however, be complicated by commitment to a union (Deery, Iverson and Erwin, 1994; Guest, 1991).

Given the research aims, it made practical and methodological sense to choose a distinctive work group for whom commitment can be problematic and, for these reasons, commitment was re-examined against a background of professional employment. This chapter now considers how economic and cultural changes have impacted upon the professional's

relationship to organisations. Additional details of the development of the professions and clarification of the terminology used is given in Appendix B. Suffice it to say at this point, that the discussion that follows is focused upon organisational professionals (the 'corporate patronage' professionals of Johnson, 1972), that is, professionals working in and for large bureaucratic organisations as opposed to the independent (high-status) professionals who tend to work in partnerships, some of which may be small.

### 4.4.2 The Professional-Organisational Environment

#### 4.4.2.1 Professionals in the Workforce

A momentum for attacks on the virtue of professions has been gathering since before the political upheaval of the late 1970s catalysed government into challenging the core assumptions of professional culture (Perkin, 1989, pp.472-519). The legal profession brought itself into disrepute with a series of unpopular rulings and restricted practices and stubbornness to reform itself (Crompton, 1990, pp.158-9). The medical profession began to be scrutinized far more closely for evidence of malpractice and its own self-serving activities were criticized for protecting poor medical judgements. Professional scientists lost the trust of the public as a consequence of rising concerns about the potentially catastrophic effects of scientific advances. The scientific community maintains a delicate relationship with the public whose understanding of science is made problematic by media reporting of, for example, pollution incidents, nuclear incidents, and concerns about the use of genetic science including cloning and genetically modified foods (e.g. Weingart and Pansegrau, 1999). The social work profession, in a highly publicised case, attracted criticism when social workers openly refused to deny wrong-doing when accusations of large scale child abuse were shown to be false after horrendous grief had been caused to the families involved (Hill, 1990). This critical incident, occurring in Cleveland in 1987, drew attention to the serious failings that professionals can achieve. Teachers continue to be the target of criticism, often through the offices of the Inspectorate for Schools, and such criticism, however politically motivated and misleading, is a regular occurrence in

the media. Given this background, the discussion now moves on to consider the number of professionals in the workforce in order to quantify the scale of the professional population. After this, the discussion turns to consider the effects of change on the professional/organisational linkage.

The structural problems perceived to be affecting the middle classes, including professionals, have attracted the attention of the British press in recent years (Gray, 1994; Margolis, 1994; Sampson, 1995; Smith, 1995). The story told is one of job losses rising faster among professionals than in other social groups with long periods of adjustment before alternative jobs become available - a problem not solely confined to the United Kingdom (Oxenstierna, 1993, p.97). Measuring the number of professionals in the UK workforce is confused by a lack of consistency in definitions and samples used and by revisions to statistical classifications over time. Another reason is that there is a large group of workers classed as employers and managers, about 15% of the workforce (Foster, 1995, p.60), who may be included, to a varying extent, in surveys as professionals. Although possession of high academic qualifications does not make a professional, achievement of a high level qualification is a characteristic of professionals. In 1991, 14% of men and 10% of women of working age were qualified to diploma or degree level (OPCS, 1993). These figures are, as expected, slightly above the 11% of men and 9% of women who were classed as professionals in a 1994 survey (Church, 1995) although Foster (1995, p.60) reported a lower proportion, 7% of men and 2% of women in 1993. Their time series data, however, show that the proportion of professionals in the workforce is rising, particularly women who have doubled their share which held at around 1% until recently. Forecasts for the labour market predict 14% growth in the number of professionals and 15% in the number of associate professionals and technical employees from 1996 to 2006 (DfEE, 1997). Hence, figures vary but it is clear that the proportion of men and women in professional roles is substantial and rising. About 3% of the British workforce is made up of science professionals with a science degree (O'Leary, 1997).

Having shown that professionals occupy a sizeable proportion of the workforce, specific labour market developments affecting them are now considered. Using the unemployment

rate for professionals as a measure, conditions have worsened. Gershuny and Marsh (1994), for instance, reported a longitudinal study showing that in the four post-war decades, people with high occupational prestige scores (and thus more likely to be professionals) experienced less unemployment per year than people with low or middle range scores. From the mid 1960s to mid 1970s, higher occupational groups still experienced less relative unemployment but the rate of increase in unemployment had become similar across all broad groups. During the period from 1976 to 1985, the rate of increase for higher occupational groups overtook that of other groups, although the absolute level of unemployment experienced by professionals and similar occupational groups remained relatively low. Recent data show the trend continuing, with unemployment among professionals at 5% in 1993 compared to 1-2 % at the beginning of the 1980s (Foster, 1995) compared to 10% across all occupational groups. Cockerham (1995) and Potter (1996) show that out of all main occupational groups, professionals have been the least likely to be made redundant with redundancy rates around 5 per 1000 compared to machine operators and craft-related jobs which have experienced around 20 redundancies per 1000 employees in the early to mid-1990s. Thus publicity about 'middle class' insecurity (Gray, 1994) is tempered by the finding that other occupational groups have fared much worse.

#### 4.4.2.2 Professions in the Public Sector

Interest in the role of professions in society and their relationship to bureaucratic organisations is well-established (Blau and Scott, 1963; Parsons, 1954; Macdonald, 1995; Perkin, 1989; Wilensky, 1970). Of continuing interest has been the interaction of both the professions and individual professionals with work organisations and the way professionals adjust to changing ways of organising (Cornwall and Grimes, 1987; Kornhauser, 1962; Vollmer and Mills, 1966). This particular theme has taken on a fresh importance recently in light of the literature, discussed above, that describes dramatic and turbulent change to operating environments and to the relationships that employees have with their employer.

The public sector is a fruitful arena for examining the professional/organisational linkage since a high proportion of its employees belong to occupational groups that aspire to a professional project, for example, teachers, nurses, social workers and local government officers (Harrison and Pollitt, 1994). These groups enjoyed relatively high power in the post-war expansion of the welfare state and, even in the absence of registration, have moved towards closure through accreditation of expertise (Cousins, 1987). The presence of an Association for Public Finance Accountants with a well-defined qualification route is one example of this. Until the onset of the Thatcher years, public sector professions had benefitted from steadily rising public expenditure together with a high degree of control over how that money was spent. This comfortable situation raised the public's confidence in public service professionals which, in-turn, helped to reinforce their position (Perkin, 1989, pp.419-436). They came to have considerable say over how spending should be prioritised and distributed.

This ascent of the public professions occurred at the same time that organisation theory maintained the inevitability of tension and conflict between professionals and bureaucracy in the Weberian sense (e.g. see Davies, 1983). The tension arises, in theory, from the need for bureaucracies to use formalised working practices (rules) and hierarchical authority which are presumed to clash with the professional's requirement for personal autonomy and self-regulation that were presumed to be in the best interests of the professions' clients and customers. Whether this tension has been an issue in the public sector is difficult to determine, however. Larson (1977, p.199) points out that professions employ organisation structures of their own to orchestrate their activities and observes that the public professions have used bureaucracy to provide career paths and to differentiate themselves from other professions and from client groups. Efficiencies arising from the grouping of specialised labour are also seen as a reason for playing-down the bureaucratization-autonomy conflict hypothesis (Fores et al., 1991, p.80). In the National Health Service, there is evidence that clinicians, in particular, benefitted strongly from assuming significant management control to the extent that many administrators and non-clinical managers worked around the dominant professions and sought strategies to accommodate them rather than control them (Kirkpatrick, Whipp and Davies, 1996, p.198).

From the early 1980s, the public sector has witnessed concerted attempts by national government to design and implement radically new policy towards it with the key thrust being to reduce and reinforce state involvement in the provision of services (Cousins, 1987; Pollitt, 1993). For those parts of the public sector that could not be privatised, the previous arrangements under which professionals planned and delivered services were undone with the introduction of quasi-markets (Flynn, 1999). These called for a strengthening of the role of line management in order to oversee adherence to much tighter accountability, the quality of services delivered and general efficiency gains (Exworthy and Halford, 1999; Wilson, 1993). It is hard to over-emphasise the extent to which line management moved to reclaim the right to manage, even to the extent of being seen as returning to Taylorist and Fayolian principles of objective setting, progress monitoring and feedback, all in a general climate of cost reduction and efficiency gains (Pollitt, 1993).

Given the intangibility of many professional services, it becomes necessary for the consumer to have a high degree of trust in the professional who is providing them. Indeed, achieving high trust with consumers is a key outcome of a successful professional project[3] (MacDonald, 1995, pp.30-32). In a competitive environment, suppliers can be trusted to deliver products and services in order to safeguard their own future but these high levels of trust do not appear to have existed with public service professionals (Walsh, 1994, p.200) because the state cannot impose free markets in which they work. Not only has public confidence been disturbed, despite the introduction of quasi-markets, Walsh points to a loss of trust in, and distrust of, the public service professional arising out of an inability to impose true market mechanisms. This, he believes, explains the creation and activities of inspectorates such as the Quality Assurance Agency for higher education, the Audit Commission for the National Health Service and local government, a Schools Inspectorate and the imposition of a national curriculum. Trust for the delivery of services is being transferred away from the traditional providers and producers towards a class of professional regulators, inspectors and auditors who control and measure the performance

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[3]A professional 'project' is the process by which a group pursues and adopts the characteristics of professional status.

of the system in its various component parts. Trust, according to Giddens (1991, p.19), 'presumes a leap to commitment, a quality of faith which is irreducible' and Walsh (1994, p.202) suggests that 'voluntaristic commitment is eroded by an emphasis upon commercialisation and contracts'. In the presence of a shift in the balance of trust, it seems likely that one impact on the professional-organisational linkage will have been to suppress altruistic behaviour at work and to favour a more instrumental commitment with the organisation in return for the instrumental commitment apparently being shown by the organisation towards the professional employee.

A second, parallel, development seen by Kirkpatrick et al (1996, pp.200-201) involved the instillation of a market focus in which professionals are given autonomy for operational, but not strategic, decisions involving the negotiation of service standards and contracts and for seeking innovative ways to provide them. The effect of market change was to make professionals far more accountable to their client/customer markets in addition to subjection to greater scrutiny from an increasingly assertive management. Ideological shifts by central government have affected the role and status of professions in the public sector through the influx of managerialist ideas and concepts exemplified in the quasi-market introduced into the National Health Service (Brooks, 1999; Dent, 1993) and compulsory competitive tendering and 'best value', in local government (Keen and Scase, 1996; Pollitt, 1993). These shifts in ideology have been matched by an increase in the influence and power of a managerial class in private organisations that is needed to pursue the growth of capital in 'flexible' organisation structures on an increasingly wider geographic scale (Reed, 1996). Corporate climates are such that professionals may be reduced in number and status through job cuts and re-organisation as the professional's role comes under increasing scrutiny (Anleu, 1992; Mechanic and Light, 1991; Powell, 1985; Starkey, 1989).

One influence of the market focus upon the activities of professionals is to reduce the professional's scope for autonomous decision making. Organisations continually seek greater value added which means that they must look for increasing leverage between professionals and their outputs. Coupled to this there is a growing emphasis on the values

of managerial and professional competences and it is no longer assumed that these competences will come about solely through the achievement of knowledge-based qualifications. Traditional qualifications tended to emphasise the assessment of knowledge rather than competence (medicine is a notable exception in requiring evidence for both) and the growing focus on performance criteria at work and evidence that they are met can be seen as a challenge to professional autonomy and creativity.

This rise in the power of management gives rise to the threat of deprofessionalisation brought about by the professions coming under attack (Dabbs, 1982; Illich, 1977; Kat, 1983). Indeed, Friedson (1970) observed that 'professional ideals and knowledge will be kept only if the environment reinforces them' (Friedson cited in Torres, 1991, p.63). If this view is accepted, then there are clear grounds for seeing professionalism as being under threat as corporate environments emphasise managerial control over priorities rather than defer to professional autonomy to determine them. In sum, while a profession's body of knowledge will continue to evolve, the value placed on that knowledge is vulnerable to decline and can be aggravated by the role of information technology as noted below. Furthermore, as operating problems become increasingly complex and costly to resolve, professionals are expected to interact more with internal and external groups, including other professions or customer/client groups (Greenwood and Lachman, 1996, p.566; Swailes, 1999, p.192). Information technology now makes it feasible to store, transmit and access knowledge and expertise that was once the preserve of the professions (Reed, 1996, p.588). Such technologies present a direct threat to the power and status of the corporate patronage professions in particular.

In spite of the argument above for professionalism being under attack, it is hard to identify the extent to which the managerialist rhetoric has actually led to changes in management practice or behaviour among professional employees (e.g. Ezzamel, Lilley and Willmott, 1996). Brooks (1997), for instance, found that operational changes which appeared managerially straightforward met with extensive resistance in an NHS Trust. Furthermore, it seems likely that the managerial tide has had different impacts in different areas of the public sector and upon different occupational groups. One generalisation is that the new

managerialism was more accommodating with the powerful professions such as clinicians (Pollitt, Harrison, Hunter and Marnoch, 1991) and so the weaker the professional status, the more conflict will have arisen. Where professionals, and other groups, have been charged with raising service levels and efficiency, then this may have translated into a climate of lower trust and poorer relationships between work groups (Kirkpatrick et al., 1996, p.203). These changes arise because it is implicit in the managerialist argument that inefficiencies existed in the practices that had been previously followed. Relationships have altered such that they are founded largely upon achieving measurable objectives and time spent on relationships that do not have a distinct commercial outcome would be expected to have diminished. It is also reasonable to consider that the setting of targets to groups previously responsible for regulating themselves is indicative of low trust on the part of the target setters. The presence of a persistent rhetoric regarding customer service, quality management and the like (DuGay and Salaman, 1992) also points to the professional's traditional vocabulary being supplanted by a new set of values.

Thus, it is possible to generalise to consider that the public professions have seen management, acting on behalf of the organisation, take a higher profile and a more intrusive role in the monitoring of professional activities. The organisation and its interests have loomed larger yet, at the same time, the professional is less able to influence those interests and, in particular, the goals of the organisation (Kirkpatrick et al., 1996, p.209). This could be taken to indicate a challenge to affective organisational commitment which is classically seen as the internalisation of goals. The second strand to emerge is a serious challenge to professions by impeding the expression of some of the dimensions of professional work, in particular, self-regulation and autonomy. Self-regulation can occur *per se*, but the context for it has changed. That is, the issues that once were self-regulated, for example, decisions about the 'best' way to deliver services, have diminished and have been replaced by an imposed set of issues, such as, conformance to budgets or achieving customer service targets. Likewise, autonomy appears to have been reined-in but there has been a compensating devolution of responsibility for the achievement of targets. If these aspects of professionalism (Hall, 1968, Kennedy and Ramsey, 1995) have been disturbed, then there should be a knock-on effect on other aspects of working life such as overall

commitment to the profession (professional commitment).

The term 'professionalism', is commonly used to portray the extent of an occupational group's progress towards ultimate professional status although I prefer to call this 'professionalisation' and to use 'professionalism' to describe individual-level attitudes towards traditional professional values (Hall, 1968, Snizek, 1972), see Appendix B. It is, therefore, possible to make a connection between organisational commitment and professionalism which does not appear to have received attention in the literature. Although there is a large literature on the commitment of professionals, the measurement of professionalism, as opposed to professional commitment, has not been found. Further consideration of professionalism is warranted here as it lies at the heart of the professional's activities within the context of bureaucracy. Until the early part of the twentieth century, professionals gave their services to those who had the ability to pay for them, namely the gentry, the civil service and the military (Reader, 1966, pp.1-9). This was transformed between the two world wars to a 'social service ethos' (Hanlon, 1998, p.49) based upon the notion of services being provided to those who needed them and not simply to those who could afford to pay for them (Parsons, 1954, Wilensky, 1964). This transition was made possible by the state which became increasingly willing to employ and pay professionals in expanding sectors covering education and medical care among others.

In response to political ideological shifts that originated in the late 1970s, the state attempted to recover the balance of control over service delivery as observed by Hanlon (1998, p.50),

> This definition of professionalism came under attack..and there has been a struggle for the soul of professionalism as elements within established professions, previously less important professions, and newly emerging professions seek to redefine what professionalism means.

Hanlon refers to this attack on traditional professionalism as 'commercialised professionalism' (p.50) that incorporates three factors, the ability to practice in the profession (technical ability), the ability to manage others (managerial ability), and, the

ability to develop new business or at least improve efficiency (entrepreneurial ability). If this view is valid, then it represents a major shift in the nature of the professionals' relationship with their organisation. Commercialised professionalism is dominated by far greater accountability towards the public and to the organisation in the form of assuming responsibility for the work of others and for acting in an entrepreneurial manner. A related issue is that certain characteristics of professionalism, collectively including codes of behaviour, trust, continuing development, are now required in a range of other occupations (Crompton, 1990, p.162). This, in the long term, seems likely to erode the professional's historic distinctiveness that helped to set them apart from other groups.

Another influence, pervasive in society as a whole rather than a specific influence upon the professions, is the idea of shifts towards reformed public attitudes towards authority and the givers of 'expert' advice. This claim is based upon a consideration of how social and cultural change (Giddens, 1991, pp.18-21; Keat, 1994) have influenced the individual's stance towards producers and providers of goods and services. These changes appear to have resulted in consumers using their own value-judgements to evaluate the services given. While this itself is not new, the important component of the change is the idea that the only authority consumers need to make judgements is their own and that their judgement is as valid as any other individual judgement, including that of the qualified professional who calls upon a body of complex knowledge in order to reach his or her decisions. Steady rises in public dissatisfaction with the running of the National Health Service (Judge, Mulligan and New, 1997) are bound to have an impact upon the attitudes of its employees towards the organisation, and possibly even upon their attitudes towards their occupations. Scepticism by consumers towards providers acts to overrule the provider's authority within the boundary of the service, in this case the market served by a profession, and it also alters the perception that people have of what is 'good' and, in doing so, affects the autonomy of providers (Keat, 1994, p.38). Concomitant with greater public willingness to question those traditionally empowered with some sort of specialist knowledge, is a trend which sees individuals, as consumers, becoming more knowledgeable and so altering the classic view of professionals providing services to an 'ignorant client base' (Hanlon, 1998, p.50). If these views are accepted, as being indicative

of changes to the professional world, then it follows that there will be discontinuities between the goals of professionals and those of organisations, including the state, as this can be seen as bringing about a loss of trust in the professions, at least, where they have not moved quickly to adopt and display the elements of commercialised professionalism.

#### 4.4.2.3 Professions in the Private Sector

Thus far we have explored the professional organisational linkage through a public sector context and yet, the private sector is also a major employer of professionals. While the guiding hand behind public sector change was intervention by government, the force behind private sector change has been competition which has brought about the reconfiguration of organisational environments shown in Table 4.1 and, it is argued here, have similarly altered the employee-organisation linkage. Both sectors have witnessed an increase in the levels of competition, albeit from different base levels, and private organisations have responded by seeking greater labour productivity and flexibility to the extent that flexibility became a watchword for managers (Hill, 1991). To explore this aspect further, the discussion focuses on scientific and technical professionals for the reasons that they are central to the success of modern, technology-driven, organisations which underpin economic growth through product innovation and the creation of new employment sectors such as the biotechnology industry (Carr, 1998; Walker and Southworth, 1996). A substantial literature has arisen in relation to those employed in scientific work (Badawy, 1982; Bommer and Jalajas, 1999; Kerr, von Glinow and Schreisheim, 1977; Kornhauser, 1962; Lant and Eisner, 1998; Pelz and Andrews, 1966; Randle, 1996) and, to focus the discussion further, I will concentrate on the pharmaceutical industry as it is a major employer of research and development (R&D) scientists.

Pharmaceutical manufacture is a global scale industry in which British firms are highly competitive and it is one of the UK's highest export revenue generators, making it one of the biggest contributors to the UK economy (DTI, 1998; Farrands, 1991). The sector has experienced considerable restructuring (Jones, 1996a) caused, in part, by the

transformation of government-funded health care markets directed at reducing public expenditure on drug purchases (Thayer, 1995). In the UK, restructuring includes the demerger of ICI's pharmaceutical and agribusinesses in 1993 to form a new company, Zeneca, (Owen and Harrison, 1995) and Zeneca's subsequent merger with the Swedish pharmaceutical company, Astra, in 1999. This, in-turn, has led to a management buy-out of AstraZeneca's Specialities division and the likelihood of further restructuring. Other corporate activity (Harrison, 1996; Taggart, 1993) includes the merger of Glaxo and Wellcome in the UK in 1995 and the aborted merger between GlaxoWellcome and Smith Kline Beecham in 1998 signalled continuing corporate intent to reduce operating costs with the inevitable consequence of creating uncertainty for those employed in research divisions (Reuben, 1998). The force behind restructuring is the pursuit of increasing shareholder value which, to be achieved, requires ongoing increases to corporate productivity. Two factors in particular confound productivity improvement in the pharmaceutical sector, namely, high costs and high levels of uncertainty surrounding the productivity of its research and development (R&D) scientists. In the USA, and the picture will be little different in the UK, the average time to take a new drug formulation to approval is 12 years. Less than 5% of development proposals lead to an application for drug testing and only 1 in 5000 'entities' (potential drug formulations) actually reaches the market (Lant and Eisner, 1998). About 15% of sales turnover is invested in research and development compared to an average of 1.8% for chemicals, 2.2% for engineering, 5.2% for health care companies (DTI, 1998). In 1996, the pharmaceutical sector accounted for 27% of all manufacturing R&D expenditure and 20% of all expenditure on R&D by UK businesses (Jones, 1998, p.61) and firms are under pressure to reduce costs and to accelerate the development of successful drug formulations (Bierly and Chakrabarti, 1996). The potential rewards are, even in corporate terms, immense as shown by the revenues from Glaxo's Zantac ulcer treatment alone which generated profits of over £700 million in 1995 (Ahmad, 1996).

Jones (1996b, pp.29-30), in a study of UK pharmaceutical companies, identified three factors that affect the organisation-employee linkage.

1. A change from personnel management to a more 'business-centred approach to employee relations'.

2. R&D was seen less as a core activity 'as senior managers begin to see R&D as another 'make or buy' decision', that is, through the use of short-term employment contracts and sub-contracting.

3. The use of multi-disciplinary teams to overcome blockages to creativity by maximising the use of organisational knowledge.

Other developments that directly affect the R&D scientist are new technologies which act to reduce development times in the early stages of molecular design and which make the process less labour intensive, job insecurity arising from the threat of future corporate restructuring (Blau, 1995), together with inter-company alliances and outsourcing of R&D which, in part, externalise the dependency for product development (Jones, 1996b, Webster and Swain, 1991). These, and other features of contemporary R&D management, led Randle (1996, p.739) to comment,

> The combined effects of the strategic responses made by companies to the nature and pace of change in the competitive environment surrounding pharmaceutical research must have a significant impact on the labour process of those employed as research scientists in the industry.

Following a study of human resource managers of technical professionals, Pemberton and Herriot (1993, p.24) commented,

> Since the boom of the mid-1980s, there have been major changes in the ways in which technical specialists are employed, organised, rewarded and promoted. Such changes suggest that the psychological contract..is also likely to have undergone profound change.

Dopson, Ruddle and Stewart, (1998) identified corporate activities that influence the professional-organisation linkage. Delayering was employed by organisations as a first step towards reducing costs but also to quicken response times to market needs. These flatter

structures were intended to assist the exploitation of the organisation's true capabilities including the full exploitation of R&D capability brought about by reorganisation, and in some cases, relocation, (Kuemmerle, 1997). Management's activities altered to emphasise greater co-ordination of teams working on different aspects of product development (Lant and Eisner, 1998; Pemberton and Herriot, 1992, 1993). Dopson et al (1998) emphasise that these changes were not just part of a game of 'catch-up'; they were moves directed at creating and sustaining internationally competitive organisations in the long term. It is necessary then to focus not on the changes themselves, but on what lies on the 'other side' in terms of employee attitudes and behaviours. In general terms, they identify a diminution of internal labour markets (career structures) and emphasise the mobility requirements of employees, which are linked to greater job insecurity, declines in morale, changed expectations concerning, 'loyalty, trust and commitment to its [the organisation's] interests'.

Lowe and Oliver (1991), however, provide some evidence that in high technology companies, insecurity does not necessarily lead to low commitment. One explanation for this is that people who show high commitment in an environment of high insecurity receive high rewards in comparison to others. In essence, their commitment is being bought and its purchase becomes the trade-off in the new psychological contract (see Table 4.2). For the bulk of scientific and technical professionals working in laboratories and on field-work, this seems an unlikely possibility. Furthermore, neither Dopson et al (1998) nor Lowe and Oliver (1991) elaborate on what they mean by commitment, providing further grounds for the research aims of this study. Randle (1996) also saw 'well paid' work in pharmaceutical research as an explanation for the white-coated professional accepting certain constraints being placed upon them, such as, restrictions on the publication of research. He also found that pressure to achieve project goals clashed with the professional's needs for autonomy, in that, while considerable autonomy may be given, the pressure to achieve corporate goals was so high that the professional's time could be spent on little else.

This is not to say that all R&D workplaces and all scientists have reacted in this way. Where change has been managed successfully then, by definition, commitment and related outcomes will be bolstered. For scientists aged below about 40 years, this 'new world' will be the only climate they have encountered and they will, unlike persons aged above 40, be unable to contrast it with a former, different, climate. The classic relationship between the specialist, notably the research scientist, and the organisation has been a 'relational' psychological contract in which loyalty is exchanged for intellectual freedom and freedom to build an external career reputation (Pemberton and Herriot, 1993). This relationship was tolerant of managerial shortcomings on the part of the specialist. Akin to the imposition of managerialism in the public sector, the revised psychological contract focuses upon the specialist's contribution to the commercial performance of the organisation and, for those who can deliver this contribution, greater financial reward.

What I am arguing here is that the work climate for R&D scientists has shifted and that the shift calls into question the notion of commitment as primarily being allegiance to corporate goals. This argument is made on the grounds that the scientist's role has become more complex through the need for increased networking and interaction, more pressurised through the need to reduce development cycle times, and, less certain because of the persistent threat of corporate restructuring. This is made important by the assumption that commitment is a key outcome in its own right and that it is an antecedent of both individual and corporate performance. While a global commitment to goals is a ubiquitous definition of commitment that translates into many things to many organisations, the organisational professional's role has become more individualised with the focus switching to the demonstration of continuing employability. Given the intensity of the scientist's job, and the shift towards the demonstration of individual worth, it is necessary to examine the characteristics of committed professionals in an effort to understand how commitment is operationalised.

## 4.5 SUMMARY

This chapter has argued that commitment is a critical component of human resource management strategies for knowledge-based organisations in particular. While strong associations between commitment and performance in the work place are not supported by empirical studies, more recent studies are exploring promising associations between commitment and citizenship behaviours. The chapter then demonstrated that 'something has happened out there' that has affected the relationship between the organisational professional and the organisation and this has been argued to be the case in two major employment sectors. The continuing transformation towards a service economy is increasing the number of service workers, many of whom are in occupations that aspire to professional status. While professionals have encountered less job loss than unskilled and semi-skilled workers, their traditional professional identity appears to be under pressure from a lack of trust from both employers and consumers. The psychological contract was used to reconceptualise the relationship between the employee and the organisation which has shifted to put more responsibility upon employees for maintaining their employability. The nature of commitment is implicit rather than explicit in much of the human resource management literature and a rationale was developed for re-examining the nature and form of organisational commitment in light of the reshaped contract.

Professionalism has become pressured by increased managerialism which has stipulated the type of performance that it wants, namely, the achievement of goals set more by management than by autonomous professionals. The literature on professionals also showed that commitment was a desired key outcome of strategic human resource management but, again, noted the absence of any clear explanation of what commitment means for organisational professionals in a climate of high managerialism. The 'black box' shown in Figure 3.1 is still unopened and its contents remain hidden from view. Yet the literature is clear that, whatever the form of commitment is, attacks on trust are thought to have put the professional's commitment to the organisation under pressure and could have increased the propensity to see commitment as a more instrumental, reciprocal construct. The pressure upon professionals to incorporate managerial practices into their roles, more

so than in the past, can be viewed as being at odds with classic professional ideology. The propositions put forward in this chapter are, for the most part, difficult to substantiate with extensive empirical research and so they remain at the level of fairly embryonic social theory. They cannot therefore be taken as social fact but they are offered here as aiding our understanding of the nature of the professions and the process of professionalisation in relation to bureaucracy.

Alongside the new employee relations, there has been renewed interest in the concept of professionalism as it is seen as an important component of organisational competitiveness as organisations seek to differentiate in markets and offer high levels of customer service. Although the classic, functionalist, approach to explaining the factors that set-apart professional groups has come under attack from a sociology discipline that is itself less cognisant of functionalism, (see Appendix B), it seems clear that post-industrial labour organisation is blurring the distinction between the professions and other occupations. However, one component of the professionalisation process, the development of a professional ideology (professionalism), is in demand as an ethos in which business transactions are conducted. Indeed, while there is a substantial literature dealing with the commitment of professionals, the relationship between commitment attitudes and behaviours and professionalism cognitions at the level of the individual has not been extensively studied. This, then, is a basis for exploring the relationship between professionalism and commitment and the next chapter looks in detail at a research design that draws together the three research questions; what is the nature and form of organisational commitment among organisational professionals (simply, what is it like to be a committed organisational professional), how can contemporary thinking about commitment be operationalised into a new measurement scale, and, how is the new form of commitment influenced by proximal variables in the current employment relations climate?

# PART 2

# THE RESEARCH STUDY

# CHAPTER 5

# RESEARCH DESIGN

## 5.1 INTRODUCTION

Part 2 of this thesis builds upon the previous review of commitment and employee relations by presenting an empirical study of commitment that is designed to extend knowledge of the construct. Chapters 6 to 8 present and review new empirical data on commitment, but first, in this chapter, the research design employed in the thesis is developed. Full explication of the design is necessary to strengthen claims for the validity of empirical findings and also to enable users of this research to reach their own views about that validity. The discussion is also necessary for those who may wish to undertake replicative studies of all or part of this research. This chapter begins with the development of a research model and nomological (theoretical) network that shaped the conduct of the study. The way each research question was operationalised is considered, thus rendering transparent how the propositions that were tested using multivariate techniques emerged from theoretical considerations. Construct validation techniques are summarised and the sampling frame adopted in the study is justified. In order to reassess commitment, a qualitative, interview-based study was first conducted to explore the meaning of commitment among professional employees in order to generate the content of a new scale to measure organisational commitment. This was followed by a multi-sample, cross-sectional, self-report survey spanning three professional groups to collect data appropriate for the purpose of theory testing and construct validation. Data were analysed principally with factor analytic techniques and multiple moderated regression. The procedures used to develop and pilot the new commitment scale are given and the measurement scales used in the main survey questionnaire are identified. Technical problems associated with the use of multiple moderated regression are reviewed in order to assist the design of the survey and the chapter ends by examining the limitations of this research approach including controversy over the use of self-report measures and the possible effects of method variance on results.

## 5.2 THE RESEARCH MODEL

In light of the high level of interest shown in the concept of organisational commitment, there have been many attempts to operationalise the construct with the bulk of the effort aimed at developing new scales taking place by the early 1980s. Since then, effort has gone into studies with the aim of examining evidence for construct validity (Brooke et al., 1988; Dunham et al., 1994; Hackett et al., 1994; Ko, Price and Mueller, 1997; Mathieu and Farr, 1991). Much of the early developmental work, however, resulted in short measurement scales created on the basis of their originators' deductive reasoning which were often accompanied by little reliability and validity data (for examples of these scales, see Cook and Wall, 1980, p.41 and Mowday et al., 1982, p.219). The most enduring measures of organisational commitment have overcome this objection with the publication of evidence for construct validity. (For evidence for the Organizational Commitment Questionnaire see Mowday et al., 1982; for the Affective Commitment Scale, see Allen and Meyer, 1990; Ko et al., 1997; Meyer et al., 1990, and for the British Organizational Commitment Scale, see Cook and Wall, 1980; Peccei and Guest, 1993).

However, even the popular models of commitment share a common characteristic and weakness that is evident in the original papers announcing their development. In all cases, the item content of the scales appears to have been derived solely from *a priori* theorising, that is, deductive reasoning based on the researchers' views of commitment. The Organizational Commitment Questionnaire stems from an unpublished University of California paper (Porter and Smith, 1970) and

> The approach to instrument development that was taken by Porter and Smith was to identify 15 items that appeared to tap the three aspects of our definition of commitment. (Mowday et al., 1982, p.220).

The first published paper that introduced the Organizational Commitment Questionnaire states only that,

> This 15 item questionnaire was designed to measure the degree to which subjects felt committed to their organization (Porter et al., 1974, p.605).

There is no evidence in these papers that the content of the OCQ was based on anything other than the originators' intuition. Cook and Wall (1980) adapted existing definitions of commitment to arrive at a more meaningful definition to apply to British blue-collar employees but, in regard to the item content of their British Organizational Commitment Scale,

> The items for all [the] scales were generated afresh by the authors. (Cook and Wall, 1980, p.42).

Allen and Meyer (1990), in their account of the development of Affective, Normative and Continuance commitment scales, reveal only that,

> A pool of 51 items was generated for purposes of scale construction. Some of these items were modified versions of those used in other scales; others were written by the authors. Each item was worded in accordance with one of the [three] conceptualisations of commitment. (Allen and Meyer, 1990, p.5)

These comments from the original sources reveal that none of these popular scales was initially grounded in research on commitment as it was expressed and felt by the people that the scales were later used to study. This observation, coupled with the foregoing argument concerning significant changes to the psychological contract, points to a need for fresh conceptualisations of commitment that take account of the views of intended occupational groups before scale items are written. The first research objective and question, 'what is the nature and form of organisational commitment among organisational professionals', therefore, calls for a qualitative study in preference to further *a priori* scale development.

The second research objective concerning the construction of a new, and more apposite, measurement scale requires that the qualitative information obtained is condensed into a

set of items that can be developed and tested in accordance with classical construct validation techniques (see Hinkin, 1998). However, while measurement scales may show good face validity, that is, their item content appears to relate to a construct as it is understood to exist, it is necessary to seek robust evidence for construct validity. This typically involves the assessment of predictive validity in which the new construct is related to other variables and the predicted relationships among them are tested. Thus, it is possible to explore the third objective concerning the effects of other variables (such as reciprocity and professional ideology) on commitment as part of the construct validation process through the testing of logical theoretical propositions that incorporate the constructs of interest.

The third research objective is too broad to be answered fully within the scope and limitations of a single thesis and so it was necessary to derive a set of manageable questions that could be tested and which cast light upon the wider context. From the foregoing discussion concerning reciprocity and exchange theory, in the context of organisational professionals, logical and testable questions arising which will help explore the objective are

- What is the extent of the reciprocal nature of organisational commitment among organisational professionals?
- To what extent is organisational commitment related to professional ideology?
- How does professional ideology affect the reciprocal basis of commitment?

This research has, therefore, proceeded in two stages. Firstly, a qualitative study was conducted to understand 'what commitment means' to organisational professionals and which led to the drafting and piloting of a new measurement scale. The second stage was a quantitative validation study in which the new scale was administered to a sample of organisational professionals alongside existing scales that measure other variables.

The quantitative study consisted of two distinct phases. The first phase involved an assessment of the distinctiveness of the new commitment scale's psychometric properties using factor analytic techniques and a preliminary assessment of criterion-related validity. The second phase aimed to explore and interpret a nomological (theoretical) network for the new measure of commitment. That is, to see how the commitment of organisational professionals is influenced by some of the key variables to which it can logically be connected. This second phase fulfils the dual role of providing robust evidence for the validity of the new commitment scale and also of beginning an account of the factors to which post-industrial commitment is related. As the variables of interest are being examined in support of a construct validation study, I have used the term 'proposition' rather than 'hypothesis' to describe the substantive relationships among variables arising from theoretical considerations. The reason for this is that the relationships among variables tested represent a set of thoughts, based on theory, that is taken from a potentially limitless array of relationships. Thus, I prefer to see them as my propositions that help to evaluate a new way of looking at organisational commitment. Although the propositions are hypotheses, I feel that the term 'hypotheses' is better used to describe more substantial concepts in natural and social science that cannot readily be resolved with empirical data and which remain as hypotheses until advances in theory or empirical method permit their revision.

## 5.3 AN APPROACH TO CONSTRUCT VALIDATION

The demonstration of construct validity ranks among the most problematic and challenging requirements for the researcher who chooses to measure an abstract concept such as commitment. Put simply, construct validity deals with the question, 'how can we be sure that we are measuring what we think we are measuring?' Much research in organisational science uses measurement instruments for which construct validity has already been demonstrated and this survey employs a number of such instruments. However, the rationale for this study includes a general dissatisfaction with existing measures of organisational commitment and it is necessary, therefore, to undertake a construct

validation study of a new measure of commitment. The processes of construct validation are well documented (Cronbach and Meehl, 1955; Hinkin, 1998; Kerlinger, 1964; Schwab, 1980) and, following the schema provided in Hinkin's (1998) review, typically involves:

-generation of an item pool by *a prioi* reasoning or empirical study;
-piloting of a questionnaire containing the new items;
-item deletion and modification to produce a revised set of items;
-psychometric evaluation of the revised set involving reliability and factor analysis;
-demonstration of convergent, discriminant and criterion-related validity; and,
-replication studies to strengthen evidence for construct validity.

Convergent validity relates to a construct's ability to converge (associate) with similar constructs for which convergence is predicted by theory. Discriminant validity concerns the ability to disassociate from other constructs. Criterion-related validity concerns the ability of a construct to associate in theory-driven directions with a range of other variables (Hinkin, 1998, p.115).

### 5.3.1 Item Generation

The approach followed in this study involved asking a sample of organisational professionals to provide descriptions of committed employees together with a wider picture of factors influencing commitment. These descriptions were then analysed and categorised and potential scale items were written that aimed to capture the espoused concepts. Clearly, it was important that the respondents involved in such a study should be knowledgeable about the construct in question and details of the sample and the item generation process used in this study are given in section 5.5 and chapter 6.

### 5.3.2 Item Scaling

An important consideration for the designer of measurement instruments concerns the choice of scaling technique. Likert-type scales were used in this survey for two reasons. Firstly, most previous work on commitment has used Likert scales including the Organizational Commitment Questionnaire and the Affective Commitment Scale which have dominated commitment research. The use of Likert scaling facilitates direct comparisons between the new instrument and other attitude scales that will be used. Secondly, although alternative scaling methods exist, such as the semantic differential and forced-choice responses, there is no strong case to be made that they would improve the utility of research results.

### 5.3.3 Quantitative Analysis

Quantitative techniques to assist construct validation typically include the calculation of internal consistency reliability (e.g. Cronbach's alpha), time-lagged correlational analysis to assess stability, exploratory factor analysis and confirmatory factor analysis (Hinkin, 1998). Further techniques may be employed in the assessment of convergent, discriminant and criterion-related validity as appropriate to the particular study. This study has additionally employed multiple moderated regression (MMR) to assess the moderating effects (interaction effects) of several variables upon commitment in addition to reliability and factor analysis.

### 5.3.4 The Development of a Nomological Network

The third objective of this research called for an exploration of the new measurement scale's association with other measures of commitment and with other variables for which theoretical links to commitment can be made. This approach should fulfil the dual aims of construct validation and of improving our understanding of organisational commitment in

relation to its location in a set of variables that have not previously been studied. It is necessary to show that the new scale is distinguishable from other measures of work commitment and that it relates to other variables (criteria) in a theoretically-consistent manner. The classic approach is to generate a set of hypotheses describing the expected associations between the variables and then to examine these associations under the headings of convergent, discriminant and criterion-related validity (Hinkin, 1998). Consistent with this approach, the propositions used to assess overall construct validity are given below (results are given in section 8.5).

In construct validation studies, it is usual to relate the new measure to existing measures of the same construct. This is because measures of the same construct, albeit conceptualised differently, should correlate more strongly with each other than with other variables. Hence, proposition P1a.

P1a *The New Organisational Commitment Scale (NEWOCS) will correlate more strongly with other measures of commitment than with other variables.*

Previous studies (see Table 3.5) have consistently shown that commitment increases with age. The reasons for this are not fully understood and the effect is probably linked to organisational tenure, since tenure and age are often associated. It is possible that employees need to experience an organisation for at least several years before their commitment to it increases to relatively high levels, or, that older persons, in retrospect, develop positive thoughts about the organisation they work for. In addition, given the expected link between age and tenure, and if it is accepted that quitting is a predictable outcome of low commitment, then it becomes somewhat self-fulfilling that people with longer tenure, and who tend to be older, will be those who are more committed to the organisation. Even though the new commitment scale was expected to differ from existing measures, it was nevertheless worthwhile to test its association with age. Hence,

P1b *NEWOCS will correlate weakly and positively with age.*

One of the general findings from the review of previous antecedent studies (chapter 3) was that phenomena that employees would typically see as desirable and attractive tend to show at least moderate correlations with commitment. In particular, high correlations with perceived organisational support were noted and were explained using reciprocity theory, that is, that commitment is given in response to a general perception of commitment to the individual seen to be emanating from the organisation. This two-way commitment was argued to have been amplified by the 'new employee relations'. Hence,

P1c *NEWOCS will show a moderate to strong positive correlation with perceived organisational support.*

When employees feel unable to leave an organisation for accumulated economic reasons or through the scarcity of alternatives, they tend to have negative views towards the organisation's goals and values (Hackett et al., 1994) and with constructive behaviours (Konovsky and Cropanzano, 1991; Meyer et al., 1989). The reasons for this are unclear and several factors may be of influence. If the trapped employees develop a mindset that little they can do will alter the situation, then variation in attitudes and performance is one possible way that the organisation-employee linkage is equalised consistent with reciprocity theory and dissonance theory (see chapter 3). If employees feel that they have 'given their best' to the organisation then their performance could tend towards average. Compounding this, if perceptions of entrapment coincide with negative 'I don't want to be here any more' feelings then performance could fall through a preoccupation with effort directed at locating another role. In order to adjust to the perceived entrapment situation, attitudes and behaviours may adjust to equate what employees give to the organisation with what they perceive as their relationship with the organisation. Hence,

P1d *NEWOCS will show weak to moderate negative correlation with Continuance Commitment.*

Membership of a profession is hard-earned and, notwithstanding attacks on the professions (chapter 4), it is reasonable to expect that professionals will enjoy the social status that

membership confers upon them (Gunz and Gunz, 1994, p.806). It follows then, that professionals will be alert to the extent to which the organisation also respects their professional status as judged through rewards and support to staff. Thus, if organisational professionals believe that 'better' prestige and rewards go to other occupational groups in the organisation, then this would be interpreted as derecognition of any special status and, other things being equal, will diminish their organisational commitment. Hence

P1e *NEWOCS will show a negative correlation with perceived prestige (that is, when respondents perceive that rewards and prestige go outside their department).*

Another problem area for the organisational professional, and, in particular, the technical specialist, is career advancement. Technical careers, in the UK and the USA at least, appear to coincide with a high incidence of career entrapment, that is, in which the specialist is unable to progress into managerial positions, because there are fewer of them, or if they wish to pursue technical work then the scope to break through a salary ceiling is low. Even though the notion of career is changing (see chapter 4), it is still reasonable to expect that where employees see limited scope to advance their career (or their future employability), this will have the effect of diminishing their commitment. Hence

P1f *NEWOCS will show a negative correlation with perceptions of limited career advancement.*

Turning now to professionalism, this can be viewed as a professional ideology, that is, the level of conformance to a set of professional values. There is no overarching reason why a person who displays high professional values should necessarily adhere strongly to a set of organisational goals and this is the core of the Local-Cosmopolitan distinction (Gouldner, 1957). However, it appears that professional values (including professional commitment) and organisational commitment can co-occur (see chapter 3). Part of the professional's role is to display professional attitudes and behaviours and, to a point, this includes showing support to the recipient of the services being provided, in this case the organisation. The requirement to display at least a neutral affect towards the recipient may

lead to internalisation of its goals and values and this is more likely when the professional has had to make such support explicit. This could arise as a consequence of participation in work-based teams that are formed for the purpose of knowledge management or through contact with the organisation's supplier and customer networks. Even though the new form of commitment remains to be uncovered, it is proposed here that commitment will be positively influenced by professional ideology. Hence,

P1g *NEWOCS will show a moderate positive correlation with professionalism.*

Propositions P1a to P1g represent the first phase of an attempt to refine a new commitment measure. In an effort to provide a finer-grained test of criterion-related validity, this study examined interaction (moderator) effects among a set of variables that operationalised reciprocity and professional ideology. Consistent with the norm of reciprocity, it was anticipated that commitment would correlate positively, and strongly, with a construct that captures employees' views of the organisation's commitment to them (P1c). The norm also maintains that individuals differ in their social exchange ideology and that this ideology negatively influences commitment (Eisenberger et al., 1986). Social exchange ideology is considered here to be an aspect of personality and is assumed to remain stable in the short-term at least. Thus, it is unlikely that commitment to an organisation could affect an individual's exchange disposition and more likely that exchange disposition would influence commitment.

A social exchange explanation of commitment would maintain that perceptions of fairness and support from the organisation have an important influence upon the giving of commitment and related constructs such as citizenship behaviours (Eisenberger et al., 1987, 1990; Organ, 1988; Shore and Wayne, 1993). In general, so long as individuals continually sense organisational support, then they will not overtly focus on the receipt of agreed economic rewards for the organisation in return for particular committing outcomes. However, people who have a high social exchange outlook will see the relationship in terms of more tightly defined exchanges and may use the tangible derivatives that arise from the organisation's support to them as a 'payment' that justifies

the expression of high commitment. Thus, for high social exchange individuals, the perceived withdrawal of support by the organisation would lead to a diminution of commitment, whereas for low exchange individuals, the impact of a reduction in perceived support will be much less.

Exchange theory shares ground with equity theory (Adams, 1965; Festinger, 1957) and has recently resurfaced as a theoretical basis for research in the general field of organisational justice (see O'Neill and Mone, 1998). Exchange theory also appears to have high power to explain the new career discourse noted above if it is accepted that, under the 'new' psychological contract, the responsibility for a career lies firmly with the employee (Adamson, Doherty and Viney, 1998, pp.251-252). Eisenberger et al., (1987) considered that individuals have either a creditor or debtor ideology depending upon their predisposition towards giving and taking to and from social exchange situations. Likewise, O'Neill and Mone (1998, p.806) class people who prefer to donate to situations as 'givers', and those who prefer to receive more than they donate as the 'entitled'. It follows, therefore, that employees who have high social exchange cognitions (the debtors and the entitled) will give their commitment more freely when, and if, they perceive support issuing to them from the organisation. In the absence of perceived support, then theory would predict that their commitment will be restrained. The proposition arising here is that perceptions of support will influence commitment and that perceptions can be treated as an antecedent (independent) variable. Furthermore, as perceived support increases, so does commitment and the influence of support is stronger for individuals with high exchange ideology (after Eisenberger et al., 1986, 1990). Hence, the question concerning the extent of the reciprocal nature of organisational commitment among organisational professionals can be examined through the proposition,

P2. *Perceived organisational support will moderate the relationship between social exchange and organisational commitment.*

Given the range of experiences of work that a large and diverse sample will have, it is also worthwhile to look for factors and situations that could amplify the moderating effects

proposed in Proposition 2. Dooley, Rook and Catalano (1987) found that perceived job insecurity was the single most important predictor of psychological states such as depression and stress-related states. Job insecurity becomes a more salient issue for persons who have previously lost a job (Fineman, 1983) and downsizing has been linked to reductions in commitment (Brockner, 1988; Brockner, Grover, Reed, DeWitt and O'Malley, 1987). For persons with a high social exchange disposition, the relationship between perceived organisational support and commitment would be expected to be stronger when such persons have previously been affected by job loss. Therefore,

P2a *The moderating effects of perceived support on social exchange will be stronger for people who have experienced involuntary job change than for those who have not.*

Further influences upon work attitudes, including commitment, come from the individual's career stage (see Jans, 1989). Career theory assumes that individuals progress through distinct career stages and that each stage is characterised by different work attitudes and behaviour (Bedian, Pizzolatto, Long and Griffeth, 1991, p.153). Although there is no universally accepted model of career stage, such models that are used typically involve an establishment phase where tenure is less than about 2 years, an advancement stage where tenure is from 2 to 10 years, and a maintenance stage when tenure is above 10 years. It is consistent with the discussion in chapter 4 that the notion of a career has been redefined (Adamson et al., 1998) as long tenure with one organisation can no longer anticipated and is being replaced with both hierarchical and lateral movement and a broader span of job functions. Nevertheless, many employees maintain tenure with organisations and it is appropriate to examine how tenure influences the reciprocal nature of commitment.

Recalling the four bases of commitment (affective, continuance, normative and behavioural), in the early tenure stage, employees will have accumulated little in the way of high economic and social exit barriers from an organisation nor will they have developed linkages predicted largely upon overt behavioural acts to the same extent as longer tenure employees. Their commitment is more likely to be predicated upon

psychological linkages (Reichers, 1986, p.513). In the early career stage, the expectations put upon organisations by highly educated employees are high (Mabey, 1986; Meyer and Allen, 1988) and the confirmation of these expectations is an important predictor of organisational commitment. During this period, commitment appears particularly vulnerable to perceptions of organisational dependability, that is, the organisation's ability to live up to the commitments it has made to the individual (Meyer and Allen, 1988, p.205). The relationship between commitment and dependability (a reciprocal relationship) should be higher for employees with high social exchange cognitions and exchange would therefore moderate the relationship between levels of organisational support for the individual and their commitment. Hence,

P2b *The moderating effects of perceived support on social exchange will be stronger for people with low tenure.*

In addition to exchange and support, the other key variable invoked by the third objective and the research questions deriving from it, is the individual's professionalism, that is, an overall identification with a professional ideology. This is a trait that evolves during professional training and which has its foundations in earlier socialisation events such as family relationships or schooling. Professionalism is capable of continual development and it seems unlikely that variations in the levels of commitment shown to an organisation would affect the professionalism shown by an employee. A pathway from commitment to professionalism cannot be ruled out, however, as an employee who loses commitment could allow that change to translate into lower concern for clients. Nevertheless, in simple terms, attitudinal commitment is held to be the extent of belief in an organisation's goals whereas professionalism, in contrast, is rooted in beliefs towards professional values and concerns the way in which employees approach and carry out their work, rather than how they feel or what they do. It is argued here that the very essence of professionalism, such as a concern for the maintenance of standards, would intervene to minimise any possible negative effects that low commitment would have upon a particular focus.

Among the constituents of professionalism, autonomy in decision-making, lack of self-interest and emotion, and collegial maintenance of standards, point towards rational thinking. Collectively, they sum-up what Pellegrin (1976, p.349) called 'affective neutrality' and Harries-Jenkins' (1970, p.99) view that the personal interests of professionals are 'subordinated' to the organisation. This neutrality is theorised here to bolster commitment when individual's perceive adverse situational variables, as might occur following perceptions of low organisational support. Neutrality is thought to intervene between the organisational situation and the commitment outcomes to suppress cognitions that would depress commitment. This buffering mechanism should be absent in individuals with low professionalism who would, if the theory holds, have low neutrality. Howell and Dorfman's (1986) findings support this theory as they concluded that, for medical and scientific professionals, professionalism is an important moderator variable in research on their attitudes towards leadership requirements. Mathieu and Hamel (1989, p.313) found that professionals had greater immunity against the negative effects of role strain than non-professionals and an explanation for this may lie in aspects of professionalism, such as control over emotions. Morris, Steers and Koch (1979) found that variables including work group size, span of subordination and dependency on others, influenced role conflict and ambiguity less so in professionals (N=55, university non-teaching staff) than in secretaries. They noted (p.68)

> For these professionals, roles may be too contingency laden for static anatomical properties of the work setting to forestall uncertainties and conflicts about role expectations.

Given that people have different capacities to tolerate dissonance (Festinger, 1957, p.266), an explanation for the differing tolerance levels of professionals is that their professionalism intervenes between dissonance-causing elements, for example, between the professionals' allegiance their profession and an organisation's subcontracting of professional services. Thus, it is further proposed that, like perceived support, professionalism will also moderate the relationship between social exchange disposition and commitment. That is, employees with high professionalism cognitions can show high commitment even when they have a high social exchange outlook. Individuals with low

professionalism cognitions are more likely to show low commitment when perceived support is low. Hence, the questions concerning the relationship between organisational commitment and professional ideology and, how professional ideology affects the reciprocal basis of commitment, can be examined through the following proposition.

P3 *Professionalism moderates the relationship between social exchange and organisational commitment.*

The discussion above has argued that organisational commitment is particularly vulnerable among employees of low tenure. Professionalism, through its concern for objectivity and neutrality, appears to be a moderator of psychological or situational variables that, in general, have negative influences upon commitment. Therefore, extending the rationale for proposition P2, professionalism should also have a moderating influence on commitment and the following propositions, which mirror P2a and P2b are advanced.

P3a *The moderating effects of professionalism on social exchange will be stronger for people who have experienced involuntary job change than for those who have not.*

P3b *The moderating effects of professionalism on social exchange will be stronger for people with low tenure.*

An additional negative influence on commitment is job insecurity (Ashford, Lee and Bobko, 1989) and this was expected to be a highly proximal variable for many employees at the time this research was conducted. As such, it would be a test of the limits of the moderating influence of professionalism to assess its impact upon insecurity. Hence,

P4 *Professionalism moderates the relationship between job insecurity and organisational commitment.*

Lastly, extending the argument above about the negative influence of exit barriers on attitudinal commitment and performance, a further test of the limits of professionalism as

a moderator will be to explore its ability to offset the influence of continuance commitment. Hence,

P5 *Professionalism moderates the relationship between continuance commitment and organisational commitment.*

The propositions P2 to P5, and their derivatives, had not been examined in the literature at the time this survey was being planned. The proposed mediating effect of professionalism on commitment (P3) is shown in Table 5.1 below. Professionalism is ranked from high to low on the vertical scale, and social exchange from high to low on the horizontal scale. When exchange is low, commitment should be at least moderate at low levels of professionalism. When professionalism and exchange are both moderate then commitment will be moderate. When exchange is high and professionalism is low, then commitment will be low. Social exchange cognitions will retard the development of commitment when professionalism is high. A similar pattern is postulated to exist for the theorised support-exchange interactions.

**Table 5.1. Commitment as a function of social exchange and professionalism (P2)**

| | **High Exchange** | **Moderate Exchange** | **Low Exchange** |
|---|---|---|---|
| High Professionalism | Mod/High | High | High |
| Moderate Professionalism | Moderate | Moderate | High |
| Low Professionalism | Low | Low | Moderate |

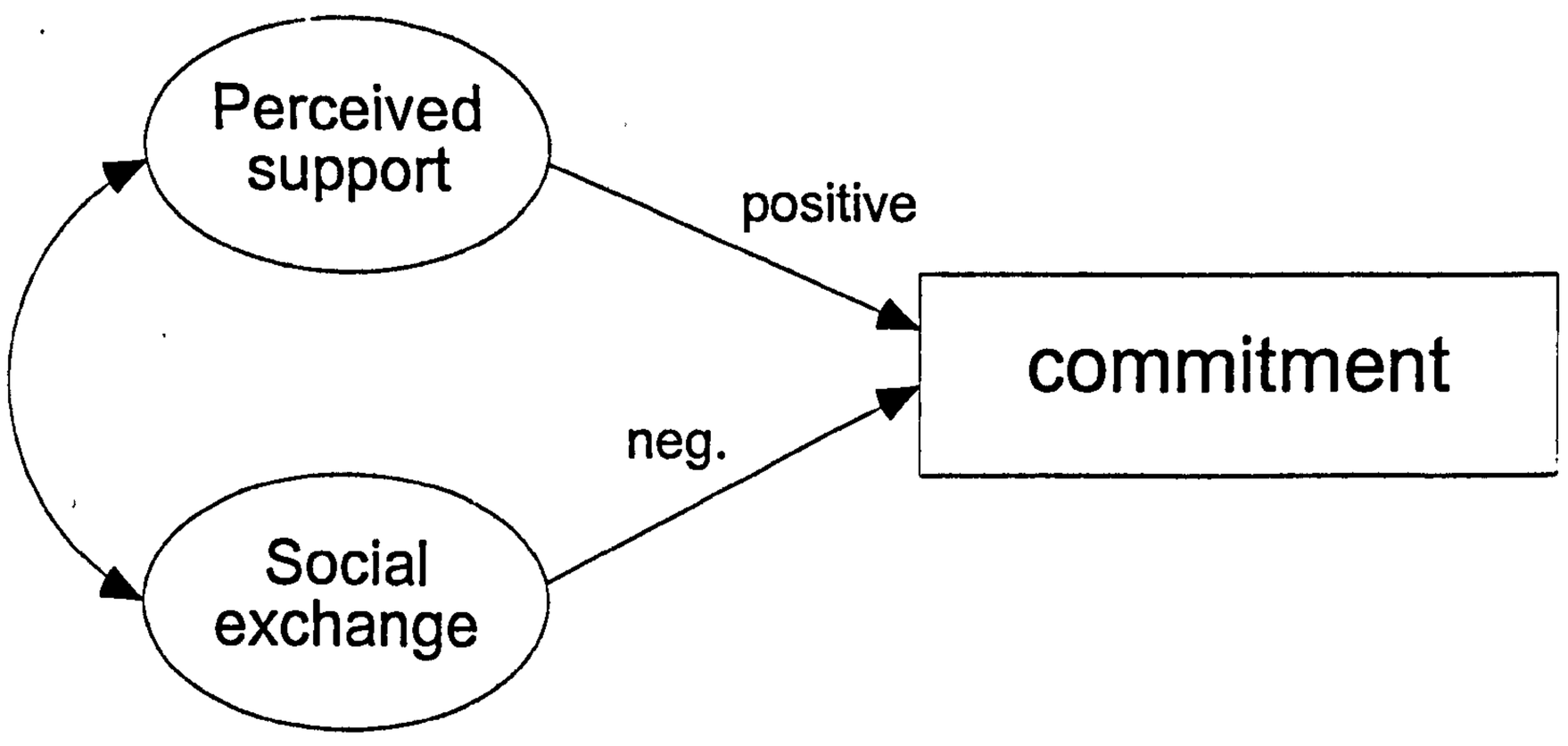
The different analytical methods used to assess the different research objectives and questions in this study are summarised in Table 5.2.

**Table 5.2 Principal analytical techniques**

| Stage | Question/Proposition | Principal Techniques |
|---|---|---|
| Exploration of commitment | Q1 | Interviews with managers of professionals |
| Item generation | Q1 | Thematic interpretation of interview data |
| Data screening | Q2 | Regression diagnostics, stepwise regression, factor analysis, reliability, correlation. |
| Psychometric evaluation of the new scale | Q2 | Factor analysis, reliability |
| Criterion-related validity (phase 1) | Q3, P1a-P1f | Correlation |
| Criterion-related validity (phase 2) | Q3, P2, P3a-P3c, P4, P5 | Multiple moderated regression, structural equation modelling |

An example of an interaction effect as proposed above is illustrated in Figure 5.1. In the unmoderated model, perceived support has a positive main effect and social exchange has a negative main effect upon commitment. In the moderated model, the interaction term has a theorised positive effect upon commitment. The theoretical model underpinning the study is shown in Figure 5.2 in which each of the proposed interactions (P2 to P5) are represented by solid lines.$\beta_2$ to $\beta_5$ represent theorised positive paths to commitment. $\beta_6$ to $\beta_8$ represent theorised negative main effects.

Fig. 5.1 Unmoderated and moderated regression models for perceived organisational support and social exchange interaction. (Identical models are proposed for professionalism interactions)



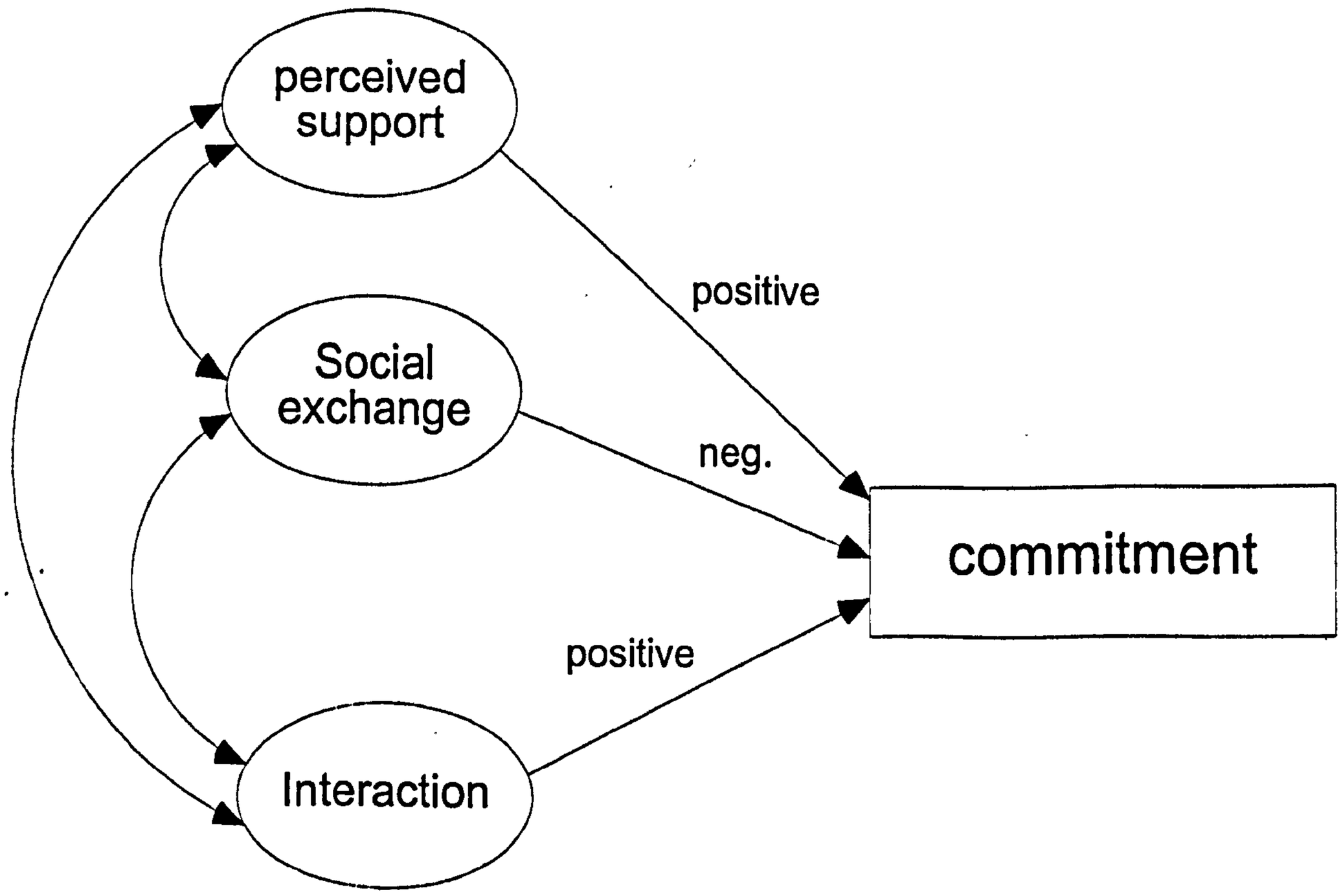
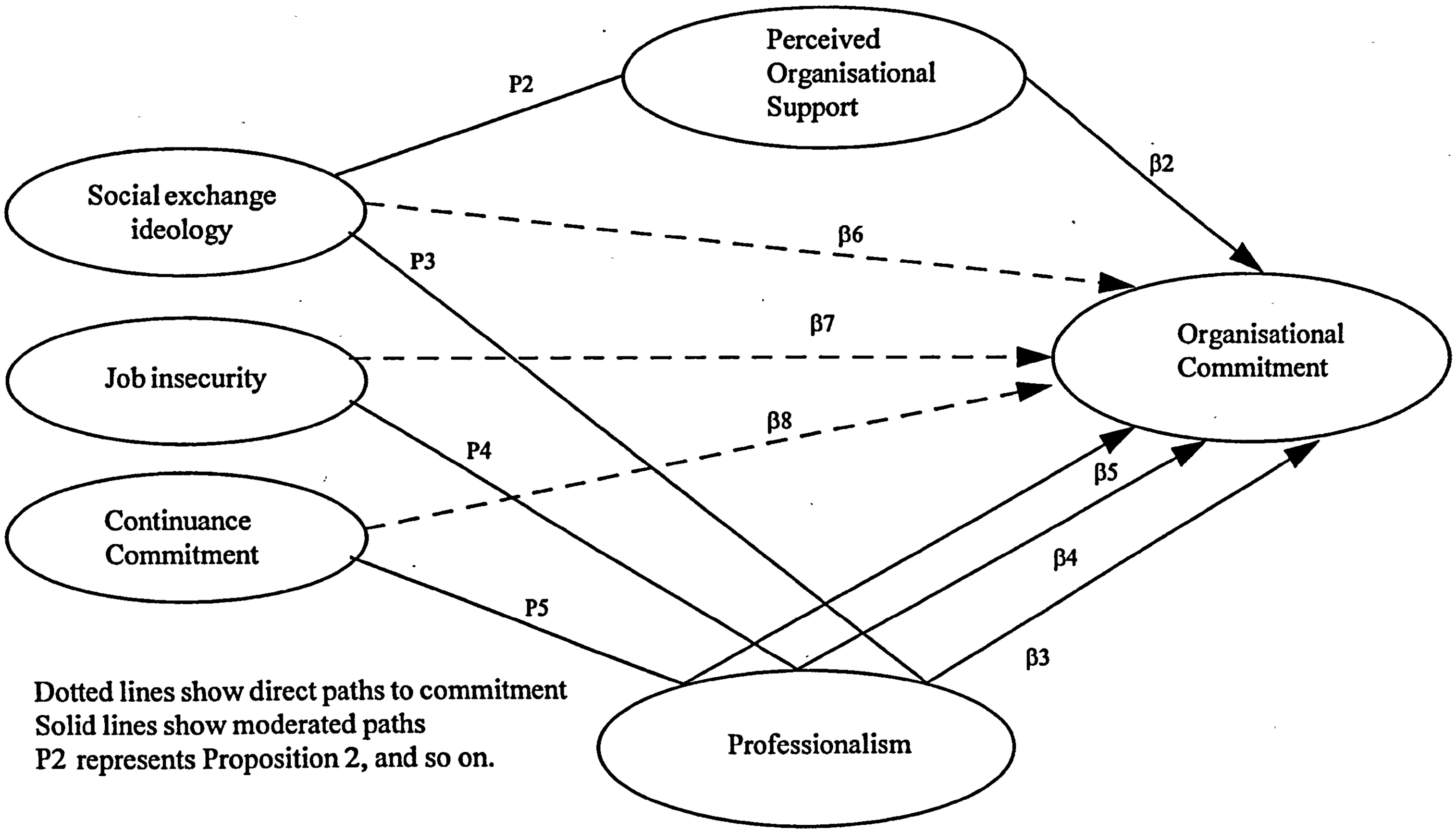



**Figure 5.2 The Theoretical Model for this Study**



## 5.4 THE CHOICE OF SAMPLE

### 5.4.1 Determining the Sample Domain

The choice of sample domain was by no means straightforward in this study as one of the characteristics of commitment research has been the diversity of populations from which samples have been taken. Many studies have been conducted upon samples of mixed employees, that is, across diverse occupational groups in one or more organisations, (Fletcher and Williams, 1996; Florkowski and Schuster, 1992; Palich, Hom and Griffeth, 1995). The other main sampling strategy has been to access members of distinct occupational groups but drawn from a range of organisations (see Gunz and Gunz, 1994). The third main approach has been to focus upon and sample an occupational group or groups within one or more organisations (eg. Becker, Randall and Reigel, 1995; Benson, 1998; Campbell, Campbell and Kennard, 1994; Pearson and Chong, 1997).

Furthermore, common commitment scales (largely the Organizational Commitment Questionnaire, the Affective Commitment Scale and the British Organizational Commitment Scale) have been used across a range of occupational groups including nurses (Pearson and Chong, 1997),. receptionists and secretaries (Campbell et al., 1994) maintenance engineers (Benson, 1998), supervisors and managers (Palich et al., 1995) and restaurant workers (Becker et al., 1995). Given the widely adopted definition of commitment as 'the strength of an individual's attachment with and involvement in a particular organisation' (Porter et al., 1974, p.604), it is reasonable to apply this definition across diverse samples and organisations. Yet, in a reassessment of this definition, the main purpose of this thesis, it is important to control for the possibility that the definition could have different meanings among different occupational groups and this raises the question of which occupational group(s) should be sampled in this study.

The sample had to include groups whose professional status could be demonstrated. Given the previous discussion and the rationale for the variables contained in testable propositions, it would not be appropriate to take a sample of independent/liberal

professionals as they would, by definition, work independently or in professional practice, quite often in small practice partnerships. In order to sample a work environment in which perceived organisational support, in particular, could be meaningfully assessed it was necessary to devise samples of professionals who are employed in bureaucratic organisations. Another consideration was the relative 'purity' of the samples obtained. Sampling strategies could have been devised that overlooked the potential dangers of mixing professional groups in one sample. For instance, a survey of professionals in a single organisation would most likely combine many different professions. It is important for this research to acknowledge that broad personality differences can, and do, exist between occupational groups, e.g. between scientists and engineers (Allen, 1988; Keller, 1997; Kerr et al., 1977; Ritti, 1968). It was desirable, therefore, at the sampling stage to obtain clear and distinct groups for the quantitative test of the instrumentation.

### 5.4.2 Determining a Sampling Strategy

To examine propositions 1 to 5 a substantial quantitative survey was necessary, yet it is neither possible to identify the population of professionals, nor of organisations that employ professionals, such that the population can be sampled in a random way. However, this is a general problem in organisational research, much of which does not attempt to obtain random samples of organisations or employees. In practice, this limitation is addressed by the replication of similar research designs across diverse organisations in order to assess the generalisability of findings.

A number of possibilities presented themselves. First, it is possible to conduct a single survey in one organisation and this has the advantage of effectively holding constant diverse environmental variables for the sample surveyed. Several professions could be surveyed in one organisation and it would be possible to elaborate the findings of the survey with participants in their organisational setting. However, one problem with a single site survey is that the amount of variation among the variables examined might be small (Mathieu and Zajac, 1990, p.191). For example, if all subjects in a sample report high

organisational support, the potential for meaningful correlation of support with commitment is weak. Similarly, if a workforce expresses high commitment at the time of a survey then the amount of variation in commitment would be small. Another problem arising from single site surveys which use personal variables as moderators stems from the 'selected setting' hypothesis (Schneider, 1983, p.9). This maintains that people stay in organisations that somehow match their personal disposition and hence studies in single sites fail to capture sufficient diversity on variables of interest. This is an acute problem when one of these personality variables is assumed to be a moderator variable (Schneider, 1983, p.17). Thus it is important to obtain a good spread of responses particularly on the moderator (interaction) variables if the effects are to be observed (Stone, 1990, p.179).

Two other disadvantages of research conducted on a small number of sites are that participants could suspect an organisation's motives for allowing the survey leading to misrepresentation of their true feelings and it would be difficult to achieve a large enough sample from one organisation. Unless a very large and co-operative organisation was found, therefore, it would be necessary to seek samples from several organisations in order to ensure that some variation in the variables of interest occurs and to achieve a large enough sample in total. Macro-environmental variables would be controlled if the organisations operated in the same sector. Within one sector, it would be possible to either survey one profession or to survey several professions. This study has taken the latter approach and surveyed two professions in diverse organisations in two sectors. The benefit of this was the provision of high levels of variation in the key variables which supports generalisations from the findings. A refinement of this approach, however, involves surveying the membership of different professional bodies. The attraction of this, apart from the potential for achieving a large sample size, is that there is no connection between the survey and an employer. Furthermore, high variation would be expected in the key variables given that the sample would be drawn from the employees of a large number of organisations. A disadvantage of the approach is that the specific human relations climate of an organisation cannot be assessed, although it is possible to assess general trends affecting a particular profession. For these reasons, the membership of three professional bodies was sampled.

### 5.4.3 Choice of Sampling Frame

The choice of sampling frame for this survey was not straightforward and required the development of a procedure for evaluating the degree of professionalisation of possible sample groups before sampling decisions could be made. The procedure did not aim to show whether or not an occupation is a profession, which oversimplifies the complexity of the process of professionalisation (Macdonald, 1995, p.6), but to demonstrate that the sample groups selected consider themselves to be professional people and so become legitimate samples for this study. The sample taken needed to contain organisational professionals, rather than independent or high-status professionals, and the sectors involved would need to have experienced turbulence and dynamism as a backdrop to reassessing commitment and the subsequently exploration of its nomological net. In addition, the sample needed to be of sufficient size to satisfy certain statistical criteria (see section 5.6) and, in construct validation studies, it is usual to assess reliability and factor structure across more than one sample. Thus, the option of obtaining one large sample was rejected in favour of a sample that involved two professional groups and two employment sectors that covered both private and public ownership. Consistent with the discussion in chapter 4, the private sector chosen was pharmaceutical manufacture and research. Chemists were chosen to represent scientific professionals working in the sector. The complexity of the body of knowledge is high and chemists may be working at the frontier of the subject generating new knowledge through research and development. The perceived criticality of knowledge to social welfare is high in some disciplines such as pharmaceutical research and development.

The public sector chosen was local government as this has also witnessed extensive corporate activity and change through initiatives such as compulsory competitive tendering, unification of authorities and, lately, 'best value'. Managerialism has impacted upon local government (Exworthy and Halford, 1999; Keen and Scase, 1996; Pollitt, 1993) and the sector is a suitable arena in which to explore the research questions posed for this study because of its turbulent environment. The second profession selected was

Accountancy which has a clear body of knowledge, well-established professional bodies with well-defined examination entry requirements. Accountancy, as a knowledge-applying profession, provides a contrast to R&D scientists and the distinctiveness of accountants has caused them to be the focus of several studies of commitment (Aranya and Ferris, 1983; Aranya, Pollock and Amernic, 1981; Brierley, 1996; Lachman and Aranya, 1986; Morrow and Goetz, 1988). In addition, through the nature of their work, accountants are more likely to be associated with managerial tasks than R&D scientists, and it was considered that this distinction might reveal some interesting differences in the research findings. Both chemistry and accountancy are, by most standards, accepted as mature professions, unlike other occupations that are less professionalised, and both are served by several professional bodies creating a large membership base overall. Typical activities of the members of the three professional groups studied are given in Appendix C.

By constructing a sample involving two professions and two sectors, a robust test of the new instrument and the proposed moderator effects is provided as relationships among variables can be tested:

- on chemists and accountants in the pharmaceutical sector;
- on accountants in the public and pharmaceutical sectors; and,
- for the entire data set if the descriptive statistics for each sample group show that it is legitimate to aggregate the samples.

For the purposes of an exploratory, qualitative study to explore the meaning of commitment among professionals, a focused sample of managers of professionals was constructed and was drawn from a range of scientific and public sectors. Semi-structured interviews were used to gather information and the research approach taken in order to understand and interpret these conversations is presented in section 5.5.1, below.

### 5.4.4 The Sampling Frame

#### 5.4.4.1 Chemists in the Pharmaceutical Sector

R&D scientists employed in the pharmaceutical sector belong to one or more professional bodies. The leading body serving the chemical profession is the Royal Society of Chemistry (RSC) which can be traced to the Chemical Society founded in 1841. The Society has a clearly defined membership structure and awards the designation, *Chartered Chemist*, to members admitted to the grades of Member or Fellow. It has about 37,000 members in the UK of whom about 3,400 give their employment sector as a pharmaceutical manufacture or research. This represents the second largest employment sector for chemists outside the universities. A mailing list was obtained from the Royal Society containing 1,000 UK members (excluding Graduate, Student and Associate members) who had given their occupational sector as pharmaceutical manufacture or research.

#### 5.4.4.2 Accountants in the Pharmaceutical Sector

While there are many accounting bodies, discussions with accountants indicated that members of the Chartered Institute of Management Accountants (CIMA) would tend to be employed in manufacturing and production sectors. Other accounting bodies were considered likely to contain a high proportion of accountants who were self-employed or who worked for accountancy practices. The origins of CIMA can be traced to The Institute of Cost and Management Accountants founded in 1919 and a mailing list was obtained from CIMA containing 497 UK, non-student, members employed in Standard Industrial Classification categories 25709 (Pharmaceutical) and 25119 (Inorganic Chemicals). About 60% of the CIMA sample was engaged in the pharmaceutical sector. Typical job titles on this list were; Management Accountant, Financial Controller, Business Analyst and Financial Analyst. Of the CIMA sample, 10% had 'director' in their job title although most of these are thought not to have held a legal directorship.

5.4.4.3 Accountants in the Public Sector

Public sector accountants are likely to be members of the Chartered Institute of Public Finance and Accountancy (CIPFA) which can be traced to The Corporate Treasurers and Accountants Institute of 1885. CIPFA advances the science of public sector accounting and promotes education and research in the field and has structured examination and entrance routes. Public sector accountants were surveyed through CIPFA's *1997 List of Members* published in the autumn of 1997 and which lists alphabetically all organisations employing CIPFA members and also lists the names of the individual members employed. Almost 5,000 CIPFA members worked in local government of which 1,398 worked in the County Councils of England, Wales and the Unitary authorities of Scotland. A sample of 527 CIPFA members was obtained by taking every third name in the listing after a random starting point had been selected from a random number table. Assuming that CIPFA members are broadly distributed throughout local government in proportion to the size of the authorities, this sample is highly representative. All county councils in England and Wales were included and the sample included as few as two CIPFA members in the smaller councils and up to 18 members in the larger councils.

## 5.4.5 Sample Size

The sample selected for this survey needed to satisfy two important criteria. It needed to be large enough to enable a robust assessment of the new instrument's factor structure and Schwab (1980) recommends that the ratio of respondents to scale items should be at least 10 to 1. The number of items in the new commitment scale after piloting was 12 (see section 6.7) and new instruments should be tested across several independent samples (Hinkin, 1998, p.111). Three independent samples were used in this study and so the final total response would need to be around 360 on these considerations alone. The sample obtained also had to be large enough to detect small interaction effects and precise enough to test the moderating relationships on sub-groups and this aspect is discussed below in section 5.6.5. The sampling frame used in this study is summarised in the Table 5.3.

**Table 5.3 The sampling frame used in this study**

| Profession | Pharmaceuticals | Local Government |
|---|---|---|
| Chemists | 1000 | - |
| Accountants | 497 | 527 |

## 5.5 DATA COLLECTION

### 5.5.1 Exploratory Qualitative Research

#### 5.5.1.1 The Interview Sample

The approach taken in this part of the study was to explore commitment in work settings containing a high proportion of professional employees. No attempt was made to obtain a statistically representative sample from the population of professional organisations as the purpose was to gain understanding and explanation in order to write an account of organisational commitment in professional organisations. This account is later used to generate an item pool - the traditional starting point in the development of measurement scales (Hinkin, 1998). Suitable organisations were identified and letters of introduction were sent to a named contact in the Human Resource Management division, identified, where necessary, from a telephone call to the organisation. A number of organisations were contacted and all agreed to participate. The people interviewed and their organisations are shown in Table 5.4.

The decision to interview mostly human resource managers was taken because they have a good overview of management practice in their organisations and should have a good knowledge of the expectations that both employer and employee have of each other. The sample contains high technology companies as well as organisations that employ a range of professional groups such as accountants, scientists, technologists and as such the sample is highly relevant to the general research question concerning the commitment of corporate

professionals. The appropriateness of the sample helps to boost the reliability of the information obtained from interviewees and, in-turn, the validity of interpretations drawn from their narratives (LeCompte and Goetz, 1992).

**Table 5.4 Interview Participants**

- The human resources (HR) manager of a manufacturer of electronic components for defence contracts.
- The HR manager of a high technology electronics manufacturer.
- An HR manager in a multi-national electronics and aerospace company.
- The Chief Executive of a Research and Technology Organisation serving the rubber and plastics industries.
- The manager of a large general medical practice.
- The HR manager in a National Health Service Trust hospital.
- The HR manager in a large private hospital specialising in the treatment of psychiatric disorders.
- The HR manager of a Higher Education Institution.
- The HR manager of a County Council.
- The HR manager of a Borough Council.

## 5.5.1.2 The Researcher's Relationship to the Researched

While the analysis of the literature presented in chapters 3 and 4 had led me to believe that there is a general problem with the use of extant definitions of commitment, at the point of embarking upon this survey, I had no preconceptions as to how commitment would be described by professionals or about the detail of what I thought commitment meant among professional employees. Indeed, I took a conscious decision not to research what commitment could mean before this point in order to minimise the scope for

'contamination' of interview data and their interpretation. My stance was to attempt to set-aside preconceptions and let the 'story' of commitment develop from a 'clean sheet'. However, although the exploratory study was qualitative, it retained my overall positivist approach and this is evidenced by the following underpinning assumptions.

- Organisational commitment has a shared meaning which exists 'out there'.
- Representative, typical, respondents exist 'with mental structures that match the researcher's reasoning and use of language' (Silverman, 1993, p.93).
- The shared meaning can be described by survey participants.
- The description can be condensed into a summary account by the researcher.
- The summary account can then be meaningfully extended to other research settings.

However, I was anxious to avoid a formal, impersonal, and detached role as interviewer as would be implied in a highly positivist stance. The reason for this is that I wanted to enter into a discussion with participants in order to bring to the surface their ideas and descriptions of commitment in the workplace. I felt that a formal and impersonal stance ran the danger of inhibiting these rich descriptions from emerging. While the interview protocol (see Appendix D) was designed in advance to give coherence to the interviews, the protocol was loose enough to allow for digression and follow-up into interesting areas that emerged during the discussions. It was not administered in a uniform and unswerving manner throughout the sample. This approach helps to substantiate the reliability of the dialogue obtained and other aspects of the interviews that help to improve reliability are given below.

- Interviews were conducted in the interviewee's place of work at times convenient to them;

- Discussions began with an overview of the commercial activities of the organisation and the participant's role in it. This was done to give a context for the ensuing discussion and to allow a few minutes for the participant to settle in to the interview by dealing with some familiar material and the outset, and to de-emphasise the researcher's role as an intruder.

- The researcher's background knowledge and vocational experience of both technical R&D and general management helped to understand and interpret the 'private worlds of experience' that were encountered (Silverman, 1993, p.97).

5.5.1.3 Aims of the Exploratory Research

The interviews were conducted using a semi-structured framework which ensured that common themes were explored with each interviewee but which also allowed for extensive follow-up of ideas and examples generated by the interviewees. The interview protocol was derived from the preceding literature review and the criticisms and limitations of existing commitment theory that were developed. The guiding research questions explored in this part of the study were:

1. How is commitment judged in professionals, that is, what are the characteristics of committed professionals?

2. How do these characteristics relate to widely used measures of commitment?

3. To what extent does commitment depend upon organisational support?

4. How does the basis for commitment (affective or calculative reasons) affect organisations?

Each interview lasted for about one hour and all were recorded (except one where tape recording was prohibited for security reasons) and verbatim transcripts were made, by the author, from the recordings.

### 5.5.2 Planning and Piloting of the Quantitative Survey Questionnaire

The review of the commitment literature in chapter 3 identified that the antecedents and correlates of commitment are many and varied and the piloting stage involved a detailed consideration of the type of data that would be needed to achieve the research objectives. The search in the literature for suitable instruments was extensive as more than one instrument was available for most of the constructs of interest. The results of this search together with the reasons why particular instruments were selected are given in Appendix E. The first pilot study was designed solely to assess the internal consistency reliability of existing instruments. In this study, three alternative measures of attitudinal organisational commitment (the British Organizational Commitment Scale, Cook and Wall, 1980; the Affective Commitment Scale, Meyer and Allen, 1984; and the Organizational Commitment Questionnaire, Mowday, et al., 1982) were tested on the teaching staff of a business school. Reliability analysis and other considerations led to the rejection of the BOCS and the OCQ and retention of the ACS for later use in the study. A 17-item version of the Survey of Perceived Organizational Support was also tested and the pilot strongly supported a condensation to a shorter 9-item version for the main survey. Professionalism and professional commitment scales were also tested and on the basis of reliability analysis were shortened for later use. Full details of the results of the pilot survey are also given in Appendix E. The second pilot study was also conducted on teaching staff but took place some months after the first pilot. The purpose was to test the reliability of a new item pool for a new commitment questionnaire that had been generated following exploratory interviews with professionals (see Table 6.1). This pilot also proved helpful in that, as expected, it identified items for elimination from the pool enabling the construction of a more robust and parsimonious measure for use in the main survey.

### 5.5.3 The Measurement of Variables

The questionnaire used in the main quantitative survey contained a new organisational commitment scale together with scales to measure other variables is shown in Appendix F. It was distributed in November and December 1997 following a number of exploratory interviews with managers in professional organisations which were used to as a basis for generating a new scale. The measurement philosophy combines a reconceptualisation of organisational commitment with the use of adapted measurement scales developed by others, for example, professionalism, and, in some cases, the adoption of existing scales, for example, perceived support and social exchange ideology.

Organisational commitment was measured in three ways: the new form; affective commitment (Meyer and Allen, 1984); and, a respondent-defined measure involving a line-segment scale. Three measures were used primarily in order to test the extent of convergence and discrimination between them as a means of evaluating the distinctiveness of the new form. Given the increasing recognition that work commitment is becoming multi-faceted, it seems less appropriate to examine organisational commitment in the absence of commitment to other, highly proximal, foci. These other targets for commitment, referred to here as local foci, include the work group, the supervisor and top management (Allen, 1996; Becker, 1992, Becker and Billings, 1993). Commitment to local foci were assessed in two ways, Likert scales and line-segment, also in an attempt to provide a more robust test than a single measure would provide. Other variables were measured using one scale only and this is acceptable as they acted only as independent variables. Among the more problematic of these is professionalism, which as Appendix E shows, has not received the depth of scale development and validation studies that constructs such as commitment have enjoyed. While the scale used was considered to be the best available, it was noted in chapter 4 that professionalism itself has been influenced by managerialism and there are grounds for seeing the concept of professionalism as being in need of revision as much as that of commitment. In the absence of a satisfactory alternative, however, four of the five subscales from the Hall (1968) and Snizek (1972) instrument were used to assess: belief in use of the profession as a referent body; the

amount of professional autonomy; belief in self-regulation; and, belief in the service to the public (the value of the profession). Hall's (1968) subscale relating to a sense of calling to the profession was not used in favour of items from Blau's (1988, 1989) scale to assess commitment to a profession. Thus a 5-component professionalism scale was employed.

Perceived support was measured using a 9-item version of a scale by Eisenberger et al. (1986) that assesses a unidimensional, global, perception of the extent to which the organisation supports individual goals, shows interest in the individual and provides resources when it can. Social exchange ideology was also developed by Eisenberger et al (1986) and is a 4-item scale measuring the extent to which employees believe that work effort should be influenced by the way they are treated by their organisation.

Continuance commitment (Meyer and Allen, 1984) was assessed through a 6-item scale that measured the perceived availability of alternative employment and the extent to which employees feel tied to an organisation due to the accumulation of social and economic ties. Job security was measured using a 3-item scale (Deery et al., 1994) that assessed employees' views about the likelihood of being able to work indefinitely with their current employer.

Commitment to work group, to supervisor and to top management were assessed using 4-item scales from Becker (1990)[1]. These scales assess the amount of identification with the particular focus and they were not part of the revision of organisational commitment undertaken in this thesis. They have more in common with the Affective Commitment Scale which assesses the extent of identification with the organisation, its goals, values and problems.

Perceived prestige was a single item scale (Gunz and Gunz, 1994) assessing whether employees felt that prestige and rewards go outside the area they work in. Scope for advancement was a 2-item scale written for this study that assessed employees' views

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[1]I am grateful to Dr.Thomas Becker for sending me a copy of these scales.

concerning the extent to which they believed they could advance their career if they stayed with the organisation.

After a cover page that gave the purpose of the survey and which explained some of the terminology used in the scale items, the questionnaire was divided into six parts largely to break the flow of responses in order to minimise the risk of acquiescence response patterns. This was felt to be a particular danger given the use of Likert response scales. The first part of the questionnaire sought personal demographic information, namely:

- tenure with present employer in years;
- the number of different organisations worked for in full-time employment;
- the number of voluntary job changes in the past 10 years; .
- the number of involuntary job changes in the past 10 years;
- the highest academic qualification achieved;
- membership grade of professional body;
- membership of a trades union;
- age and sex of respondent.

The second part of the questionnaire contained scales to measure:

- Affective Commitment (Meyer and Allen, 1984);
- Job Security (Deery et al, 1994; Oldham, Kulik, Stepina and Ambrose, 1986);
- Social Exchange (Eisenberger et al, 1986);
- Continuance Commitment (Meyer and Allen, 1984);
- Perceived prestige (Gunz and Gunz, 1994).

The third part contained scales to measure:

- Professional commitment (Blau, 1988, 1989);
- Perceived Organisational Support (Eisenberger et al, 1986);
- Scope for Advancement (created for this study).

The fourth part contained four of the professionalism subscales based on Hall (1968), Snizek (1972) to measure:

- profession as a major referent;
- belief in public service
- belief in self-regulation;
- professional autonomy.

The fifth part contained two of the three sub-scales of the new commitment questionnaire developed for this study (see chapter 6) which measured Achiever and Innovator tendencies.

The sixth part contained scales to measure:

- Commitment to goals (the third subscale in the new questionnaire);
- Commitment to top management (Becker, 1990);
- Commitment to supervisor (Becker, 1990);
- Commitment to work group (Becker, 1990).

Four line-segment variables measuring commitment were also dispersed throughout the questionnaire to break the flow of responses (Russell and Bobko, 1992). The questionnaire concluded with an opportunity for respondents to add additional views 'about professionals and their relationships with organisations'. In closing, respondents were invited to give their contact details if they were willing to participate in any follow-up to the survey and were thanked for their participation in the survey. In sum, there were 9 personal and demographic items, 80 Likert-scaled items, and 4 line-segment scales. Where appropriate, scale items were summed to give total scores for each variable for each respondent.

## 5.6 DATA ANALYSIS

### 5.6.1 Qualitative Analysis

The interpretive technique followed the methods described by King (1994) and involved the researcher's immersion in the dialogue, firstly through the process of transcription and secondly through reading the transcripts, in an attempt to find meaningful segments that were extracted and allocated into different themes. The themes were created, modified and deleted as segments continued to be identified and compared to existing themes until a point was reached when no further themes could be identified. In essence, a point of saturation was reached at which point it was judged that the inherent meaning in the dialogue had been extracted.

### 5.6.2 Quantitative Analytical Techniques

The substantive quantitative methods used in the analysis were exploratory factor analysis, confirmatory factor analysis and multiple moderated regression (MMR). Factor analytic techniques are well-documented (Arbuckle, 1997; Bagozzi, 1994; Child, 1970; Kim and Mueller, 1994a, 1994b) and the specific issues pertinent to this study are dealt with as they arise during data analysis and interpretation (chapter 7). MMR is used less often and the literature on MMR is less consolidated. The literature on MMR also contains sometimes hostile debates between academics in their search for the 'best' MMR procedures to follow. Consequently, it was necessary to review those debates in order to inform the research design and this review is given below.

### 5.6.3 Definition of Multiple Moderated Regression

Stone (1986, p.310) described a moderator variable as

> A variable which [through its interactive role] influences the relationship between two variables.

He later defined a moderator variable as

> A variable that interacts with another variable in predicting scores on and accounting for variance in a criterion variable on interest (Stone, 1990, p.164)

In its simplest form, if the correlations between two variables (Y, X) differ significantly across two subgroups, for example, male and female, then sex could be said to have a moderating effect assuming that the correlations are not spurious. The idea of moderated (interaction) relationship applies equally to continuous variables as it does to qualitative, grouping, variables such as gender or ethnicity.

### 5.6.4 Measurement Scaling and Multiple Moderated Regression

Most of the quantitative data collected in this survey are, strictly, at the ordinal level. However, as is the case in much of the attitude research conducted in organisational psychology, it is assumed that the data are sufficiently close to interval level so as not to do harm to the analyses conducted upon them. Given the proliferation of research in organisational behaviour and organisational psychology that treats data obtained from Likert scales as interval level, much of which concerns commitment, that assumption is reasonable. Jaccard, Turrissi and Wan (1990, p.29) and Aguinis (1995, p.1147) consider that regression analysis is appropriate for testing for moderator effects so long as the data approximate interval level. Since all the scales used in this survey to measure moderator variables were verbally anchored, their treatment as interval level is justified.

### 5.6.5 Sample Size for Multiple Moderated Regression

This thesis is concerned with the effects of moderator variables and there is a helpful paper to assist with sample size estimates (Champoux and Peters, 1987) which provides sample sizes required to detect moderator effects of a particular strength. The problem facing this study, however, is that the strength of the moderator relationships are not known in advance. This issue was examined through one of the pilot surveys which was primarily undertaken to assess instrument reliability. Based on 32 responses, a regression equation for affective commitment regressed on exchange ideology and perceived support gave, as expected, a negative β for exchange and a positive β for perceived support, and an adjusted $R^2$ (adj$R^2$) of 0.60. Adding the interaction term did not show any significant change to R squared. However, assuming that the interaction (moderating) effect is present, albeit small, then we would not expect to see the effect with such a small sample size. This test was useful, however, since, if it is assumed that the population change in $R^2$ will be small when the interaction term is added (say, a weak moderator effect giving a change in $R^2$ of .01), then Champoux and Peters show that for a total $R^2$ of 0.6, the sample size should be 640 to detect an effect of that magnitude.

Regressing affective commitment on exchange ideology and professionalism, using the pilot study data, indicated the presence of a strong interaction effect as the change in adjusted $R^2$ (delta R squared, $\Delta R^2$) was 0.081. Champoux and Peters demonstrate that the square root of $\Delta R^2$ gives the strength of the moderator, in this case, 0.285. Given that the total adjusted $R^2$ was 0.31, the sample size to detect such a large moderator effect (at a power of 0.975) will be about 250. The pilot results must be taken cautiously, however. The moderating effect of perceived support may prove to be greater than that indicated in the pilot study and the moderating effect of professionalism could prove to be smaller. Consequently, a sample of at least 400 should be sufficient to detect small to moderate sized effects.

Sample size can also be estimated by consideration of the formula for determining the significance of the change in $R^2$ caused by the addition of the interaction term. The partial

F-test (Jaccard et al., 1990 p.38; Norusis, 1993 p.344 ) is derived from,

$$\frac{\Delta R^2 (n-p-1)}{q(1 - R^2)}$$

where,

- $R^2$ is the amount of variance in the dependent variable explained by the full regression equation including the interaction effect,
- $\Delta R^2$ is the difference between $R^2$ for the full equation and $\hat{R}$ resulting fom the equation including 'main effects' only,
- n is the sample size,
- p is the total number of independent variables in the regression equation,
- q is the number of variables added to test the interaction.

For the interaction term only, and assuming $R^2$ to be 0.3 and $\Delta R^2$ to be 0.01, then to achieve an F value of 5.0, n is approximately 350.

### 5.6.6 The Detection of Moderator Variables

A substantial part of this study involves the detection of moderating (interaction) effects and this is commonly attempted in organisational research using multiple moderated regression (MMR). If variable Y is related to variables X and Z, then interaction means that the regression relationship of Y on X varies with the magnitude of Z (Cohen and Cohen, 1983, p.349). Arithmetically, in this case, it is also true that the relationship of Y on Z varies with the magnitude of X. A moderator effect is indicated if the addition of the

interaction term, XZ, produces a significant change in R squared after the independent variables have been entered separately. The magnitude of the change in R squared indicates the magnitude of the moderator effect and is a commonly used test.

Detection of moderator effects is an important topic in organisational psychology although it has been neglected by researchers generally (Tacq, 1997, p.127). One reason for this is the diverse and widespread literature concerning appropriate statistical techniques (Jaccard et al., 1990, p.8). The techniques to detect moderators have been the subject of sometimes acrimonious exchanges although it would now appear that the methods to detect moderator effects have been settled. The technical debate is not repeated here and the interested reader is referred elsewhere for the major contributions (Bobko, 1995; Cronbach, 1987; Stone, 1986, 1990; Stone and Hollenbeck, 1989; Wise, Peters and O'Connor, 1984). In sum, conventional multiple moderated regression appears to be the most appropriate technique in which the interaction term is added after the independent predictor variables have been added. Independent variables should be added in sequence consistent with any theoretical model. The overall regression equation does not have to be significant since it is only the statistical significance of the interaction effect that is tested (Bedian and Mossholder, 1994, p.194; Bobko and Russell, 1994, p.161). Thus if X and Z explain little or no variance in Y but the interaction term XZ does, then the presence of an interaction is indicated. Multicollinearity, that is, a strong correlation between the interaction term and one or other independent variables, often occurs but this does not reduce the power of MMR to detect interaction effects (Cronbach, 1987). One approach to reducing multicollinearity effects is to transform the variables by centring them which involves deducting the mean from each observation before computing the cross-product (interaction) term and this approach was taken in this study.

Bobko (1995) reminds researchers that, in organisational studies, the power of regression to detect moderator effects can be low and that attempts to overcome this by statistical means are often unsuccessful (1995, p.228). More fruitful, according to Bobko, are aspects of research design that may help the power of detection. The narrow scoring range of commonly used Likert scales (typically 1-5 or 1-7), impedes the detection of moderator

variables and the use of 'wide' scales to measure dependent variables is recommended by Russell and Bobko (1992) who suggest a continuous line-segment approach. Consequently, Likert scales were summed, rather than averaged, to create a wider measurement range. For example, summing a 7-point, 5-item scale creates a range of possible scores from 5 to 35 compared to averaging item scores which limits the range to 1-7. Evans (1985) highlighted the problem that measurement error in independent variables will reduce the effect of moderators and emphasised the importance of using reliable construct measures. Large sample sizes are also required to detect weak moderator effects (Bobko, 1995, p.228). Both of these design issues were recognised and addressed.

### 5.6.7 Statistical Significance Levels

Aiken (1994, p.855) encourages researchers to set a statistical significance level in advance of their analysis rather than during the analysis when the actual significance of observations becomes apparent. I have followed this advice and set the significance level for interaction terms at the conventional minimum of .10. This is justified in view of the preceding discussion which has identified that true interaction effects are hard to detect, particularly when effects are weak. Consequently, setting a higher significance level, e.g. 0.01, could lead to important relationships among variables being overlooked.

## 5.7 SOFTWARE USED FOR ANALYSIS

### 5.7.1 Multiple Moderated Regression

All statistical analysis including MMR and exploratory factor analyses were conducted using SPSS version 6.1 (Norusis, 1993). Interaction effects were tested using blockwise (hierarchical) regression which allows variables to be entered into a regression equation in a pre-determined order. The order of entering variables is important and the consensus view is that the interaction term should be added last (Jaccard et al., 1990). Thus, in the regression equation

$$Y = C + b_1X + b_2Y + b_3XY + \text{error}$$

variable X is added in the first block, Y in the second block and XY in the third block.

### 5.7.2 Structural Equation Modelling

SPSS 6.1 cannot undertake structural equation modelling and the computer programme used for this task was AMOS version 3.6 (Arbuckle, 1997). AMOS (Analysis of Moment Structures) is one of several packages that conduct analysis of covariance structure models (commonly called Linear Structural Relations Modelling, LISREL). AMOS 3.6 has the advantage of being able to operate through the SPSS windows interface and readily links to SPSS data files. This made it particularly attractive and the software was purchased specifically for this study. The maximum likelihood estimation technique was used for estimating structural models in which it was assumed that the data were normally distributed, which, to a large extent, they were (see Chapter 7).

### 5.7.3 Data Entry and Checking

Data from all useable questionnaires were entered by the author into an SPSS data file. When all data had been entered, each case (a case represents data for each respondent) was double-checked with a research assistant and during this stage a small number of corrections were made. Descriptive statistics, including maximum and minimum values, were examined for each variable as a further check that a value did not breach the range of values that could be taken. Missing values were dealt with by employing 'listwise' deletion in which only cases with values for all variables are included in a particular analysis (Norusis, 1993, p.365). While listwise deletion is the simplest approach (Little and Schenker, 1995) which leads to some loss of data, given the overall large sample and the generally small number of missing scores which were presumed to be 'missing at random', it is unlikely to have influenced the findings.

## 5.8 METHODOLOGICAL PROBLEMS AND LIMITATIONS

Any research study that proceeds in the general manner outlined above has limitations which are present in the sample, the questionnaire and the analytical techniques used. Two particular gremlins plague this study - the use of self-reports and the problem of method variance.

### 5.8.1 The Use of Self-Report Measures

The principal aim of this study was to develop a new measure of organisational commitment and, in doing so, assess the strength of relationships between a set of attitudes and behaviours. It could be argued that the dependent variable, commitment, could be assessed by a colleague, such as a line manager, but this would require an 'externally assessed' measure of commitment to be validated. Other variables of interest here such as perceived job security, perceived organisational support and social exchange disposition can only be measured through self-report. Even if external, independent measures of commitment and professionalism were developed, there is no strong reason to expect that the effect on method variance (discussed below) would be improved. Any independent measures would require good inter-rater reliability and this raises issues about the feasibility of such a research design since a) several raters would be required for each person whose commitment or professionalism are rated, b) participants would have to agree to being rated by raters, and c) the combined effect of these requirements is likely to reduce sample sizes to a level at which useful statistical analyses would not be viable. Furthermore, a meta-analysis of commitment research (Randall, 1990) found that the differences between self-ratings and independent ratings of supposed commitment outcomes were, overall, minor and that measurement methods appeared to have no significant effects. Thus a strong case for persisting with a cross-sectional, self-report research design is made.

However, while commonly used in organisational research, cross-sectional correlational surveys cannot confirm the directions of relationships between variables, although the circumstantial evidence they produce is often strong. Indeed, self-reports have fallen into disrepute in some quarters largely on account of fears about method variance and mono-method bias (Spector, 1994). One of the objections to them is that a respondent's perceptions of job conditions may not equate to the 'objective' situation, for example, people may perceive low job security when their employer believes and says otherwise. The problem with this objection is that it is the respondents' reality that needs to be measured as it is this that will affect their attitudes and behaviours. A concept such as job security has no absolute, objective, level and in light of rapidly changing employment conditions it would be wrong to assume that others have a more objective view of it than the individual. Hence, it is appropriate to use self-reports of job conditions. Schmitt (1994), while not defending self-reports, reminds researchers of more pertinent questions, namely, how will the choice of method affect the measurement of key constructs, what is the respondents' 'motivational context', and how can method effects be minimised? These questions are considered below in section 5.8.3 and later in chapter 9 when the main findings are discussed.

Howard (1994, p.400) points out that self-reports can have better construct validity than alternative measures and that alternatives have their own 'threats to validity'. Further support for the use of self-reports can be taken from research in the area of criminology. This field of social research is particularly important and, given the availability of official records, comparisons of the reliability and validity of self-report and external measures is possible. Huizinga and Elliott (1986, p.324), following an extensive review, observed that while self-reports do not always compare favourably with other measures, 'self-report measures are among the most promising measures of criminal behaviour.' Hood and Sparks (1970) were also unable to show serious unreliability of self-report measures. Hindeleng, Hirsch and Weis (1970) considered discrepancies between official and self-report measures to be 'illusory' and Box (1981) cites several studies that conclude that a large majority of people report reliable information even about criminal and deviant behaviours. Box also argues strongly that there are so many deficiencies in official, 'independent', measures of

crime that they cannot be considered to be more reliable or valid than self-reports. It is perhaps because alternatives to self-reports are unable to consistently show better psychometric properties that they continue to be used.

Thus, data obtained from self-reports should not simply be dismissed because of fashionable rhetoric. Furthermore, by adopting good practice, the value of cross-sectional work can be maximised. Mitchell (1985) recommends that, having shown that the data collected with tests and measures have good reliability, a survey should collect additional data from respondents for comparison with data available about non-respondents, such as job grades or age profile, in order to assess the representativeness of the sample obtained. This was undertaken here using published statistics on the composition of membership of each of the three professional bodies. Ideally, different constructs should be measured in different ways, but, for practical reasons, this is often not possible. If a construct can be measured through two or more measures, then different samples can be asked to complete different measures or a sub-sample could be asked to complete multiple measures of the same construct. Variations of this kind in the research design help to understand the effects of method variance (Mitchell, 1985, p.203) and this approach was taken in the use of multiple measures of commitment.

### 5.8.2 Causal Relationships

The propositions tested rely upon assumptions of causality, for example, that perceived support influences commitment and that the opposite pathway of commitment influencing perceptions of support do not occur. Organisational commitment has been positioned throughout as a dependent variable in common with the theoretical stance taken in many previous empirical studies. Commitment is consistently viewed in the human resource management literature as a desired outcome that can be influenced positively or negatively by other variables and, if this view is accepted, it is justifiable in this study to continue to treat it as a dependent variable. This stance is not faultless since one could theorise that committed people could generate beliefs that their organisation supports them and that their jobs are secure. However, job security and support are extrinsic variables and it is

widely held in the human resource management and personnel fields that they can cause variation in commitment and other related attitudes (Dooley et al., 1987; Roskies and Louis-Guerin, 1990). It is also held that they can be particularly problematic if certain labour market conditions apply. Thus there are strong grounds for treating perceived support and job security as independent variables in this case and, while the assumption is not watertight, it is consistent with practice demonstrated in much research in quantitative organisational behaviour and psychology. Such inter-relatedness among variables makes unravelling of the complex pattern of actual causal relationships a problem which is often recognised but which, excepting longitudinal studies, cannot be solved. This limitation needs to be remembered when interpreting the results of empirical studies of this kind (Piercey, 1986, p.289).

### 5.8.3 Method Variance

When a set of variables is measured with the same method the results are vulnerable to method variance problems, such as inflation among correlation coefficients. This is variance in observations caused by the methods used to collect data rather than true variance in the variables of interest. Method variance is not confined to questionnaire surveys, however - it is a general problem caused by the influence of the data collection method on the data collected. As noted by Spector and Brannick (1995, p.251),

> Method variance can distort observed correlations such that they fail to reflect accurately the relations between traits of interest. This method effect is of concern to researchers in that it adds ambiguity to the interpretation of results.

However, while the method variance problem should be acknowledged by researchers, there is no clear way of assessing how influential it will be in a given research setting. The milestone paper on method variance was Campbell and Fiske (1959) since which several reviews have appeared (Spector, 1987; Spector and Brannick, 1995; Williams and Brown, 1994) and their salient points are summarised below. Spector and Brannick (1995, p.256) considered that, 'evidence suggests that the effect [of method variance] is quite small and

does not do much damage to conclusions'. They considered that it is better to focus on the 'sources of method variance in the assessment of particular traits' (p.258), as this approach should give a better picture of the factors that could influence bias than that obtained through simple consideration of methods alone. For organisational studies that employ a range of self-report measures to assess variables of interest there are several correlates like personality, social desirability and affective disposition that could be sources of method variance (pp.259-260). Where diverse aspects of the job, and/or the organisation, are measured at the individual level, the sources of shared method variance should be identified and controlled (p.267). This can be attempted with the use of individual reports together with reports of others, for example, supervisor ratings, although Spector and Brannick show (p.267) that this is no sure way of eliminating method variance. Indeed, the common view that 'independent' ratings contain less method variance than self reports was countered by Conway (1998, p.220) who showed that peer ratings of work performance contained 'almost twice as great a proportion of method variance as self-ratings'. When self-reports for several variables are obtained, one approach to reducing bias is to compute mean ratings for several respondents as this should average out method variance (p.268).

Most method variance research assumes that bias will affect two or more variables in a uniform, linear, fashion but this is not necessarily the case since method variance need not be linear and can be 'multiplicative' (Williams and Brown, 1994, p.203). That is, the higher the true relationship between two variables, the more that relationship is increased when the same method is used to measure them. Where the true relationship between variables is low, then observed relationships may not be much affected by sharing the same method. Similarly, if two or more variables are assessed through the same questionnaire, method variance will not necessarily affect each variable to the same extent. One variable may be affected significantly, the other may be unaffected.

Having summarised some recent findings about method variance, it is necessary to consider its influence in this study. Spector (1987, p.441) reviewed different studies concerning perceptions of job and work environments. He concluded that social desirability and acquiescence, two important components of method variance, were only

weakly related to job-related variables. In particular, social desirability was not a source of bias when perceptions of organisations were assessed. While urging caution in generalising to other constructs (p.442), his findings are nevertheless encouraging for this research design. Of greater import to studies of this type is overlap of item content (p.439) and so it is important to eliminate items in different measures that would auto-correlate.

Moorman and Podsakoff (1992) undertook a meta-analysis and an empirical study to assess the influence of social desirability in organisational research. Neither study showed even moderate social desirability effects for a range of variables including commitment. However, their general advice (p.145) usefully points-out the difference between the social desirability of the respondent and social desirability as a feature of scale items. That is, some items could prompt more response bias than others. On the specific issue of method variance and the testing of interaction effects, when the reliability of measures and sample size are satisfactory, 'true interaction effects are not obscured by common method variance' (Leong, Furnham and Cooper, 1996, p.1360). A meta-analytic study of method variance in organisational science supported this stance through its conclusion that, while common method variance does influence the observed variation in measures, the level of variation 'does not invalidate many research findings' (Doty and Glick, 1998, p.324).

Nevertheless, the method variance associated with the correlation of, for example, commitment, using self-reports, and labour turnover, using personnel records, should be less than the method variance associated with constructs that have been measured in the same manner, such as commitment and professionalism. In this study, the use of a single method to measure a set of variables is likely to maximise method variance but the actual amount introduced and its influence on relationships among variables cannot be known with any certainty. There seems to be a tension here in that, ideally, researchers want to measure variables such as commitment and professionalism using independent and dissimilar methods but this is extremely difficult to achieve if it is at all possible. Another point in defence of this problem is that, in this study, it is sufficient to predict the direction and magnitude of relationships among variables rather than determine the exact strength of those relationships.

### 5.8.4 Coping with Method Variance

So, how was method variance addressed in this study? Because the primary variables of interest were attitudes measured at the individual level it was extremely difficult to substantially address the bias problem, given the practicalities and ethics of organisational research. However, five aspects of the research design helped to contain the effects of method variance.

1. The use of a large sample drawn from a diverse set of organisations.

2. The use of measures with high reliability as indicated by previous research and piloting.

3. Elimination of auto-correlations between items by examination of item wording and piloting of the scales.

4. The use of different measures of the same dependent variable.

5. Exploratory factor analysis to ascertain that respondents had discriminated between variables.

### 5.8.5 Sample Representativeness

Why chemists and why accountants? While reasons can be given to support these choices the same or similar reasons could doubtless be applied to other professional groups. It was important, however, to limit the study to corporate professionals, that is, professionals who work in and for an organisation. Professionals who, by and large, work for themselves or small partnerships would not be appropriate for this study as the notions of organisational commitment and organisational support must surely differ. Additionally, some professional bodies contacted in the planning stage of this study refused to allow their membership to

be surveyed citing the Data Protection Act or institutional policy as barriers to co-operation. Thus, the choice of sample remains somewhat convenient in that the respective memberships were accessible and the mailing lists obtained contained a very high proportion of people for whom the questionnaire was meaningful. My position on this matter is that the two professions selected are appropriate for the study and offer the potential to generate useful findings. While the same might be said of other professions, these were not identifiable or contactable at the time the survey was undertaken. Furthermore, like many theses, this research should be considered as exploratory - in this case a test of a new commitment scale and the factors that influence commitment in diverse organisations. It should be recalled that the aim of the research was not to explain why individuals come to hold a particular set of attitudes, rather it was to assess how this configuration of attitudes together with situational factors influence commitment.

Despite extensive consideration of measurement instruments and two pilot studies, with the benefit of hindsight, it is possible to identify weaknesses in the sampling frame. Firstly, almost 70% of those surveyed did not return the survey, leading to the question of whether the non-respondents differ in some important way from those who did. However, steps were taken to maximise the response rate (Diamantopoulos and Schlegelmilch, 1996; Roth and BeVier, 1998) in that the covering letter was carefully composed and emphasised the importance of the work and a reply-paid envelope was included. The covering letter carried University College sponsorship and also emphasised that respondents were assured of anonymity, unless they chose to identify themselves, and this was important given that questions were being asked about relationships between the respondents and the organisation that pays their salary. Additionally, the Royal Society of Chemistry did not release its mailing list, supposedly for reasons of confidentiality, and handled the mailing of pre-sealed envelopes provided by the researcher. Thus, it would have been impossible to undertake a second wave without contacting those people who had replied to the first wave. Using descriptive data from the professional bodies surveyed, it was possible to compare respondents with the total membership of the institutions in terms of age group and sex. The sample obtained proved to be comparable to the total membership (see section 7.3) raising confidence that, in terms of these demographic variables, the samples

were representative. In addition, the overall response rate of just over 30% was broadly acceptable and was consistent with that found in other surveys of this type (see chapter 7). The results therefore, are claimed to be reasonably representative of large professional organisations.

### 5.8.6 The Choice of Measurement Scales

Turning to the questionnaire itself, it is intriguing that the two measurement scales that piloting had suggested would show moderate negative correlations with commitment, social exchange and job insecurity, in fact showed only weak negative correlations. A better test of the moderator effects would have been possible if stronger negative correlates had been found. Having personally keyed all the data from over 600 questionnaires into SPSS, it is clear that some of the items from these two scales appeared ambiguous to a small number of respondents who noted this in their response. The implications of this are not too serious, however, since most constructs were measured through multiple items and, so long as other items cluster into reliable sets, measurement error is kept to acceptable levels. Furthermore, the propositions developed at the beginning of this chapter are drawn from an extremely large array of theoretical relationships that could be postulated for commitment. It is important to recall that the nomological network is being explored in order to obtain evidence for construct validity and, in doing so, shed light upon the commitment domain. They do not represent an attempt to conduct an exhaustive study of commitment and it is better to see this research model as a first step in an attempt to create fresh measures of commitment that show improved relevance when used with particular occupational groups, and also to extend the process of understanding commitment in the new climate for employee relations.

### 5.8.7 The Item Pool for the New Commitment Questionnaire

When a set of items is generated for inclusion in a new test or measure, the set is inevitably drawn from a potentially very large number of items that could be written and thus it is important to defend the actual set generated. Some researchers generate items directly following a theoretical or working definition of a construct - as seems to have been the case with current measures of commitment. While it would have been possible to have generated an item pool using only literature-derived criticisms of classical commitment theory, this study took the care to initially interpret commitment through conversations with managers of organisational professionals. Thus, the set developed is defended on the grounds that it stems from actual discourse and this is offered as an extra 'quality assurance' step in the research that helps to anchor the new scale items in professional practice. The exploratory research study could have been strengthened, for example, by increasing the number of interviews and by using a more structured approach to generating views of commitment such as the repertory grid technique. As for the size and scope of the survey, I felt that sufficient information had been obtained from the interviewees to enable the development and testing of a new measure. While the interview sample was small, I believe that it is justified as it became clear to me that the accounts of commitment that I was hearing differed markedly from the mainstream literature on the topic. It is because contrasting views were being expressed that I felt there was little to be gained in extending that part of the study beyond what had been achieved. In statistical tests of difference, a small sample can be sufficient to detect large differences whereas a large sample is needed to detect small differences. The same can be said of qualitative research when the aim is to get an initial feel for the extent of agreement or disagreement with an already well-rehearsed set of views.

### 5.8.8 The Analysis

The complex statistical techniques used in this research each make assumptions about the data they analyse, for instance, that data are multivariate normal. Yet the effects of minor

departures from these assumptions are not always well-understood and nor is it always possible to assess to what extent data deviate from the assumptions. There is much art as well as science in the interpretation of these results, particularly those concerning factor analysis. However, in order to boost my capacity to properly understand and interpret the results of such complex techniques, I identified and attended training courses dealing with multiple regression and confirmatory factor analysis and liaised closely with a group of other doctoral students using similar methods, albeit on very different problems.

### 5.8.9 The Assumption of Linear Interaction

The particular approach to multiple moderated regression used in this analysis has assumed, reasonably, that the interactions between variables are linear, that is, the strength of the interaction is the same for all values of the variables concerned. It is possible, however, that more complex interactions are occurring, and that the strength of the interaction differs with the value of one or both of the independent variables (Aiken and West, 1991; Jaccard et al., 1990). For example, an interaction between perceived support and social exchange may only occur at extreme values on one or both variables and could evade detection if purely linear relations are assumed. In the absence of strong theory why non-linear interactions might be present, I have not examined this possibility in any depth. Nevertheless, a small exploratory test was undertaken in which scores for social exchange, professionalism and support were transformed by squaring, but the results did not suggest any sign of non-linear interaction effects.

## 5.9 SUMMARY OF THE RESEARCH DESIGN

This chapter has presented the empirical approach used to reconceptualise organisational commitment which is positioned throughout the analyses as a dependent variable. The theory and argument presented in Part 1 of the thesis were drawn together into a set of propositions that will cast light upon the three objectives of this study. Limitations inherent

in research of this nature were identified and centre around problems of method variance and the untangling of causal relationships. Short of employing vastly different research designs which would hamper the integration of this research with the existing body of knowledge, these problems are largely intractable. Measurement issues were discussed and the study relies heavily on the use of multivariate techniques to analyse data obtained through postal questionnaires. In recognition of the known limitations of quantitative research in the social sciences, this research design has been constructed to follow good practice in construct validation and to address known limitations of multiple moderated regression, in particular, failure to detect moderator effects when they exist in a population, and, the detection of false moderator effects.

The following steps were employed in an effort to maximise the utility of the findings.

1. An exploratory study of commitment among professionals preceded the main survey in order to assess the appropriateness of existing measures of commitment and to provide enough data for an item pool to assist the development of a new measure.

2. Line-segment scales were used in conjunction with Likert scales to allow a wider range of scores on dependent variables than can be obtained using Likert scales alone.

3. The measurement techniques used promote 'equal interval characteristics of measurement scales', a criterion desirable in the testing of moderator effects (Jaccard et al. 1990, p.75).

4. Sampling across two professions in two sectors helps to maximise the variation in responses and to capture extreme values of dependent and independent variables which, in turn, assists the detection of moderator effects (Bobko and Russell, 1994, p.196).

5. Given reasonable response rates, the sample size achieved would be large enough to detect even weak moderator effects.

6. Two pilot surveys were conducted to isolate scales with high reliability in order to minimise error variance.

7. Recent work on the foci of commitment is represented through commitment to supervisor, to work group and to top management.

Chapters 6 to 8 present the results of this study and readers should, at this point, recall Piercey's (1986, p.290) observation that

> Any social science research design implicitly incorporates the frame of reference represented by the received theory and the researcher's interpretation of that theory.

Thus, the validity of the empirical results that follow is bounded not only by technical difficulties, but also by what Giddens (1976, p.162) called the 'double hermeneutic', that is, the reality that the observer cannot help but influence what he or she observes. With this in mind, let us now proceed to the results.

# CHAPTER 6

# RECONCEPTUALISING ORGANISATIONAL COMMITMENT

## 6.1 INTRODUCTION

In chapters 3 and 4, some reasons were proposed relating to why the uncritical use of measures of organisational commitment may be inappropriate in fresh research on the topic. At the centre of these dangers are concerns that commonly used measures of commitment may not capture commitment as it is now expressed, at least in professional organisations. In addition, the Organizational Commitment Questionnaire and the Affective Commitment Scale have been used across a range of vocations and professions yet neither should be used unquestioningly when professional groups are to be studied. This chapter presents the results of an exploratory, qualitative study into the commitment of professionals. Qualitative data are then presented to illustrate the nature and form of commitment in professional organisations. A new definition of organisational commitment is developed and the chapter concludes with the generation of an item pool for subsequent testing and validation. Before turning to the findings of this part of the research, the reader is reminded that the classic definition of commitment as embodied in the Organizational Commitment Questionnaire (OCQ) involves belief in the organisation's goals and values, a desire to stay with the organisation and a willingness to exert effort. The Affective Commitment Scale differs only in its omission of the desire to stay dimension. It is helpful to keep these definitions in mind when considering the responses by interviewees.

## 6.2 CHARACTERISTICS OF COMMITTED PROFESSIONALS

### 6.2.1 The Benefits of Commitment

There was no doubt among respondents that commitment is beneficial to the survival of organisations employing a large proportion of professionals and that the organisation would be disadvantaged if commitment wanes as illustrated by the following extracts.

"It is difficult to see that you can run a successful company with an uncommitted workforce. There must be examples - if the percentage of labour in the end-product is [low] then that's a possibility, i.e., automated production. Where you've got a people business, and this [organisation] at the end of the day is a people business, I just don't see how you can be successful with an uncommitted workforce". (Chief Executive, RTO).

"There's an element of what's the added value. You get more from a committed person than an uncommitted person. More work, better performance, more effective, more efficient. The organisation gets better value out of committed people". (NHS manager).

Another specific loss to the organisation when commitment falters concerned creativity and quality of work. Losing commitment would hinder,

> "The little things that contribute to creativity. Commitment maintains the quality of service, to set it up and to deliver it consistently". (Borough Council manager).

### 6.2.2 How are Committed Professionals Perceived?

There was substantial agreement among interviewees regarding the characteristics of committed professionals and analysis of dialogue identified three main themes. The first of these concerns achieving objectives through effort. Effort was commonly seen as manifesting in working until a task was completed on time and to agreed standards. It is not simply about putting in long hours although this was often mentioned. This component I have called *Achieving* and is illustrated by the following extracts.

"A marker is how much time and commitment a person puts into the job above and beyond the minimum." And, "A committed person is a person who is trying to better themselves for the good of the organisation not just themselves". (HE manager).

"Your commitment to keeping things together and to not giving lower levels of service is that you just take work home all the time." (Borough Council manager).

"..the committed person probably is seen to be actively seeking things that need to be done." (NHS manager).

"Committed people are those who once they have agreed on objectives discharge them to an acceptable standard within whatever code of good practice applies..and deliver..on time." Commitment to me is more about once they've got there it is the attitude or behaviour that actually keeps them going". "Where organisations need commitment is to maintain the quality of service. Not just to set it up, make it happen but to go out day after day hitting the same standard."(Private hospital manager).

[Committed employees are] "well motivated and hard working and who stay and see the job done". (Defence contractor).

It would be over-simplistic, however, to equate high levels of achievement and effort as always being indicative of high commitment as these could be a reaction to high levels of stress or other pressure-inducing characteristics of the work place. For effort and achievement to equate with commitment, there needs to be a felt sense of purpose behind them.

The second theme identified in the dialogue I have called *Innovation* since it embodies an involvement with tasks that manifests in developing the business, making suggestions, using initiative and challenging the status quo for the good of the organisation, for instance, challenging the design and delivery of products and services. It is essentially through commitments to innovating products and services that commitment to the organisation is demonstrated, as illustrated by the following extracts.

"It's not all about hours. I think it is perhaps an extra involvement in the work. Coming up with the extra idea or getting involved because they believe in it.." (NHS manager).

"A committed person in our organisation is someone who is looking to innovate, create, satisfy customer needs..and for looking at ways of improvement in the ways the business operates. So it's the extra bit". (Aerospace manager).

"[The committed employee] has a clear sense of purpose about the job they are doing, is well supported (by) line manager and colleagues, and is someone who is able to use their own initiative". (County council manager).

"That extra bit of commitment comes from the satisfaction they would have if they were being creative enough to improve what they were doing" "It really matters to people what sort of service they are giving". (Borough council manager).

For the organisational professional, commitment to service innovation is entwined with commitment to updating their expertise in their discipline. This suggests that dimensions of professional and organisational commitment co-exist for if the professional does not innovate and deliver agreed objectives over a period of time then they will not be seen as showing commitment to the organisation. If this is compared to the Local-Cosmopolitan view of professionals (Gouldner, 1957) it seems that the Local-Cosmopolitan dichotomy was valid only insofar as its underlying definitions of organisational and professional commitment were valid. In that scenario, organisational commitment was taken to be an attitudinal state of positive views towards the organisation. The results of this exploratory study suggest that organisational and professional commitments are blurred and that attempts to separate them may prove difficult.

One important distinction that remains to be discussed is whether the above description of commitment as being inclusive of achievement and innovation describes commitment itself, or whether it describes the outcomes of commitment. The exploratory research suggests that when considering a professional who has access to sufficient resources in the workplace, commitment without outcomes is not a viable concept. Commitment without outcomes could exist only for a short time, perhaps if a professional needs further training

or is under-resourced. Almost all prior research has imagined commitment as a distinct construct that can be treated as one of many variables affecting performance. One of the few studies to question classic definitions and explore the meaning of commitment in a particular organisation (Randall, Fedor and Longnecker, 1990) nevertheless retained a sharp distinction between attitudinal commitment and its presumed performance outcomes. The research reported here is already questioning whether this apparent desire of researchers to keep attitudes separate is a helpful way of treating commitment research. This discussion suggests that the classic approaches to commitment theory may have hindered researchers in their efforts to move towards greater clarity and further suggests that efforts to examine attitudinal commitment and performance separately may be fruitless. On the evidence from these interviews, commitment is performance and performance is commitment. Previous studies that show little linkage between commitment and performance may have carried in-built weaknesses in their choice of performance outcomes such as low absenteeism as these outcomes may not be seen as committing behaviours by the committed. Randall et al., (1990). showed moderate correlations (r=0.3) between attitudinal commitment and committing behaviours that were meaningful to the participants in their survey and thus supportive of an association between the two variables.

This exploratory study has already proved useful in supporting the contention, based on the literature review, that it is necessary to question the way commitment is operationalised in the literature. In particular, the study suggests that commitment should now be described in terms of behaviours that benefit the organisation rather than solely as positive attitudes towards it. As discussed below, commitment without outcomes is now better seen as a form of loyalty. However, the third theme to emerge from the analysis of interview transcripts concerned the classic link between commitment and organisational goals. This third and final component of commitment resolves the deficiency noted above, that behaviours alone cannot be taken as an indication of commitment as they may be an unwilling consequence of high pressure at work, or an expression of high self-interest.

### 6.2.3 Commitment to Goals and Values

The organisation itself was not seen as the primary direct target or focus of a professional employee's commitment at work although it will be the beneficiary of commitments directed at other foci. While loyalty (desire to stay) is virtuous in its own right, it is, for professionals, no longer a core necessary characteristic. Technical professionals are expected to work at the forefront of their field and the acceptance of the need for continuous renewal of skills means that both sides accept staff turnover as a necessary consequence. If the challenge offered to the professional diminishes, or if perceived organisational support, such as the allocation of equipment and work space, deteriorates then the professional who thinks about moving on is not seen as uncommitted to the organisation.

> "The difference now is that people are now having a portfolio experience with their jobs. I have noticed that if we cannot offer people progress then they are quite happy to move around. So I think that while they are here and they can see some benefit for their own personal development and can do a good job they will give the commitment but they have to take a longer term view. People will make decisions to move around and that's to be expected" (Borough council manager).

> "I think there are groups, perhaps something like analytical chemistry, where they feel their commitment is to their discipline or to the expertise and I understand that because that's transportable. I think that's the modern view and in some organisations probably the right view. Provided they are developing the job, the role, the activity, then I think they are correctly committed. But I think you accept that there is a limit to how far, particularly if it's a discipline they don't want to move out of - they say, well, there's not much more I can do for this organisation - there's no other opportunity for developing my skills, I don't want to go into general management - so I have to go where I can develop my career further". (Chief Executive, RTO).

Given the inability of organisations to offer long-term job security, a strong attitudinal commitment based upon a general affect for a particular organisation could also be unhelpful to an individual if redundancy occurred or even if they were faced with the

prospect of finding another job over a long period..

Belief in the organisation's goals and values is a component of the classic definition of organisational commitment and difficulties identified with this notion were as follows.

- Top management may not have clearly defined organisational goals.

- Even if top managers have defined clear goals they may be poorly articulated and communicated to employees.

- Professionals may not be able to make a clear connection between their short-term work goals and the longer term goals of the organisation as expressed through a corporate mission statement of a set of strategic objectives.

To equate commitment largely with belief in corporate goals now appears to be a narrow and problematic concept since it assumes the goals are known by senior managers and then communicated to, and understood by, staff. However, it is not necessary for individuals to know specific high-level corporate goals in order for them to function effectively and it would be better for descriptions of commitment to focus on the specific goals that are pertinent to the individual since the individual will be judged against these.

> "For a long time we haven't had a clear vision..because we are very large with lots of different businesses..each has their own culture, their own budgets". And, "This year we have five corporate goals. In addition to that each department will have its own set of goals and those are cascaded". (County council manager).

> "While our overall mission is relevant to everyone, everybody feels that is part of the commitment, the corporate goals are a bit business planning and out of the realms of many of our staff". And, "It [commitment] is an attitude or belief that what they are doing fits in with that person's set of values." (NHS manager).

> "It's about being committed to the client and the product first, and through the client and the product to the organisation." (Private hospital manager).

Thus, in any new operationalisation of commitment it seems logical to replace a global belief in corporate goals with belief in, and understanding of, individual-level goals and yet it is important to distinguish between belief in goals and commitment to goals. This study has suggested that commitment to goals implies that the individual will direct effort at achieving them but belief in goals does not necessarily lead to the employee giving effort (commitment). Belief in goals, therefore, cannot be taken as a proxy for effort-based commitment, but disbelief in goals seems unlikely to lead to effort-based commitment.

The second challenge to the inclusion of adherence to corporate goals as major part of a global definition of commitment concerns the appeal of the goals to individuals. Some goals have more kudos than others and offer a greater challenge and high kudos goals should attract a stronger following for this reason. For instance, the goal of a college to become a university should appeal to most of its staff as they would benefit from the increased status that achieving the goal would bring, whereas a goal to provide education that meets local needs is less inspiring. Thus, although goals may appear entirely logical and beneficial to the organisation at a strategic level, they may not be appealing or exciting at an individual level unless, and until, they are personalised. Professional employees want their goals to fit with the long-term development of the organisation such that they provide challenging work and contribute to a secure future for the organisation insofar as that is possible in turbulent environments.

An employee may believe in an organisation's overall aims and values but struggle to see how their job contributes to achieving them. In a case like this, commitment to the 'distant' organisation is likely to be impeded and outcomes beneficial to the organisation would be less likely to occur. If the goals are not subscribed to then the employee would be considered uncommitted under the classic model of commitment. Such a view however overlooks the potential for employees to be committed and lays down a challenge to organisations to articulate goals that challenge and inspire employees at an individual level. The difference between goals and values should also be recognised. Employees may subscribe to, or at least not oppose, the values of an organisation, perhaps expressed in a mission statement, since mission values should have a wide appeal and longer currency.

Goals set for individuals will be more specific and usually require completing in a shorter time frame, possibly weeks or months. Adherence to values does not imply acceptance of goals and vice versa.

To summarise this section, the survey has identified a potentially new component of commitment, innovation, and has suggested an achievement-oriented as opposed to the general effort-based component of traditional operationalisations. It has also suggested a change of emphasis from belief in corporate goals to congruence between the employee's personal goals and the individualised goals that are set for the employee.

## 6.3 COMMITMENT AND ORGANISATIONAL SUPPORT

Interviewees felt that there is a close link between the organisation showing support and the employee giving commitment. Illustrative comments are given below.

> "They [employees] look for investment in training and development. And they look for support to access things like stress counselling". (Private hospital manager).

> "We've got these very brutal changes that are coming in and the things don't match up..Managers have to be seen doing what they say and have to live that out. Writing reports and then doing something else just doesn't match up. And I think this makes people very flaky about where they stand and how commited they should be - can they trust [management]?It comes down to trust and that affects commitment..Can you trust people [managers] to be working for your best outcome?" dh4

> "It is reciprocal and if you can demonstrate that (being a good employer) to people then equally they will see that and give back by way of effort". (County council manager).

> "You can build commitment by demonstrating that you value the staff.Perhaps commitment breeds commitment". (NHS manager).

> "I think that people want to be committed and that the organisation has to treat them fairly - where they are not necessarily commited to the organisation but they are committed to what they do, I think that very much depends upon how the organisation treats them as an individual as to whether they will be committed to the organisation". (High-tech electronics manager).

The nature of support offered by organisations will differ and employees in the same organisation may seek different forms of support. In a highly technical environment, support can be in the form of responding to the professional's requests for equipment upgrades and providing them with state-of-the-art technology. In local government, support could be judged through the organisation's promotion of equal opportunity initiatives. Support also appears to be judged in terms of the organisation's stated mission. For instance, some parts of public service deal with providing care services. These organisations make public statements about goals and performance for their care service and consequently it becomes necessary for organisations to treat their staff in a manner consistent with the messages given to external communities. The quotation below from a local government manager illustrates this point.

> "At some point this organisation has to be seen to be looking after and caring for those carers". (Borough council manager).

It would be too simple however to consider that the link between support and commitment is unbreakable. There seems to be a point in the employee-organisation relationship, that once crossed, is very difficult to recover from.

> "Once they get disenchanted with the organisation then it's very difficult. With a younger person it's not that much of a problem because, as I say, the only way sensibly is through parting - normally it can be the individual who does something about it by finding another job. The more difficult area I think is where people get into their late 50s or so, been here 20 to 30 years, and probably through the ageing process become disenchanted. And no amount of discussion can bring them on track". (Chief Executive, RTO).

This disenchantment could occur in long tenure employees who sees the organisation moving too far away from their value set which is rooted in past norms and practices. Some employees were perceived as being unable to show high commitment because they cannot subscribe to an organisation's goals and values. In this case no amount of support will raise commitment.

> "Some people..will not feel that it's possible to give commitment because either they don't believe in the product, they don't like the standard of service and they don't like the culture or they don't feel they fit in." (Private hospital manager).

A related and interesting notion emerging from interviews was of commitment as an elastic construct. In the public sector there has been a succession of year-on-year cuts in expenditure coupled with growing demand for increases to the volume and quality of services provided. The implications of these cuts, for example, redundancies, recruitment freezes, and re-structuring, could be expected to lead to lower commitment in the workforce. Interviewees noted however that, so long as 'bad' news is communicated openly and honestly to employees, then commitment may not be negatively affected at least in the long term.

> "I'm amazed by people's resilience to give their all, it almost goes against the fact that all these factors are happening". (County council manager).

Commitment seems elastic in that it can recover from deformations previously applied to it although one cannot assume that commitment can be stretched infinitely. It does have a breaking point as the following quotation concerning a job evaluation exercise that cut the salaries of one-third of a local government workforce indicates:

> "Up until recently it [overwork] hasn't [lowered commitment].Job evaluation has left people emotionally drained and it is just the final straw in a sequence of events." (Borough council manager).

The implication for organisations of the elastic nature of commitment is that they must stay alert and sensitive to the likely reactions of staff to successive negative events at work. To summarise this section, the notion of perceived support strongly influencing commitment was upheld by the exploratory study yet there is a 'fracture point' after which the relationship between the employee and the organisation appears to be irretrievably damaged.

## 6.4 AFFECTIVE AND CONTINUANCE COMMITMENT

This section considers whether the classic bases for commitment, affective or calculative, have any influence upon employee attitudes or behaviour. The view to emerge from the interviews was that if employees are showing committing behaviours for economic reasons then the organisation will benefit to a lesser extent than if it is for affective reasons. The rationale behind this was that the economically-committed can be reluctant in some situations to give additional effort. Their range of committing activities appears to be narrower as the following extracts indicate.

"If people become preoccupied with doing a job purely for money, when they are asked to do a bit of work which is outside their job description or something they have not been asked before then you are testing people's commitment at work. That's when it really tests commitment - you soon realise who is committed and who isn't". (County council manager).

"I wonder whether somebody [who] is artificially committed can sustain it and could respond when real commitment is needed" (Aerospace manager).

"The only problem might be is if there is a conflict between the person's interests and the organisation's, then their commitment would lie with [themselves]." (NHS manager).

"As soon as things change that person will not be committed". (High-tech electronics manager).

In sum, commitment for affective reasons was seen as more desirable for organisations than commitment based on economic reasons and this is consistent with Randall et al. (1990, p.218) who found that performance and calculative commitment were uncorrelated.

## 6.5 THE IMPLICATIONS FOR OPERATIONALISING ORGANISATIONAL COMMITMENT

### 6.5.1 Towards a New Definition of Organisational Commitment

Having been accepted and used for so long - nearly 30 years in the case of the Organizational Commitment Questionnaire (OCQ) and 15 years in the case of the Affective Commitment Scale (ACS) - it would be surprising if they could be shown to be seriously deficient. (The ACS largely mirrors the OCQ except for the behavioural items which are omitted). There are clearly similarities between the findings of this exploratory study and the content of the OCQ. The construction of the commitment of organisational professionals found in this survey as embodying innovation and achievement links to the general effort component of the OCQ although effort as measured through a general and unspecified set of items appears no longer to be sufficient. Effort has to produce results. A mismatch is also suggested regarding the OCQ's requirement for belief in corporate goals in preference to personalised goals agreed with the individual. Greater mismatch occurs with the desire to stay element which was not seen as a strong component of commitment in the study. The need for individuals to enhance their own employability and the inability of employers to offer long term job security seem to have made desire to stay a redundant component of the commitment definition - a finding that endorses the ACS over the OCQ. A theme that emerged from interviews was one of mutual, short-term, commitments being renewed as desired in the interests of both individual and organisations rather than an enduring long-term commitment from both sides. Indeed, strong attitudinal commitment from employees may turn out to be detrimental to their career prospects if they fail to exit before the organisation forces redundancy or involuntary job change.

It is worth considering whether these thoughts should be extended to non-professional groups and to those professionals who do not display the innovator-achiever characteristics. Should vocational, administrative and other support staff who are reliable and conscientious but who do not innovate or achieve a great deal be seen as uncommitted? To do so seems a harsh judgement and two possibilities arise. The first is to accept a definition of innovating and achieving such that a junior clerical employee who achieves their daily tasks and who makes suggestions for improving standardised, routine systems where possible would be showing commitment. Here, the terms innovate and achieve are relative concepts. They are relative to the expectations of the post-holder by management and to the scope for innovation provided by the job content and its confines.

If we now consider the corporate professional who is reliable and conscientious but who, by and large, maintains the status quo then should he or she be seen as weakly committed? This too seems harsh although it does reflect the views of interviewees. What emerges therefore is a different form of commitment to use with this category of professional employee. They can be characterised by being reliable, responsible and accountable for their actions and can be seen as loyal and dutiful. However, their performance can be less than that of others

> "There are people here who are committed but aren't good finishers. They are committed to what they are doing for the organisation but in terms of completer-finishers, not so good". (County council manager).

In contrast, the innovator/achiever group embodies the reliability, responsibility and accountability characteristics but deliver more positive outcomes over a period of time. A third group can be identified who are unreliable, who avoid accountability for their actions and who do not achieve objectives. This third group contains the uncommitted. This representation of commitment is illustrated below.

The Innovator/Achiever:

- uncomfortable with the status quo, seeks results;

- puts clients' and customers' interests before organisational routines, systems and procedures;
- responsible and accountable;
- understands how their job enmeshes with higher level goals;
- has congruence between personal goals and goals set by the organisation for the individual.

The Loyal and Dutiful:

- responsible, accountable;
- conscientious tryers;
- good attenders;
- believe in the organisation's goals and values;
- maintain the status quo;
- do not challenge the organisation and do not 'light fires'.

The Uncommitted:

- avoid accountability for their actions;
- do not meet objectives;
- do not show support for organisational goals.
- tendency towards irresponsible actions;

For professional groups, the Innovator/Achiever description is offered here as the definition with the highest face validity. The Loyal/Dutiful description of commitment could be used to describe employees in administration and support functions for whom the scope for changing the status quo is restricted by the nature of their work. A clerical employee who displayed the characteristics of the Loyal and Dutiful may be considered highly committed. A professional who displayed these characteristics is more likely to be seen as only moderately committed and, in the long run, seen as weakly committed.

Thus, a picture of commitment as having a strong behavioural component is crystallising. Achieving the associated behaviours requires certain attitudes, yet possession of those attitudes alone is insufficient to mark-out the highly committed organisational professional. These attitudes include co-operation with others and acceptance of individual goals. We now have a contrast with classical thinking about organisational commitment which allows an employee to maintain a favourable attitude to the global organisation and to give effort but which does not require them to innovate and achieve, that is, where performance is detached from commitment. This study strongly suggests that the commitment of professionals as constructed by professionals is now inseparable from performance. The notion of the highly committed professional who is unable to turn that commitment into performance because of certain intervening variables is not a viable concept. For corporate professionals, commitment cannot exist for long without outcomes as outcomes are the 'acid-test' for commitment. Effort alone, as measured in the OCQ is, in the long-run, not enough.

A criticism of this argument could be that I am confusing commitment as an attitudinal state with the behavioural outcomes of commitment as this was used against the OCQ (Peccei and Guest, 1993; Reichers, 1985) and the ACS (Morrow, 1983). To counter this view it is necessary to recall the general business environment around the time when the notions contained in the OCQ (Porter and Smith, 1970) were developed. The organisational structures and environments that prevailed 30 years ago were typified by centralisation, hierarchical structures, the division of labour and relatively little scope, or expectation, for employees to depart from their job description (e.g. see Drucker, 1975). These characteristics are less common now and employees are expected to take responsibility for developing a flexible job in ways that would not have occurred at least not in large organisations. The OCQ and ACS seem to better reflect the Loyal/Dutiful group as described above and seem suitable for research with non-professionals working in restricted job roles. However, this survey strongly indicates that it is appropriate to generate a new 'OCQ' for use with professional groups and a new working definition of commitment for use with professionals can now be offered.

*The organisational commitment of professionals is the internalisation of agreed, task-related goals concurrent with the continuing display of behaviours directed at goal achievement and other positive outcomes that benefit the organisation.*

### 6.5.2 Some Propositions

The discussion above leads to the following propositions concerning organisational commitment.

1. Organisational commitment among professionals should not be measured solely in terms of attitudes towards a global organisation. It should be measured in terms of achievement and innovation in respect of internal or external foci such as customer groups, product/service quality, or to the management systems within the organisation. The organisation receives commitment and derives benefits from the individual's commitment to these localised foci.

2. Measuring a person's commitment solely through his/her attitudes towards a global, distant, organisation may only be capturing their general affect for the organisation which does not necessarily reflect or capture commitment to more local foci.

3. Affective, calculative and normative measures of commitment only explain the basis of a person's commitment rather than measure commitment *per se*. No evidence was found in this study that these bases of commitment should be treated as commitment itself, and so the extent of a professional's commitment would be better assessed with a measure that combines both goal congruence and committing behaviours.

4. It is inappropriate for research purposes to apply the same operationalisation of commitment across professional, clerical/administrative and manual groups.

### 6.5.3 Summary and Conclusions

This exploratory study has found differences between the way commitment is described by managers of organisational professionals and the way commitment has been operationalised in commonly used measures, notably the OCQ and ACS. The interviews also substantiated the notion of a moderate to strong positive relationship existing between commitment and organisational support. Commitment based upon favourable attitudes was believed to be more beneficial to organisations than commitment based upon economic, continuance reasons. An interesting concept to emerge was that of commitment as a robust, elastic construct that can recover from deformation given supportive organisational climates. However, catastrophic events for employees seem to be able to fracture commitment such that its elasticity is lost and such that it cannot recover.

In view of these observations, the development of a new commitment scale for use with organisational professionals seems justified. While the OCQ and ACS continue to give good statistical reliability, an argument is made here that their use with professionals is flawed as their face validity is now open to doubt. They intentionally relate more to the goal commitment component of commitment and would not assess whether a person is showing committing behaviours, although the OCQ does include an 'effort' dimension. Some items of the OCQ assess behaviour although this conflation of attitudes with behaviour has been a souce of criticism (Morris and Sherman, 1981). This criticism now appears unsound since this study suggests that the developers of the OCQ included in it, through the behavioural items, a component of commitment that was relevant at the time and which is still relevant today. Improvements to item wording, however, appear necessary to improve their relevance in fresh research. A safer criticism of the OCQ concerns its stong emphasis on measuring attitudes towards organisations. Positive affective orientations towards organisations are no longer sufficient to earmark professionals as committed. Those affective orientations have to be backed-up with outcomes. Taking account of the broad differences that exist between occupational groups, researchers would ideally measure commitment in terms of the specific behaviours that have meaning to the work group being surveyed. Consistent with this view, the remainder

of this research will attempt to develop a measure that is generalisable for use with organisational professionals.

## 6.6 ITEM POOL FOR A NEW ORGANISATIONAL COMMITMENT QUESTIONNAIRE

The findings of the exploratory research assisted the creation of a set of items for inclusion in a new organisational commitment scale. Items were written to capture the content of the three dimensions developed above and are shown below in Table 6.1. Given the literature review that had taken place before this survey was undertaken, it is inescapable that the creation of scale items would be influenced by my prior knowledge of commitment scales. Indeed, one item in the new goals sub-scale was taken from the OCQ as it seemed well-suited to the task in-hand. Other items were generated afresh. It is important to emphasise at this point that there are many scales dealing with concepts that have a bearing on the portrayal of commitment developed in this exploratory study, for example, job involvement, innovation and creativity. In order to avoid influence from these, however, they were not referred to until after the items below had been written and tested in a pilot survey. This was, again, a conscious decision taken in an effort to develop sub-scales heavily influenced by the discourse that I had recorded and analysed rather than by extant scales. Even so, the question of how these scale items relate to other, extant, scales is important and needs to be addressed and this aspect is taken further in Chapter 9 where the results of the quantitative research are discussed.

## Table 6.1 Item Pool for a New Organisational Commitment Questionnaire

| |
|---|
| <u>Innovator Tendencies</u> |
| I suggest improvements to efficiency and quality. CQIT1 |
| I challenge the way things are done. CQIT2 |
| I contribute to new ways of working. CQIT3 |
| Developing my role in the organisation is an ever present part of my job. CQIT4 |
| I am more concerned about ensuring customer/ client satisfaction than I am with conforming to organisational policies. CQIT5 |
| I like to experiment with different systems and practices to improve things at work. CQIT6 |
| I prefer my work to be predictable and largely unchanging. CQIT7 (Reverse scored). |
| <u>Commitment to Goals</u> |
| My specific goals fit clearly with the overall aim of the organisation. CQG1 |
| My values and those of the organisation are very similar. CQG2 (This item is taken from the Organizational Commitment Questionnaire). |
| Working here allows me to meet my own personal goals. CQG3 |
| I believe in what this organisation is trying to achieve. CQG4 |
| I am very happy with the direction this organisation is taking. CQG5 |
| <u>Achiever Tendencies</u> |
| I usually achieve my work objectives on time. CQAT1 |
| I meet the agreed or accepted quality levels in my work. CQAT2 |
| Persisting with a task to make sure customer/client needs are met is important to me. CQAT3 |
| I see jobs through to the end even if it sometimes means affecting my social and home life. CQAT4 |
| In order to uphold standards of service staff I take work home. CQAT5 |
| I work at home over and above my contractual hours. CQAT6 |

[Item codes, e.g. CQIT1, are given to help tracking of these items throught the validation, in particular, section 7.9 and Appendix G].

Commitment to goals items were scaled with a verbally-anchored, seven-point Likert-type response scale (strongly agree to strongly disagree) to be consistent with previous research. Items relating to Innovation and Achievment were scaled using a six-point Likert-type response scale from 'never' to 'continually'. A pilot study was undertaken to assess the reliability of data collected with these items and the results of the pilot are contained in Appendix G. Some of the items were eliminated following the pilot as they showed poor correlations with other items. In view of the favourable results from the pilot study, the items were carried forward into a 'New Organisational Commitment Scale', the testing and validation of which is described in chapters 7 and 8 as part of the study into factors affecting commitment in professional organisations.

To summarise, having embarked upon the interviews with nothing other than a general feeling of unease with long-standing measures of commitment, the received wisdom of the organisational literature was countered sharply by this round of interviews. The central issues to emerge were: a readjustment of the goal component to reflect greater congruence between individuals and their organisation; the presence of a strong behavioural aspect that I have categorised as Achievement and Innovation; and the issue of whether the behavioural aspect is an integral part of commitment or an outcome of it. This last issue is somewhat intractable and is at odds with the commitment literature which has, by and large, seen commitment as an attitudinal construct. The following chapters now present the results of a large quantitative study which had the objective of validating the new measure of commitment and of exploring its relationship to perceived support, social exchange and professionalism.

# CHAPTER 7

# PSYCHOMETRIC PROPERTIES OF THE BEHAVIOURAL COMMITMENT SCALE

## 7.1 INTRODUCTION

This chapter presents the psychometric properties of the new organisational commitment scale (NEWOCS) prior to a detailed consideration of the tests for interaction effects in Chapter 8. Before these are presented, however, the characteristics of the samples obtained are examined and the data are screened against diagnostic procedures to ensure that they conform to the main assumptions of linear regression. Since the study utilises data drawn from samples, not populations, all statistics presented are sample estimates of population parameters. To avoid excessive repetition of the correct terminology for describing parameters of interest, they are described in the simpler, albeit strictly improper, form. For example, means and standard deviations are given to represent sample estimates of population means and standard deviations. For ease of interpretation hereafter, the term, behavioural commitment, is used to describe the new organisational commitment scale (NEWOCS) as it includes both attitudinal and behavioural components[1]. Affective (attitudinal) commitment is used to refer to commitment measured through the Affective Commitment Scale (ACS). Organisational commitment measured through a line-segment (ORGCOM) is referred to as a respondent-defined commitment since it captures each respondent's unique interpretation of commitment.

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Behavioural commitment is usually used to describe the process by which a person becomes committed, for example, by making high sacrifices or by making explicit, binding, behaviours. The use of the term 'behavioural' commitment in this case therefore reflects a new view of commitment as a behavioural outcome construct and not as a reason or basis to explain why someone is tied to an organisation.

## 7.2 LABELLING OF VARIABLES

The labelling of variables used throughout this thesis is shown below in Tables 7.1 and 7.2. Variables measured with a Likert scale were, where appropriate, summed and given the prefix 'SM' to denote the summation. For example, SMACS is the sum of scores given to the eight individual items in the Affective Commitment Scale. Line-segment measures were single item scales on which respondents scored between zero and 105.

**Table 7.1 Labelling of independent variables**

| Variable | Label | Format and Measure |
|---|---|---|
| Perceived prestige | PSG | Likert Scale |
| Age | AGE | Years |
| Sex | SEX | f=1, m=0 |
| Membership of trade union | UNION | no=0, yes=1 |
| Tenure with current employer | TENURE | Years |
| Scope for advancement | SMADV | Likert scale |
| Continuance commitment | SMCC | Likert scale |
| CC based on low alternatives | SMCCLA | Likert scale |
| CC based on high sacrifice | SMCCHS | Likert scale |
| Social exchange ideology | SMEI | Likert scale |
| Job security | SMJS | Likert scale |
| Commitment to the profession | SMPC | Likert scale |
| Personal decision autonomy | SMPMA | Likert scale |
| Belief in public service (the importance of the profession) | SMPMB | Likert scale |
| Profession as referent (use of infrastructure) | SMPMR | Likert scale |
| Belief in professional self-regulation | SMPMS | Likert scale |
| Total professionalism score | SMPRFM | Likert scale |
| No. of employers | DIFFORG | actual |
| Voluntary job changes | VOLCHG | actual |
| Involuntary job changes | INVOL | actual |
| Perceived organisational support | SMPOS | Likert scale |

**Table 7.2 Labelling of dependent variables**

| Variable | Label | Format & Measure |
|---|---|---|
| Affective Commitment | SMACS | Likert Scale |
| Behavioural Commitment | SMNEWOCS | Likert Scale |
| Respondent-defined commitment to organisation | ORGCOM | Line-Segment |
| Commitment to supervisor | SUPCOM | Line-Segment |
| Commitment to top management | TOPMAN | Line-Segment |
| Commitment to work group | WORKGP | Line-Segment |
| Commitment to supervisor | SMFCSSP | Likert Scale |
| Commitment to top management | SMFCSTM | Likert Scale |
| Commitment to work group | SMFCSWG | Likert Scale |
| Commitment to goals (a dimension of behavioural commitment) | SMCQG | Likert scale |
| Achievement (a dimension of behavioural commitment) | SMCQAT | Likert scale |
| Innovation (a dimension of behavioural commitment) | SMCQIT | Likert scale |

## 7.3 DESCRIPTIVE STATISTICS FOR THREE SAMPLES

### 7.3.1 Response Rate and Missing Values

Survey questionnaires were returned directly to the researcher and virtually all the returns were usable. The overall response rate of 31.3% was similar across the three sample groups and led to a total of 633 usable returns. Comparative response rate data are difficult to assess since surveys differ widely in terms of respondent characteristics (education level, sex, job type), size of survey and, importantly, in survey objectives. Wayne-Mitchell and Nugent (1991) report an average response rate from postal consumer and industrial surveys of 24% although Roth and BeVier (1998) claimed that 80% of mail surveys obtained above

a 31% response rate. This latter study however included surveys that were undertaken within companies using their internal mail and which typically yield higher response rates. Overall, the response rate appears to lie within the range obtained for postal surveys with similar purposes and designs (Diamantopoulos and Schlegelmilch, 1996) and, as such, is considered satisfactory. Most respondents completed the questionnaires fully as requested and the level of missing data was low. A few respondents inadvertently turned over two pages of the questionnaire together and there were some omissions to responses in the job security scale where respondents noted that they could not make an unequivocal assessment.

### 7.3.2 Personal Characteristics of Respondents

Descriptive statistics for the three samples are shown in Table 7.3. The two accounting groups contained about 70% males in contrast to the sample of chemists which was 87% male. Mean ages ranged from 37.9 years for CIMA members to 42.0 years for chemists. Mean tenure was 10-12 years. Sixty two per cent of the CIPFA sample were members of a trades union compared to less than 10% in the two other groups. Almost half the chemists possessed a doctorate.

CIMA members appeared to be the most mobile workforce given that about 17% had worked for one organisation compared to about 28% of CIPFA and RSC members. The chemists appeared to be the most stable in that 22% had worked for more than three organisations compared to about 34% of accountants. Chemists had also experienced less voluntary job change with about 35% changing job in the past 10 years compared to 42.8% of CIPFA and 51.4% of CIMA members sampled. The chemists, however, had experienced higher amounts of involuntary job change with 21.2% reporting at least one involuntary job change compared to 13.9% of CIPFA members and 13.0% of CIMA members.

**Table 7.3 Descriptive statistics for the three professional samples.**

| | RSC | CIPFA | CIMA | All |
|---|---|---|---|---|
| Response rate % | 32.9 | 31.6 | 27.8 | 31.3 |
| total responses | 329 | 166 | 138 | 633 |
| Male % | 87.2 | 69.3 | 70.8 | 78.8 |
| Union members % | 8.8 | 62.0 | 2.9 | 21.5 |
| Involuntary job change % | | | | |
| 0 | 78.8 | 86.1 | 87.0 | 82.1 |
| 1 | 15.0 | 12.0 | 8.7 | 12.8 |
| more than once | 6.2 | 1.9 | 4.3 | 5.1 |
| Voluntary job change % | | | | |
| 0 | 64.4 | 57.2 | 48.6 | 58.8 |
| 1 | 23.3 | 22.9 | 22.5 | 22.9 |
| more than once | 12.3 | 19.9 | 28.9 | 18.3 |
| Number of employers % | | | | |
| 1 | 28.2 | 27.7 | 16.7 | 25.4 |
| 2 | 27.9 | 16.9 | 21.7 | 23.5 |
| 3 | 21.8 | 21.7 | 26.8 | 22.7 |
| >3 | 22.1 | 33.7 | 34.8 | 28.4 |
| Qualification level % | | | | |
| up to first degree | 26.7 | 26.9 | 25.4 | 26.2 |
| post-graduate | 26.7 | 73.1 | 73.2 | 48.5 |
| doctorate | 46.6 | 0 | 1.4 | 24.3 |
| Mean age (years) | 42.0 | 39.6 | 37.9 | 40.4 |
| Mean tenure (years) | 12.0 | 10.9 | 10.2 | 11.3 |

The personal characteristics of the CIPFA sample are compared to the institution's total membership in Table 7.4. The sample shows a broad match with the sex and age profile of active CIPFA members and, on these characteristics, the CIPFA sample appears highly representative of the national membership.

**Table 7.4 Comparison of CIPFA membership with the CIPFA sample by sex and age group.**

| | CIPFA membership | CIPFA sample |
|---|---|---|
| male | 77.8 | 69.3 |
| female | 22.2 | 30.7 |
| <30 years | 9.7 | 12.7 |
| 30-39 | 34.6 | 39.1 |
| 40-49 | 37.9 | 36.8 |
| 50-59 | 16.3 | 11.4 |
| >= 60 | 1.5 | - |

[CIPFA membership as at 1.1.1997]

The composition of RSC members is shown in Table 7.5 below. The proportion of male RSC members was 87.2% against 82.7% in the full RSC membership. The proportion of Fellows in the sample was 14% compared to 20.7% after adjusting for membership grades not included in this survey, that is, Student and Associate. Bearing in mind that 40% of Fellows are aged 65 or over, and thus would not have been surveyed, the two proportions are much closer than at first seems. The proportion of Members was similar at 86% and 79%. The sample was also similar according to age group except for members aged 50 or over. This is attributed to human resource management policies in the pharmaceutical sector that have led to the departure of staff in this age group through early retirement. Overall, the sample of RSC members appears highly comparable to the full membership of the Society when judged on these personal variables.

**Table 7.5 Comparison of RSC membership with the RSC sample**

| | Sample RSC, % | RSC Membership (Adjusted) % |
|---|---|---|
| Men | 87.2 | 82.7 |
| Fellows | 14 | 20.7 |
| Members (1) | 86 | 79.2 |
| Age 25-29 | 8.3 | 6.6 |
| 30-39 | 39.5 | 32.3 |
| 40-49 | 34.6 | 30.9 |
| 50-65 | 17.6 | 30.2 |

(1) Includes Graduates and Licentiates. RSC membership as at 1.1.1997. Source: *Membership Statistics Annual Report 1997.*

It is also worth noting that 9.5% of all RSC members work in the pharmaceutical sector and, having adjusted for persons aged over 65 and for overseas members, the sample obtained represents about 1.3% of practising professional members of the RSC. Furthermore, the average duration of membership of the professional body is 34 years for Fellows and 16 years for Members and Licentiates. Thus it is reasonable to assume that respondents, on average, had been members the Society for many years and this is important for the development of professional cognitions among individuals. The overall picture of the three professional samples is that they are broadly similar in terms of personal characteristics and job related changes. They were mostly male, aged around 40 and had worked for their current employer for about 11 years. Most had not experienced involuntary change of employer in the past ten years.

## 7.4 CHANGES IN CONTINUOUS VARIABLES WITH GROUPING VARIABLES

It is useful to assess whether the average values of key dependent and independent variables differed substantially across the grouping variables in the study. Large differences would suggest that the sample type itself has a moderating effect and, if the average scores do not differ markedly, then there is a basis for aggregating the three samples for the purposes of inferential statistical analysis.

### 7.4.1 Sex Differences

For the combined sample, males reported higher affective commitment (SMACS, t=1.88, df=626, p=.061) and behavioural commitment (SMNEWOCS, t=1.74, df=607, p=.083). Men reported significantly higher commitment to the work group (WORKGP t=3.92, df=628, p=.000) but not to any other local focus of commitment. Women reported significantly more job security (t=-4.29, df=236, p=.000) and significantly lower continuance commitment (t=3.13, df=624, p=.002). Thus, being male associated with slightly higher levels of commitment to some foci. Being female associated with greater job security and lower levels of continuance commitment. Males had longer tenure than women, (12.3 years compared to 7.5 years, t=7.70, df=358, p=.000) and tended to be older (42.2 years compared to 33.7 years, t=14.3, df=335, p=.000).

### 7.4.2 Union Membership

Union membership associated with significantly lower mean scores on many variables. Union members reported less organisational commitment on all three measures (SMNEWOCS t=2.98, df=192, p=.003; SMACS t=2.29, df=197, p=.023; ORGCOM t=1.70, df=619, p=.089) and less commitment to the supervisor, top management and to the work group (SMFCSSP t=1.98, df=614, p=.048; SMFCSTM t=1.90, df=616, p=.057; SMFCSWG t=3.46, df=195, p=.001). Union members also reported less perceived

organisational support (t=4.16, df=625, p=.000), less professionalism (SMPRFM t=3.33, df=611, p=.001) and higher continuance commitment (SMCC t=-2.36, df=624, p=.019).

### 7.4.3 Professional Grouping

One-way analysis of variance (ANOVA) revealed some differences between mean scores for professional groups. Chemists reported the lowest mean score for commitment to top management. CIPFA members reported the lowest mean scores for behavioural commitment (SMNEWOCS), commitment to top management (TOPMAN) and commitment to the work group (SMFCSWG). CIPFA members also reported the lowest perceived organisational support (SMPOS) and the lowest professionalism (SMPRFM).

Given that over 60% of CIPFA accountants were union members, it was important to partial out the effect of union membership when comparing CIPFA to other groups. When 1-way ANOVA was performed on measures of commitment for respondents who were not in a union, no significant differences were observed across the three groups. However, employment in local government appears to be associated with lower perceived organisational support as the Bonferroni test confirmed the mean POS score to be significantly different from either the chemists or the private sector accountants. For professionalism, the local government group scores were significantly different to the chemists but not different to the private sector accountants ($p<.05$).

For men, the only line-segment measure of commitment to differ between professional groups was to top management (TOPMAN, F=4.44, F prob .012, df=494). The Bonferroni test showed that the mean of the RSC members at 59.8 was significantly lower than for CIMA members who averaged 68.2 (p=.05). For women, the means of line-segment variables were not significantly different across the three groups (1-way ANOVA, p=.05). For men, mean ages were CIMA 39.9 years, CIPFA 42.0 years and RSC 43.1 years. Homogeneity of variance was indicated (Levene statistic 0.37. p=.688) and, using one-way ANOVA, the null hypothesis that mean ages are the same is rejected (F=5.31, F prob

=.0052). Mean tenure for men was not significantly different between professional groups (F=0.65, F prob =.52) with average tenure 12.3 years (n=499). The mean ages and tenure of women did not differ significantly across the three sample groups.

**Table 7.6. Variable means by main grouping variables**

| Variable | All cases | Sex | | Union | | Profession | | |
|---|---|---|---|---|---|---|---|---|
| | | m | f | y | n | RSC | CIMA | CIPFA |
| SMNEWOCS | 53.3 | 53.6 | 52.0a | 50.9c | 53.9 | 53.3 | 55.7 | 51.5c |
| SMACS | 35.1 | 35.5 | 33.9a | 33.5b | 35.6 | | | |
| ORGCOM | 73.8 | | | 70.8a | 74.6 | | | |
| TOPMAN | 62.1 | | | | | 59.8a | 65.1 | 64.2 |
| SMFCSTM | 14.0 | | | 13.2a | 14.2 | | | |
| SUPCOM | 73.0 | | | | | 71.7 | 71.9 | 76.7a |
| WORKGRP | 85.1 | 86.4 | 80.1c | | | | | |
| SMFCSWG | 23.0 | | | 22.1c | 23.3 | 23.2 | 23.4 | 22.4b |
| SMPOS | 39.9 | | | 36.4c | 40.9 | 40.3 | 42.3 | 37.0c |
| SMPRFM | 76.8 | | | 73.5c | 77.7 | 78.7 | 76.2 | 73.6c |
| SMEI | 14.6 | | | | | 14.8 | 13.7b | 14.8 |
| SMJS | 14.1 | 13.8 | 15.2b | 13.4b | 14.3 | 13.8 | 14.9c | 14.0 |
| SMCC | 24.1 | 24.6 | 22.1c | 25.5b | 23.7 | 25.6c | 20.3 | 24.3 |

[a = p< 0.1, b = p<.05, c = p<0.01. For instance, the difference between the mean scores for SMNEWOCS was significant at p< 0.1. Union membership: y=members, n=non-members].

## 7.4.4 Summary

ANOVA tests revealed some statistically significant differences in the mean scores on variables although the arithmetic differences were usually small. (It is a characteristic of the large samples obtained that small differences prove to be statistically significant). The main findings are that being female or a union member associated with lower commitment to some foci. Perceived support and levels of professionalism were lowest in the public

sector, CIPFA, sample. These findings support the search for interaction effects in separate groups, but, as the differences in group scores were small, there is also a basis for combining the three samples and conducting certain analysis at the aggregate level.

## 7.5 RELIABILITY OF ITEM SCORES

### 7.5.1 Internal Consistency Reliability

Thompson (1994) advises that it is improper to talk of a test or measure as being reliable or unreliable. Strictly, it is the scores obtained through a test or measure that are assessed for reliability. A test that obtains reliable scores in one setting may obtain unreliable scores in another and so it is incorrect to imply a generalisable reliability level for a test. This distinction will be upheld throughout this analysis and any subsequent reference to the reliability of the scales used merely reflects common practice and the use of simple English. Internal consistency reliability is commonly assessed using coefficient alpha (Cronbach, 1951). Alpha is essentially a measure of the average intercorrelation between scale items and typical values lie between 0.7 and 0.9, with 0.7 seen as a widely accepted minimum level (DeVellis, 1991, p.85; Peterson, 1994). Alpha increases with the number of items in a scale hence it is important to assess the correlations between individual items and the total additive scale score to identify, and if necessary eliminate, items that are scored inconsistently. For the full sample of over 600 respondents, the alpha values obtained for scores obtained by each scale are shown in Table 7.7.

**Table 7.7 Internal consistency reliability of measurement scales**

| Scale | Initial Number of items | Alpha | Item Coding and Notes |
|---|---|---|---|
| Scope for advancement | 2 | .79 | ADV |
| Affective commitment | 8 | .82 | 'ACS. AC1 and AC4_R loaded on separate factors |
| Continuance commitment - low alt. | 3 | .78 | CCLA |
| Continuance commitment, high sac. | 3 | .72 | CCHS |
| Achiever tendencies | 4 | .83 | CQAT (New scale). CQAT3 showed poor item to total correlation |
| Commitment to goals | 5 | .82 | CQG |
| Innovator tendencies | 5 | .83 | CQIT. CQIT8 showed poor item to total correlation |
| Social Exchange Ideology | 4 | .73 | EI |
| Commitment to supervisor | 4 | .75 | FCSSP. FCSSP2 showed poor item to total correlation |
| Commitment to top management | 4 | .88 | FCSTM |
| Commitment to work group | 4 | .80 | FCSWG |
| Job security | 3 | .61 | JS |
| Professional commitment | 5 | .85 | PC |
| Professional belief in public service | 4 | .68 | PMB. Excl. PM47B gave alpha =.72 |
| Professional autonomy | 4 | .72 | PMA |
| Profession as referent | 4 | .53 | PMR. Excl. PM6R and PM26_R gave alpha = .72 |
| Professional self-regulation | 4 | .68 | PMS. Excl. PM8S gave alpha=.69 |
| Perceived organisational support | 9 | .93 | POS |
| Professionalism | 9 | .79 | PC_A. Combination of PC (5 items) and PMA (4 items). |

Given satisfactory score reliability, the following scales were accepted without modification; scope for advancement (ADV), affective commitment (ACS), continuance commitment - low alternatives (CCLA), continuance commitment - high sacrifice (CCHS), commitment to goals (CQG), social exchange ideology (EI), commitment to top management (FCSTM), commitment to work group (FCSWG), job security (JS), professional commitment (PC), professional autonomy (PMA) and perceived organisational support (POS).

To create a new behavioural commitment scale with good reliability, item AT3 was dropped from the Achiever sub-scale and item IT8 dropped from the Innovator sub-scale. The new organisational commitment scale (SMNEWOCS) thus comprised the sum of CQG (5 items), CQAT (3 items) and CQIT (4 items) and yielded an alpha of .85..

Some items were eliminated from the professionalism sub-scales due to low item-total correlations (as shown in Table 7.7) leading to the following scales; professional commitment (5 items), professional autonomy (4 items), professional belief in public service (3 items), profession as referent (2 items), and professional self-regulation (3 items). However, the results of preliminary regression analysis showed that only professional commitment and professional autonomy explained variance in the three measures of organisational commitment and the resulting professionalism scale (SMPC_PMA) used was a 9-item composite of the two aspects (alpha = .79)

The two continuance commitment scales were also added together creating a 6-item scale with alpha of .82. Additional details of the final versions of each scale are given in Appendix E.

### 7.5.2 Stability of the Behavioural Commitment Scale

Another aspect of a scale's reliability is its stability over a period of time assuming that nothing has intervened to alter the respondents' attitudes or traits under investigation. The stability of the scales obtained from the literature and used in the main survey was not assessed again but it was felt important to examine the stability of the new behavioural commitment scale constructed for this study. This was conducted on a sample of professionals employed in the teaching faculty of a University College. Participants were sent two identical surveys with a request to complete and return one survey shortly after receipt and the other survey two weeks later. Coding on the surveys allowed them to be matched to respondents and 49 surveys were returned at time 1 and 35 at time 2. Correlations (n=35) between the summed scale scores and times 1 and 2 were .85 for the achievement subscale, .87 for the commitment to goals subscale, and .89 for the innovation subscale, suggesting a high level of temporal stability.

## 7.6 TESTING FOR THE ASSUMPTIONS OF LINEAR REGRESSION

Boxplots, stem-and-leaf diagrams and normal probability plots were inspected for all interval-level dependent and independent variables. While, strictly, the data are ordinal, it is conventional in organisational and marketing research to treat such data as interval level on the grounds that where such an assumption leads to useful information and understanding about a topic then it should be done (Baron, 1996 p.50; Lord and Novick, 1968, p.22; Nunally, 1967, p.17) and this is taken to be the case here. The four line-segment variables were all negatively skewed, that is, tailed towards smaller values and the K-S Lilliefors statistic was small and significant in each case indicating a non-normal distribution. Age and tenure were positively skewed (tailed towards larger values) and departure from a normal distribution was again supported by highly significant K-S Lilliefors statistics. Normal distributions were observed for professionalism (SMPC_PMA), the Affective Commitment Scale (SMACS), the New Organisational Commitment Scale (SMNEWOCS) and commitment to supervisor (SMFCSSP). However,

with large data sets, most goodness of fit tests will reject the hypothesis that data are normally distributed (Norusis, 1993 p.191), and the issue becomes one of judging how seriously the data depart from normality and whether the departure confounds the analysis of results.

Multiple regression does not require variables to be normally distributed[2] and, to ascertain that the data conformed to the assumptions required by linear regression, tests were carried out on the main variables. Different measures of commitment were regressed on key independent variables such as perceived organisational support, social exchange ideology, professional commitment and tenure.

Histograms of regression studentised residuals were inspected for the dependent variable and, by visual inspection, were judged to be close to a normal distribution, as required for regression analysis. Normal probability plots (Norusis, 1993, p.189) supported the conclusion that residuals were approximately normally distributed as, in all cases, the expected plots of cumulative percentage versus observed cumulative percentage closely fitted a straight line.

Linearity and equality of variance were assessed by plotting studentised residuals against the independent variables. Patterns or clustering among residuals are indications that the assumptions of linearity and equality of variance are violated (Norusis, 1993, p.327) but residuals were adjudged to be randomly scattered when plotted against professional commitment, perceived support and exchange ideology. The results of these tests give confidence that data meet the key assumptions required for linear regression, that is, residuals are normally distributed, the relationships are linear, and there are normal or near-normal distributions of commitment for given values of key independent variables. In view of these encouraging findings the search for moderator effects using multiple moderated regression can be undertaken confidently.

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[2]While input data do not need to be normally distributed, the distribution of residual values should be. Residuals are the differences between an observed value and the value predicted by the regression model (Norusis, 1993, p.324).

**Table 7.8 Means, medians and standard deviations for main variables.**

| Variable | n | Mean | std. dev. | Median | KSL | KSL sig. |
|---|---|---|---|---|---|---|
| SMACS | 629 | 35.1 | 8.7 | 36.0 | .032 | .186 |
| SMNEWOCS | 610 | 53.3 | 9.6 | 53.0 | .032 | .197 |
| ORGCOM | 626 | 73.8 | 22.7 | 80.0 | .121 | .000 |
| TOPMAN | 631 | 62.1 | 25.8 | 66.0 | .062 | .000 |
| WORKGRP | 631 | 85.0 | 16.4 | 88.0 | .120 | .000 |
| SUPCOM | 629 | 73.0 | 23.7 | 79.0 | .107 | .000 |
| SMFCSSP | 617 | 17.0 | 4.7 | 17.0 | .036 | .05 |
| SMFCSTM | 619 | 14.0 | 5.6 | 14.0 | .070 | ..000 |
| SMFCSWG | 621 | 23.0 | 3.4 | 24.0 | .075 | .000 |
| AGE | 626 | 40.4 | 8.6 | 40.0 | .071 | .000 |
| SMADV | 629 | 8.2 | 3.22 | 8.0 | .079 | .000 |
| SMCC | 627 | 24.1 | 8.1 | 24.0 | .048 | .002 |
| SMEI | 629 | 14.6 | 4.7 | 14.0 | .052 | .000 |
| SMJS | 607 | 14.1 | 3.76 | 15.0 | .061 | .000 |
| SMPOS | 628 | 39.9 | 11.0 | 41.0 | .047 | .002 |
| SMPRFM | 626 | 42.8 | 8.9 | 43.0 | .031 | >0.2 |
| PSG | 627 | 4.1 | 1.8 | 4.0 | .149 | .000 |
| TENURE | 630 | 11.3 | 8.6 | 8.5 | .134 | .000 |

[KSL = K-S Lilliefors statistic, significance values above .05 suggest a normally distributed variable].

## 7.7 THE ZERO-ORDER CORRELATION MATRIX

Table 7.9 shows zero-order correlations, (Pearson's r), between variables. Many of the moderate to strong correlations, (.5 to .7), arise between variables that share conceptual similarities, such as SMACS which measures affective (attitudinal) commitment and SMNEWOCS which includes attitudinal and behavioural aspects. For the most part, there are no unexpected strong correlations and there are many moderate, weak and non-significant correlations. Given that the main relationships in this study are between

## Table 7.9: Zero - Order Correlation Matrix

| | | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | SMNEWOCS | 85 | 17 | 56 | -27 | 60 | 61 | 35 | -24 | -14 | -28 | 72 | 79 | 66 | -14 | 44 | 62 | 50 | 27 | 41 | 39 | 16 | 12 | 15 | 55 | 51 | 28 | 11 | 53 | 34 |
| 1 | AGE | | 85 | 15 | ns | 23 | 14 | -17 | 30 | 25 | 28 | 11 | 17 | ns | ns | 10 | 20 | 11 | -15 | ns | 10 | 16 | ns | 10 | ns | 10 | 12 | 53 | 12 | 17 |
| 2 | ORGCOM | | | 82 | -29 | 64 | 62 | 33 | -11 | ns | -17 | -29 | 64 | 16 | -20 | 41 | 55 | 38 | 22 | 31 | 23 | 12 | ns | 12 | 56 | 36 | 48 | 12 | 72 | 58 |
| 3 | PSG | | | | 82 | -33 | -34 | -34 | 24 | 15 | 27 | -12 | -35 | ns | ns | -24 | -32 | -11 | -21 | -23 | -20 | ns | -10 | -22 | -45 | -29 | -25 | ns | -36 | -20 |
| 4 | SMACS | | | | | 82 | 96 | 37 | -14 | ns | -22 | 27 | 71 | 17 | -12 | 46 | 60 | 46 | 25 | 38 | 26 | 16 | ns | 16 | 68 | 42 | 42 | 30 | 59 | 48 |
| 5 | SMACSID | | | | | | 83 | 38 | -20 | -09 | -27 | 30 | 69 | 20 | -13 | 48 | 61 | 48 | 27 | 37 | 27 | 14 | ns | 17 | 66 | 42 | 41 | 21 | 59 | 47 |
| 6 | SMADV | | | | | | | 79 | -34 | -17 | -43 | 10 | 43 | 12 | ns | 29 | 28 | 25 | 33 | 32 | 20 | 09 | ns | 23 | 56 | 35 | 23 | 10 | 29 | 24 |
| 7 | SMCC | | | | | | | | 82 | 89 | 90 | -09 | -22 | -20 | 10 | -13 | -20 | -11 | -30 | -27 | -18 | ns | -08 | -10 | -31 | -30 | ns | 23 | -21 | ns |
| 8 | SMCCHS | | | | | | | | | 72 | 61 | ns | -09 | -15 | 11 | ns | -11 | ns | -18 | -18 | -08 | ns | ns | ns | -16 | -18 | ns | 24 | -15 | ns |
| 9 | SMCCLA | | | | | | | | | | 78 | -11 | -29 | -20 | ns | -19 | -25 | -16 | -36 | -30 | -24 | ns | ns | -13 | -39 | -35 | -08 | 18 | -22 | -11 |
| 10 | SMCQAT | | | | | | | | | | | 83 | 28 | 39 | -09 | 19 | 33 | 25 | 13 | 16 | 26 | ns | ns | ns | 17 | 26 | 09 | ns | 25 | 19 |
| 11 | SMCQG | | | | | | | | | | | | 82 | 23 | -15 | 48 | 66 | 47 | 28 | 45 | 29 | 19 | 11 | 18 | 71 | 48 | 39 | 13 | 62 | 40 |
| 12 | SMCQIT | | | | | | | | | | | | | 83 | ns | 20 | 24 | 31 | 15 | 22 | 31 | 09 | 09 | ns | 14 | 32 | ns | ns | 5 | 11 |
| 13 | SMEI | | | | | | | | | | | | | | 73 | ns | -12 | -10 | ns | -10 | ns | ns | ns | -09 | -14 | -08 | -15 | ns | -19 | -17 |
| 14 | SMFCSSP | | | | | | | | | | | | | | | 75 | 56 | 51 | 19 | 24 | 18 | 10 | ns | 10 | 49 | 27 | 46 | ns | 39 | 24 |
| 15 | SMFCSTM | | | | | | | | | | | | | | | | 88 | 37 | 23 | 32 | 28 | 13 | 10 | 13 | 58 | 39 | 31 | 10 | 69 | 30 |
| 16 | SMFCSWG | | | | | | | | | | | | | | | | | 80 | 15 | 31 | 23 | 12 | ns | 18 | 37 | 35 | 28 | 12 | 31 | 35 |
| 17 | SMJS | | | | | | | | | | | | | | | | | | 61 | 18 | 24 | ns | ns | ns | 31 | 26 | 15 | ns | 24 | 09 |
| 18 | SMPC | | | | | | | | | | | | | | | | | | | 85 | 22 | 19 | 15 | 22 | 40 | 8 | 18 | ns | 26 | 25 |
| 19 | SMPMA | | | | | | | | | | | | | | | | | | | | 72 | 09 | ns | ns | 25 | 67 | 12 | ns | 21 | 20 |
| 20 | SMPMB | | | | | | | | | | | | | | | | | | | | | 72 | 12 | 08 | 15 | 19 | ns | 11 | 10 | 10 |
| 21 | SMPMR | | | | | | | | | | | | | | | | | | | | | | 72 | 20 | 11 | 10 | 12 | ns | 10 | ns |
| 22 | SMPMS | | | | | | | | | | | | | | | | | | | | | | | 69 | 29 | 17 | 14 | ns | 13 | 19 |
| 23 | SMPOS | | | | | | | | | | | | | | | | | | | | | | | | 93 | 43 | 38 | ns | 56 | 36 |
| 24 | SMPRFM | | | | | | | | | | | | | | | | | | | | | | | | | 79 | 20 | 09 | 30 | 29 |
| 25 | SUPCOM | | | | | | | | | | | | | | | | | | | | | | | | | | 08 | 49 | 51 |
| 26 | TENURE | | | | | | | | | | | | | | | | | | | | | | | | | | | ns | ns |
| 27 | TOPMAN | | | | | | | | | | | | | | | | | | | | | | | | | | | | 44 |
| 28 | WORKGRP | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

ns = non significant. Minimum significance level shown = $p < 0.05$

Alpha shown on the diagonal. Allowing for missing data, n was typically in the range 610-630 for the above correlations.

commitment to the organisation, perceived organisational support, professionalism and exchange ideology, a subset of the correlation matrix is shown in Table 7.10 for clarity.

**Table 7.10 Zero-order correlations between key variables**

| | SMNEWOCS | SMPOS | SMEI | SMPRFM |
|---|---|---|---|---|
| SMACS | 60 | 68 | -12 | 42 |
| SMNEWOCS | - | 55 | -14 | 51 |
| SMPOS | | - | -14 | 43 |
| SMEI | | | - | -08 |

[Decimal points omitted. All correlations significant at p<.05].

Social exchange ideology had a weak negative association with both attitudinal and behavioural commitment to the organisation, to perceived organisational support and to professionalism. Perceived organisational support showed a strong correlation of .68 with the Affective Commitment Scale compared to .64 found by Eisenberger et al (1990, p.57) and .70 by Shore and Tetrick (1991, p.639). Perceived support also showed a moderate correlation with professionalism but no comparable data were found in the literature for this association.

Zero-order correlations between commitment and tenure were; for affective commitment, .31 (p=.000), for behavioural commitment, .11 (p=.007) and for ORGCOM, .12 (p=.007). The first-order partial correlation (controlling for age) was non-significant for behavioural commitment (SMNEWOCS) and for ORGCOM and thus tenure would not appear to affect commitment when measured in this manner. The partial correlation for affective commitment (SMACS) and tenure was .22 (p=.000) indicating a relationship between the two variables. This pattern was repeated in the CIMA sample, but in the RSC sample no commitment/tenure associations was found and, for CIPFA, positive correlations with tenure were observed for both ORGCOM (.19, p=.013) and SMACS (.32, p=.000).

Using summated rating scales, behavioural commitment (SMNEWOCS) correlated highly with commitment to supervisor (SMFCSSP, .44, p=.000), to top management (SMFCSTM, .62, p=.000) and to workgroup (SMFCSWG, .50, p=.000). When measured through respondent-defined, line-segment, scales, the correlations fell to .28 for SUPCOM, .53 for TOPMAN and to .34 for WORKGP.

Zero-order correlations for continuance commitment (perceptions of exit barriers) with age were .3 (p=.000) and .23 (p=.000) with tenure. The first-order partial correlation of continuance commitment with age, controlling for tenure, was .21 (p=.000). Continuance commitment showed negative zero-order correlations with behavioural commitment (-.24, p=.000), with affective commitment (-.14, p=.001) and with ORGCOM (-.11, p=.007). Second-order partial correlations, controlling for age and tenure, were -.31 for behavioural commitment, -.25 for affective commitment and -.18 for ORGCOM (all p=.000).

Zero-order correlations between continuance commitment and commitment to supervisor (SMFCSSP) were -.13 (p=.001), with commitment to top management -.20 (p=.000) and with commitment to work group -.11 (p=.008). Second order partial correlations, controlling for age and tenure, were -.18 (p=.000), -.29 (p=.000), and -.14 respectively.

Zero-order correlations (p<.01) between behavioural commitment (SMNEWOCS) and the dimensions of professionalism were .41 with commitment to the profession (SMPC), .39 with professional autonomy (SMPMA), .16 with the importance of the profession (SMPMB), .12 with profession as referent (SMPMB), and .15 with belief in professional regulation of standards (SMPMS). When age and tenure were partialled-out, the correlations were virtually the same. Inspection of the full correlation matrix shows that regression analysis of the relationships between variables is justifiable on the grounds of the spread of correlation sizes and signs, and, hence, that it is worthwhile to proceed with the examination of moderating effects. The zero-order relationships between social exchange and commitment are not as strong as anticipated from the pilot study or from previous research (Eisenberger et al., 1986) but this does not prevent the examination of relationships between them.

## 7.8 FACTOR ANALYSIS

The survey instrument embodied 18 scales made up from 84 items in addition to personal and demographic questions. Factor analysis of the set of scale items should lead to items from distinct scales loading onto separate factors. However, some factors may load items from conceptually similar constructs, for example, affective commitment and the new items that tap into commitment to organisational goals.

### 7.8.1 Factor Rotation, Extraction and Loadings

For the results of factor analysis to be robust, it is necessary for similar factor structures to emerge when different methods of extraction and rotation are applied. Many of the scales used are correlated and so oblique rotation which allows for possibility that factors may be associated was preferred (Child, 1970 p.60; Dunteman, 1989 p.64). The choice of extraction method is more subjective as there appear to be no firm decision rules to follow. Principal Components extraction is one of the most commonly used methods (Bryman and Cramer, 1997, p.279; West, 1990, p.137). Principal Components extraction makes no specific demands in terms of data requirements although the technique assumes that the instruments used to measure variables are perfectly reliable, that is, error free. In the alternative method of Principal Axis Factoring, only variance common to the instruments is analysed (Bryman and Cramer, 1997 p.280). Maximum Likelihood extraction requires variables to be normally distributed (West, 1990 p.142) and has the attraction of incorporating a goodness of fit assessment for a particular factor structure. Hence the most appropriate choice of method appears to be Principal Axis factoring with oblique rotation, although similar structures should be observed with other methods if the structure is to be considered robust.

Another decision criterion concerns the size of the factor loadings, that is, what should be the minimum value below which a loading is ignored? Using the Burt-Banks formula (Child, 1970, p.97) for a data set of over 600 individuals and 84 items, the significance

levels for factor loadings at the 1 per cent significance level is .12. While statistically significant, loadings this small would be unhelpful in arriving at a 'clean' structure. It is commonplace to adopt a more arbitrary, but practical, cut-off and a loading of 0.3 was adopted (Child, 1970, p.45; Spector, 1992 , p.55).

### 7.8.2 Results of Exploratory Factor Analysis

In total, 18 Likert scales and four line-segment scales were factored. Principal Axis factoring and oblique rotation yielded 19 factors in total of which 13 had an eigenvalue above unity, a commonly used cut-off point in factor analysis (Child, 1970, p.43). These 13 factors accounted for 50.3% of variance and the items loading onto them are summarised in Table 7.11. The scales that did not load onto factors with an eigenvalue above unity were job security, commitment to supervisor, scope for advancement, and the three line-segments measuring commitment to the organisation, supervisor and work group. However, all these scales did load onto separate factors with moderate to high loadings (.3 to .7). The loading onto Factor 16 of six of the eight affective commitment items (loadings from .28 to .73) indicates that the items were not redundant with each other. Of the remaining two affective commitment items, AC1 loaded onto Factors 1, 3 and 12, and AC4 loaded onto Factor 12. Both AC1 and AC4 relate to the individual's desire to stay with the organisation whereas the remaining items tap into belief in goals and sense of belonging and this suggests that desire to stay was not occupying the same conceptual space in the minds of respondents as other commitment items.

**Table 7.11 Factor Loadings (Principal Axis Factoring with Oblique Rotation)**

| Factor | Scale Items (Loadings) | Eigenvalue |
|---|---|---|
| 1 Goals | CQG (.29-.59), AC2 (.28) | 18.44 |
| 2 Innovator | CQIT (.23-.83), CQAT3 (.33) | 4.11 |
| 3 Continuance Commitment | CC (.49-.72), AC1 (.29) | 3.43 |
| 4 Professional Commitment | PC (.58-.80) | 2.71 |
| 5 Exchange Ideology | EI (.50-.75) | 2.09 |
| 6 Commitment to Top Management | FCSTM (.47-.72), TOPMAN (.44) | 1.86 |
| 7 Commitment to work group | FCSWG (.51-.76) | 1.81 |
| 8 Self regulation | PMS (.30-.75) | 1.67 |
| 9 Belief in public service | PMB (.40-.73) | 1.48 |
| 10 Professional Autonomy | PMA (.40-.72) | 1.34 |
| 11 Achievement | CQAT4/5/6 (.64-.97) | 1.17 |
| 12 Perceived Support | PS (.45-.74) AC1 (.24) | 1.13 |
| 13 Profession as referent | PM1R, 36R, 6R (.29-.76) | 1.01 |

[For example, F1 loaded CQG items with loadings .29 to .59 and item AC2 with a loading of .28. For coding and wording of scale items see Appendix E].

It is important to recall that this preliminary factor analysis was undertaken to assess whether respondents were discriminating between the scales contained in the survey and, by and large, this appears to be the case. Child (1970, p.44) observed that when more than 50 variables are factored, too many factors are extracted and this characteristic of factor analysis could explain the structure observed. Several substantial correlations between factors were found indicating that oblique rotation was the most appropriate method. The highest factor correlations were between;

- affective commitment and perceived organisational support (.47)
- commitment to goals (new scale) and perceived organisational support (.40)
- innovator behaviours and achiever behaviours (.39)
- affective commitment and commitment to goals (.39)
- affective commitment and commitment to top management (.35)
- commitment to goals and commitment to top management (.33)
- commitment to goals and professional commitment (.29)
- professional commitment and perceived organisational support (.30).

The alternative approach of Principal Components Analysis with Varimax rotation gave 19 factors with an eigenvalue above unity accounting for 65.2% of variance. All substantial scales loaded highly onto separate factors except, and in contrast to Principal Axis factoring, that Factor 1 loaded perceived organisational support (factor loadings, .70-.84), commitment to goals (.44-.60) and affective commitment (.25-.53). Maximum Likelihood extraction revealed 13 factors with Factor 1 loading highly perceived organisational support, commitment to goals, and affective commitment. Other factors also loaded distinct scales.

### 7.8.3 Confirmatory Factor Analysis

The primary scales used in this study were also assessed using Confirmatory Factor Analysis (CFA). (See section 7.9.3.2 for an explanation of the statistics generated). Assuming unidimensional structures, scales demonstrated the following properties. Social exchange; chi-square 4.0, df=2, p=.137, CFI=.995, GFI=.997, RMSEA=.041.Perceived Organisational Support; chi-square 115.5, df=27, p=.000, CFI=.974, GFI=.957, RMSEA=.128.Continuance Commitment; chi-square 100.7, df=9, p=.000, CFI=.925, GFI=.943, RMSEA=.128. Affective Commitment Scale; chi-square 156.6, df=20, p=.000, CFI=.908, GFI=.930, RMSEA=.109.

Shore and Tetrick (1991, p.639) reported CFA results for the ACS, CCS and POS scales and found acceptable model fit for unidimensional scales. In the present study however, a two factor model for continuance commitment in which the 'high sacrifice' and 'low alternatives' items load onto different factors gave a much better fit to the data (chi-square 29.4, df=8, p=.000, CFI=.982, GFI=.984, RMSEA=.066) suggesting that continuance commitment is better seen as a bi-dimensional construct. This finding is consistent with McGee and Ford (1987) who also found better fit from a two factor CCS scale. The unidimensional model of the Affective Commitment Scale gave barely acceptable fit and a better fit was obtained from a two-factor solution in which the six identification items loaded onto one factor and the two desire-to-stay items loading onto another (chi-square 121.1, p=.000, df=19, CFI=.932, RMSEA=.097). The factor intercorrelation was .65 and the two-factor solution gave improved model fit in each of the three samples with correlations between the two factors ranging from .55 (CIMA), .64 (RSC) to .77 (CIPFA).

As this study is thought to be the first use of the Perceived Organisational Support scale on a British sample, it is worth noting the good fit obtained for that scale. Moorman, Blakely and Niehoff (1998, p.353), in comparison, reported a worse chi- square to degrees of freedom ratio (4.7), compared to the 4.3 observed here, and a CFI of .82 relative to the far more favourable .974 found here.

Professionalism, however, is not a unidimensional construct and several factor models were tested to determine the best fitting model. As expected, a single factor model (21 items) gave a poor fit to the data (chi-square 901, df=189, p=.000, CFI=.47). The theorised five factor model containing all 21 items gave barely acceptable fit (chi- square 521, df=179, p=.000, CFI=.894, RMSEA=.058) but when the items with the poorest factor loadings were dropped to give a five factor, 17-item, scale the fit improved considerably (chi-square 330.8, df=109, p=.000, CFI=.923, RMSEA=.06). There is little comparative data in the literature with which to compare these results for the professionalism scale although Kennedy and Ramsey (1995) also reported an unsatisfactory 1-factor solution (CFI=.69). They obtained an improved, albeit still poor, fit using a trimmed, 13-item, 5-factor, solution (CFI=.833). Because the validation of the New Organisational

Commitment Scale is a focal point of this thesis, the results of its scrutiny with confirmatory factor analysis are reported in full in the next section.

## 7.9 PSYCHOMETRIC PROPERTIES OF THE BEHAVIOURAL COMMITMENT SCALE

The content validity of the new organisational commitment scale (NEWOCS) is high in view of the exploratory study underpinning item generation (chapter 6). Good reliability, a requirement of validity, has also been indicated in a pilot sample (see Appendix G). The remainder of this chapter deals with demonstrating construct validity for the new scale and follows the general procedures for scale validation, (see Cox and Ferguson, 1994; DeVellis, 1991; Hinkin, 1998; Spector, 1992) namely, reliability analysis, exploratory and confirmatory factor analysis.

### 7.9.1 Reliability Analysis

As shown in Table 7.12, item CQAT3 showed relatively weak item-total correlation (.30) and was omitted when item scores were summed for the purposes of analyses described later.

**Table 7.12 Reliability of scores for the Achievement subscale**

| Item | Corrected Item-total correlation | Alpha if item deleted |
|---|---|---|
| CQAT3 | .308 | .899 |
| CQAT4 | .711 | .760 |
| CQAT5 | .850 | .681 |
| CQAT6 | .818 | .702 |

[Number of cases = 621. Scale alpha = .828].

As shown in Table 7.13, Item CQIT8 showed relatively weak item-total correlation (.28) and was omitted when item scores were summed.

**Table 7.13 Reliability of scores for the Innovation subscale**

| Item | Corrected Item-total correlation | Alpha if item deleted |
|---|---|---|
| CQIT1 | .762 | .746 |
| CQIT2 | .679 | .772 |
| CQIT3 | .718 | .761 |
| CQIT6 | .666 | .777 |
| CQIT8 | .282 | .867 |

[Number of cases = 624. Scale alpha = .825].

In view of good item-total correlations in the commitment to goals scale (see Table 7.14) all items in this scale were retained when item scores were summed.

**Table 7.14 Reliability of scores for the Commitment to Goals subscale**

| Item | Corrected Item-total correlation | Alpha if item deleted |
|---|---|---|
| CQG1 | .635 | .827 |
| CQG2 | .701 | .809 |
| CQG3 | .651 | .823 |
| CQG4 | .677 | .820 |
| CQG5 | .663 | .821 |

[Number of cases = 612. Scale alpha = .851].

Combining the three subscales described above produced a 12-item scale for which reliability data are shown below in Table 7.15. All items correlated satisfactorily with the item total and the resulting alpha of .84 is good.

**Table 7.15 Reliability of scores for the new Behavioural Commitment Scale**

| Item | Corrected Item-total correlation | Alpha if item deleted |
|---|---|---|
| CQG1 | .536 | .832 |
| CQG2 | .558 | .830 |
| CQG3 | .530 | .833 |
| CQG4 | .519 | .833 |
| CQG5 | .479 | .838 |
| CQAT4 | .535 | .833 |
| CQAT5 | .577 | .829 |
| CQAT6 | .558 | .831 |
| CQIT1 | .521 | .835 |
| CQIT2 | .458 | .838 |
| CQIT3 | .525 | .835 |
| CQIT6 | .421 | .840 |

[Number of cases = 610. Scale alpha = .846].

Having shown adequate reliability for the entire sample it is worthwhile to examine reliability across the three sub-samples. For CIMA, alpha was .824 (n=132). For CIPFA, alpha was .873 (n=164). For the RSC, alpha was .833 (n=314). Alpha was above .8 for all three samples and this raises confidence in the transportability of the measure and underpins claims for construct validity.

### 7.9.2 Exploratory Factor Analysis

Exploratory Factor Analysis can be used to examine the dimensionality of a scale and Principal Components is a suitable technique for scale exploration (Ford, McCallum and Tait, 1986; Spector, 1992, p.54). Given that the new behavioural commitment scale was intended to capture three sub-scales measuring Achievement, Innovation and Commitment to Goals, three factors should emerge from this analysis. The Kaiser-Meyer-Olkin Measure of sampling adequacy was .83 indicating that it is highly appropriate to proceed with factor

analysis (Kim and Mueller, 1994b, p.122). Given that the three predicted factors should be correlated with each other, oblique rotation was used rather than orthogonal rotation which assumes that factors are uncorrelated. Principal components extracted three factors and oblique (OBLIMIN) rotation converged after 5 rotations. The three factors explained 71.2% of item variance.

**Table 7.16 Final statistics from Principal Components Analysis of the Behavioural Commitment Scale**

| Variable | Communality | Factor | Eigenvalue | % of variance |
|---|---|---|---|---|
| CQAT4 | .699 | 1 | 4.57 | 38.1 |
| CQAT5 | .916 | 2 | 2.42 | 20.1 |
| CQAT6 | .901 | 3 | 1.56 | 13.0 |
| CQG1 | .592 | | | |
| CQG2 | .672 | | | |
| CQG3 | .607 | | | |
| CQG4 | .655 | | | |
| CQG5 | .644 | | | |
| CQIT1 | .773 | | | |
| CQIT2 | .712 | | | |
| CQIT3 | .713 | | | |
| CQIT6 | .669 | | | |

The Pattern matrix in Table 7.17 shows large item loadings onto the three factors with factor loadings around .8 or better which comfortably exceed the arbitrary but widely used minimum loading value of .3. Factor 1 loaded items from the Innovation scale, Factor 2 loaded items from the Commitment to Goals scale and Factor 3 loaded items from the Achievement scale. No item loaded highly onto more than one factor and this is encouraging since it is important that, in multi-dimensional scales, an item contributes to one subscale only. If items load significantly onto more than one factor, then this confounds the correlations between subscales and leads to questions about item distinctiveness (Spector, 1992, pp.39-40).

**Table 7.17 Pattern matrix for the new Behavioural Commitment Scale**

| | Factor 1 | Factor 2 | Factor 3 |
|---|---|---|---|
| CQAT4 | .132 | -.019 | **-.780** |
| CQAT5 | -.046 | .016 | **-.970** |
| CQAT6 | -.052 | .011 | **-.966** |
| CQG1 | .076 | **.749** | -.000 |
| CQG2 | -.007 | **.811** | -.036 |
| CQG3 | .071 | **.769** | .030 |
| CQG4 | -.044 | **.818** | -.001 |
| CQG5 | -.077 | **.816** | -.001 |
| CQIT1 | **.865** | .019 | -.023 |
| CQIT2 | **.859** | .019 | .052 |
| CQIT3 | **.805** | .029 | -.073 |
| CQIT6 | **.828** | -.043 | .004 |
| Eigenvalue | 4.57 | 2.42 | 1.56 |
| % variance | 38.1 | 20.1 | 13.0 |
| cumm. %var. | 38.1 | 58.3 | 71.3 |

As expected, factors were correlated with each other as shown in the factor correlation matrix in Table 7.18.

**Table 7.18 Factor correlation matrix for the new Behavioural Commitment Scale.**

| | Factor 1 | Factor 2 | Factor 3 |
|---|---|---|---|
| Factor 1 | 1.000 | | |
| Factor 2 | .220 | 1.000 | |
| Factor 3 | -.396 | -.268 | 1.000 |

As expected, exploratory factor analysis yielded three factors that separately loaded the items from the three scales built into the new measure. As such, it has been useful as a way of evaluating the proposed model by showing the apparent adequacy of items and scales (Medsker, Williams and Holahan, 1994, p.457). However, a given correlation matrix (upon

which factor analysis is based) can derive from an infinite number of pathways between variables. Hence exploratory analysis cannot prove a factor structure, rather it only provides information that 'is not inconsistent' with a hypothesised factor structure (Kim and Mueller, 1994a, p.37).

### 7.9.3 Confirmatory Factor Analysis

#### 7.9.3.1 Factor Structure

Exploratory factor analysis cannot be used to quantify the extent to which the data fit an *a priori* model and Confirmatory Factor Analysis (CFA) overcomes this limitation in that it allows the researcher to test how well the data fit a hypothesised structure among variables (Long, 1994). In CFA, researchers typically compare the fit of a hypothesised model with alternative models. Fit is assessed through consideration of a series of fit indices and parameters. The models tested in this analysis were the theorised oblique three factor model (factors representing Innovation, Achievement and Commitment to Organisational Goals); a two factor model in which Achievement and Innovation loaded onto one factor and Commitment to Goals onto another; and, a one factor model in which all items load onto one factor. It is also conventional to compare theoretical models to an Independence (null) model in which there are no relationships between variables.

The three factor, oblique model is shown in Figure 7.1 and uses the conventions for drawing CFA models. Latent (unmeasured) variables are shown as ellipses and observed or measured variables (in this case scale items) are depicted as rectangles. Correlations between latent variables are represented by a curved arrow. The straight arrows connecting latent variables to measured variables represent the factor loadings (regression weights) of measured variables on the latent variable. Measurement error is depicted by a latent variable attached to each measured variable. Measurement errors were assumed to be uncorrelated.

7.9.3.2 Assessment of Model Fit

Decisions about model acceptance in CFA are not clear-cut nor is there any strong consensus in the literature on structural equation modelling over the 'best' way of determining model fit. Nevertheless, over 20 fit statistics have been developed and are variously used by researchers in the organisational behaviour and marketing fields (Bagozzi and Baumgartner, 1994; James and James, 1989; Medsker et al., 1998). A researcher has to interpret several indices before coming to a conclusion and, of the many fit indices available, those used here were chosen in light of their use by other research on commitment and their popularity among other users of CFA.

A model that shows a high level of fit should produce a low and non-significant chi-square value (with a p value above .05). The problem with this test is that, with large samples, a small discrepancy between a model and the available data will prove to be statistically significant and yield a p value below .05 (Arbuckle, 1997, pp.554-555). Furthermore, with totally disaggregated models (where measured variables are individual scale items rather than combinations of items) the likelihood of achieving poorly fitting models increases (Bagozzi and Edwards, 1998, p.53).

Summary data for CFA on the various models that could fit the data generated by the new commitment scale are given in Table 7.19. The lowest chi-square value (181.5) was achieved for the theorised three factor model but with a significant p value of .000. However, the use of the chi-square statistic as the sole measure of fit is not recommended (Bagozzi and Edwards, 1998, p.62) for reasons noted above. Among other measures of fit, the chi-square statistic divided by the degrees of freedom (CMIN/df)[3] for a given model will approach unity as fit improves. There is however no clear acceptance point for values of CMIN/df beyond which a model can be rejected or accepted. Various 'rules of thumb' exist and values below 5.0 are thought to indicate acceptable fit and below 3.0 very good

[3]CMIN, the minimum value of the discrepancy, is the value of the chi-square statistic produced by AMOS modelling.

fit (Arbuckle, 1997, p.555; Hinkin, 1998, p.114; Medsker et al., 1994, p.441).

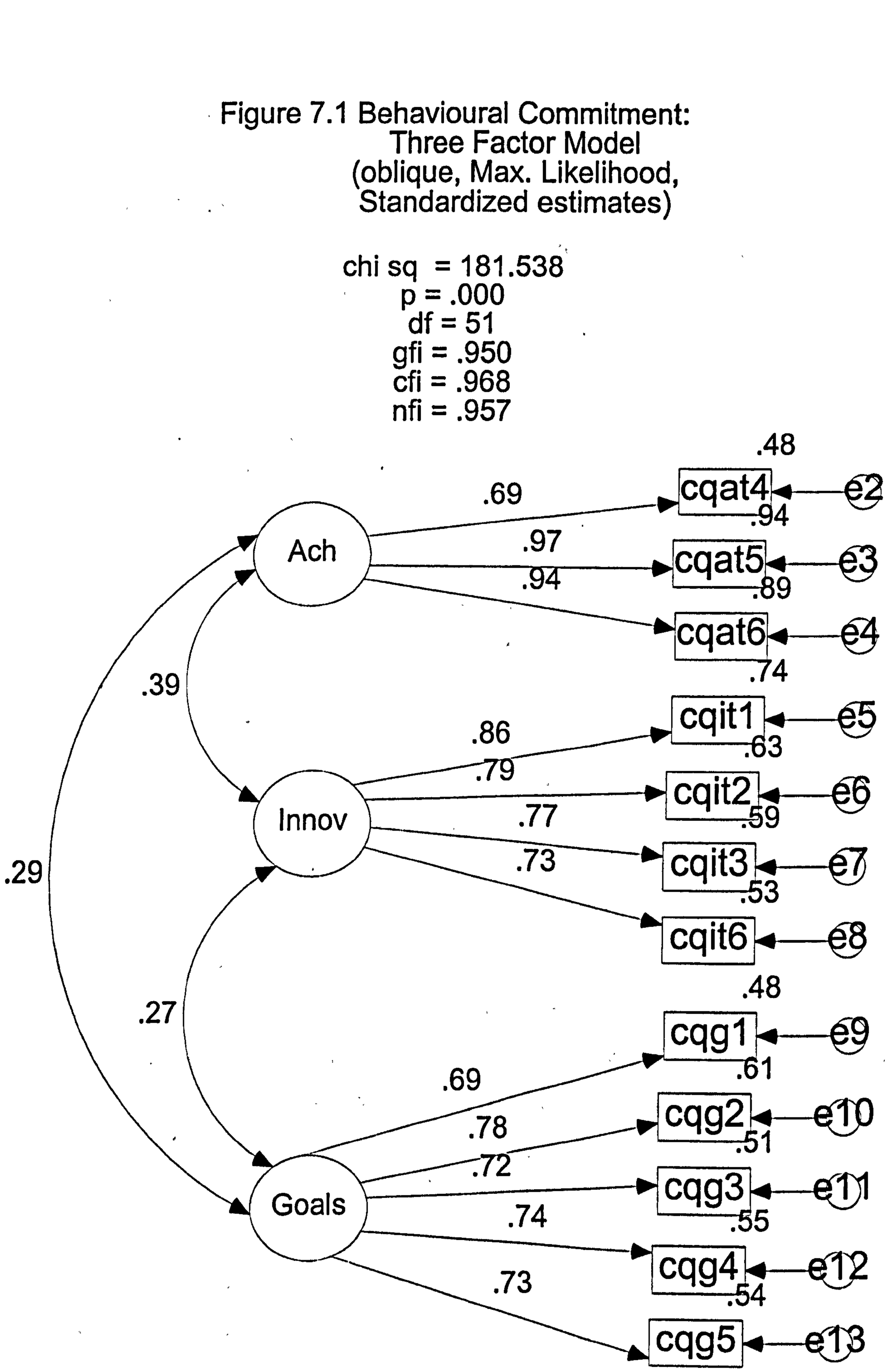
**Table 7.19 Fit statistics from Confirmatory Factor Analysis on the Behavioural Commitment Scale**

| Model | Chi-Sq. | df | CMIN/df | RMSEA | NFI | RFI | CFI |
|---|---|---|---|---|---|---|---|
| 3 Factor oblique | 181.5 | 51 | 3.56 | .064 | .957 | .944 | .968 |
| 3 Factor orthogonal | 324.7 | 54 | 6.01 | .090 | .922 | .905 | .934 |
| 2 Factor oblique | 1187.9 | 53 | 22.4 | .186 | .716 | .647 | .725 |
| 1 Factor | 2272.6 | 54 | 42.1 | .257 | .457 | .337 | .462 |
| Independence | 4187.4 | 46 | 63.4 | .317 | .000 | .000 | .000 |

[n=623, p value for chi-square was .000 in all models. The Independence model relates to the 3 Factor oblique model. Since AMOS version 3.6 does not report fit indices in the presence of missing data, a small number of cases containing missing data were deleted from the data set to give 623 complete cases. There is no reason to suspect that data were not 'missing completely at random' and, given the large sample, case deletion offered the simplest approach to the problem].

The Root Mean Square Error of Approximation (RMSEA) is zero for a perfectly fitting model and values below .05 reflect good fit and below .08 a reasonable fit (Arbuckle, 1997, p.556). Several of the fit indices rely upon some derivative of the chi-square statistic including those shown in Table 7.19. The Normed Fit Index (NFI), the Relative Fit Index (RFI) and the Comparative Fit Index (CFI) approach unity as fit increases and a minimum threshold is commonly taken to be .90 as models with indices below this level are capable of improvement. Values close to unity signify a high model fit to the data (Medsker et al., 1994).

Figure 7.1 Behavioural Commitment:
Three Factor Model
(oblique, Max. Likelihood,
Standardized estimates)



The Comparative Fit Index (CFI) is a recent addition to the structural modelling literature (Bentler, 1990) and has the advantage of being less influenced by sample size and model complexity. Bagozzi and Edwards (1998 p.62) consider the CFI to be the most highly recommended and it is calculated by comparing the chi-square for the focal model with the chi-square value for an Independence (null) model,

$$CFI = \frac{(CS_0 - df_0) - (CS_f - df_f)}{(CS_0 - df_0)}$$

where $CS_0$ represents chi-square for an independence model, $df_0$ the degrees of freedom for the independence model, $CS_f$ represents the chi-square for the focal model and $df_f$ the degrees of freedom for the focal model. Substituting data from Table 7.19

$$CFI = \frac{(4187.4 - 46) - (181.5 - 51)}{(4187.4 - 46)} = .968$$

The three factor oblique model of the new behavioural commitment scale yielded a chi-square/df of 3.56, RMSEA of .064, NFI of .957, RFI of .944 and a CFI of .968. The NFI can be interpreted as showing that the fit of the *a priori* model has a discrepancy that is 95.7 per cent of the way between a 'terribly' fitting independence model and a perfectly fitting model (Arbuckle, 1997, p.564). These indices show good improvement over other, alternative, models and the Independence model illustrates extreme lack of fit. In sum, the three factor oblique model identified through exploratory factor analysis is taken to fit the data well. The chi-square value and CFI are very similar in magnitude to those obtained by Bagozzi and Edwards (1998) in a study of a Work Aspect Preference scale for which satisfactory fit was accepted. The fit indices are better than those reported for a measure of union commitment (Thacker, Fields and Tetrick, 1989), far better than observed in tests of Meyer and Allen's Affective, Normative and Continuance model of commitment (Ko,

et al., 1997), comparable to, and on some indices better than the assessment of the Meyer and Allen model by Dunham et al. (1994), and better than Hackett et al.'s (1994) assessment of the same three-component model.

7.9.3.3. Generalisability of the New Scale

This research design has collected data from three independent samples and it is informative to assess the structure of the new scale in each sample. If the structure were to break down in one or more samples, then the validity of the scale would be called into question. Table 7.20 below shows the key statistics from a confirmatory factor analysis using data from the three samples. In all cases, a significant chi-square statistic was obtained (a non-significant statistic is ideal) but this is caused by the large sample size (see Brannick, 1995, p.205). Other fit indices all indicate good model fit to the data and this is an important finding that points to a robustness and generalisability of the new commitment scale.

**Table 7.20 Comparative fit indices on three samples**

| Sample group | n | chi sq | chi sq/df | CFI | GFI | AGFI | RMSEA |
|---|---|---|---|---|---|---|---|
| CIMA | 136 | 86.7 | 1.70 | .96 | .90 | .85 | .07 |
| CIPFA | 165 | 80.8 | 1.59 | .98 | .92 | .88 | .06 |
| RSC | 322 | 123.4 | 2.42 | .96 | .94 | .90 | .07 |

[degrees of freedom = 51. CFI= Comparative Fit Index, GFI= Goodness of Fit Index, AGFI= Adjusted Goodness of Fit Index, RMSEA= Root Mean Square Error Approximation].

7.9.3.4 Assessing the Measurement Model

Having shown good fit between the hypothesised structure for the new behavioural commitment scale and the data obtained through the survey questionnaire, it is necessary to look further at the model's parameters (Figure 7.1 and Tables 7.21A-7.21E refer).

Standardized regression weights represent item loadings onto the factors and loadings ranged from .690 for item CQG1 to .967 for item CQAT5. Standard errors for the regression weights ranged from .041 to .081 and the estimated regression weights divided by the standard error (the Critical Ratio) ranged from 15.5 to 22.0. Critical ratios above 1.96 indicate, at a 95% confidence level, that the regression weights are significantly different from zero. Thus, in the presence of positive, large and statistically significant factor loadings, the minimum requirements for construct measurement are present (Bagozzi and Baumgartner, 1994, p.402). In addition to favourable factor loadings, it is important that none of the error variances were estimated to be negative as can occur in social science research where large measurement error can arise (Bagozzi and Baumgartner, 1994, p.403) and no negative error variances were in fact observed. Consistent with the postulated structure for the behavioural commitment scale, moderate correlations were observed between factors; CQAT-CQIT .39, CQAT-CQG .289 and CQIT-CQG .266.

**Table 7.21A Regression weights for the Behavioural Commitment Scale**

| Item_Factor loading | Estimate | Standard error | Critical ratio |
|---|---|---|---|
| cqat4_cqat | 1.0 | | |
| cqat5_cqat | 1.714 | .078 | 22.00 |
| cq6_cqat | 1.780 | .081 | 21.94 |
| cqit1_cqit | 1.0 | | |
| cqit2_cqit | .942 | .043 | 22.08 |
| cqit3_cqit | .864 | .041 | 21.21 |
| cqit6_cqit | .906 | .046 | 19.71 |
| cqg1_cqg | 1.0 | | |
| cqg2_cqg | 1.11 | .067 | 16.70 |
| cqg3_cqg | .969 | .062 | 15.57 |
| cqg4_cqg | .867 | .054 | 16.12 |
| cqg5_cqg | 1.137 | .072 | 15.89 |

[Re: Figure 7.1, cqat=Ach; cqit=Innov; cqg=goals. Regressions weights in T7.21A are undstandardised].

## Table 7.21B Standardized regression weights

| Item_Factor loading | Estimate |
|---|---|
| cqat4_cqat | .692 |
| cqat5_cqat | .967 |
| cqat6_cqat | .943 |
| cqit1_cqit | .861 |
| cqit2_cqit | .793 |
| cqit3_cqit | .767 |
| cqit6_cqit | .725 |
| cqg1_cqg | .690 |
| cqg2_cqg | .780 |
| cqg3_cqg | .715 |
| cqg4_cqg | .740 |
| cqg5_cqg | .732 |

## Table 7.21C Covariance and correlation estimates

| Latent Factors | Covariance Estimate | Standard Error | Critical Ratio | Correlation |
|---|---|---|---|---|
| cqit_cqg | .237 | .044 | 5.409 | .266 |
| cqat_cqit | .276 | .035 | 7.797 | .390 |
| cqat_cqg | .248 | .042 | 5.902 | .289 |

**Table 7.21D Estimated variances of latent variables and error variables**

| Variable | Estimate | Standard Error | Critical Ratio |
|---|---|---|---|
| cqat | .684 | .070 | 9.732 |
| cqit | .736 | .058 | 12.691 |
| cqg | 1.071 | .117 | 9.183 |
| e1 | .744 | .044 | 16.886 |
| e2 | .139 | .035 | 3.937 |
| e3 | .272 | .040 | 6.783 |
| e4 | .257 | .025 | 10.338 |
| e5 | .387 | .029 | 13.273 |
| e7 | .384 | .027 | 13.977 |
| e8 | .545 | .037 | 14.845 |
| e9 | 1.180 | .079 | 14.905 |
| e10 | .853 | .066 | 12.930 |
| e11 | .958 | .066 | 14.471 |
| e12 | .667 | .048 | 13.983 |
| e13 | 1.196 | .085 | 14.136 |

**Table 7.21E Squared multiple correlations**

| Item | Estimate |
|---|---|
| cqg1 | .476 |
| cqg2 | .608 |
| cqg3 | .512 |
| cqg4 | .547 |
| cqg5 | .537 |
| cqat4 | .479 |
| cqat5 | .935 |
| cqat6 | .888 |
| cqit1 | .741 |
| cqit2 | .628 |
| cqit3 | .589 |
| cqit6 | .526 |

### 7.9.3.5 Reliability of the Behavioural Commitment Scale

In addition to the assessment of internal consistency reliability with Cronbach's alpha, it is possible to assess reliability using CFA. This is useful where the assumptions of Cronbach's alpha are violated or in question, such as, the presumption that a scale is uni-dimensional. Given that the new scale is multi-dimensional (the three factors of commitment to goals, innovation and achievement are believed to be correlated), a CFA test of reliability is therefore worth conducting.

Squared multiple correlations are shown in Figure 7.1 and appear in the top right hand corner of the box depicting each measured variable. They can be interpreted as follows, 48% of the variance of item CQAT4 is explained by variance in CQAT (the Achievement latent factor) and represents the 'lower limit' of item reliability. The remaining 52% of variance in CQAT4 is not explained by the model and so is attributed to the unique (i.e. error) variable, 'e1' (Arbuckle, 1997, p.401).

Using the formula provided by Bagozzi (1994, p.321) for the composite reliability of scale

$$r_c = (\sum\lambda_i)^2 / ((\sum\lambda_i)^2 + \sum\theta_{ii})$$

in which $\lambda_i$ is the factor loading of the $i^{th}$ item and $\theta_{ii}$ the error variance of the $i^{th}$ item, and, using data from Table 7.21, the sum of the factor loadings (regression weights) is 9.41 and the sum of the individual error variances is 7.58. Thus,

$$r_c = (9.41)^2 / ((9.41)^2 + 7.58)$$

$$r_c = 88.55 / (88.55 + 7.58)$$

$$r_c = 0.92$$

As the composite reliability cannot exceed 1.0, the level achieved appears highly satisfactory.

### 7.9.3.6 Strengths and Limitations of CFA

This study has followed good practice in CFA (Medsker et al., 1994), namely that a theoretical model was proposed, modelling was based on analyses of covariance structures rather than correlation matrices, several fit indices were compared, the number of predictor variables for each latent variable was not less than three, and the sample size was high. There are, however, certain limitations that require stating. Due to the cross-sectional nature of this research it is assumed that the data collected were in equilibrium and therefore stable (Bagozzi and Baumgartner, 1994, p.389). The maximum likelihood technique used to assess the factor structure assumes that data are multivariate normal. Inspection of skewness and kurtosis diagnostics showed that this assumption was not achieved for all items. Although it is possible to transform data in an effort to recover normality, for example, by taking the logarithm or square root of values, the issue reduces to one of whether the departures from normality will do any harm to the findings of CFA. Given the narrow range of item scores (1 to 7) there were no outliers that could have unsettled the model and the maximum likelihood estimation procedure is robust to some departure from normality (Arbuckle, 1997, p.239; Bagozzi and Baumgartner, 1994, p.394) and, in consideration of these points, it is assumed that no serious harm is done to the conclusions of this CFA.

To test this assumption, the oblique three factor model was tested using AMOS' asymptotically distribution-free algorithm which allows for non-normal distributions. The chi-square statistic reduced (and therefore improved) from 181.5 to 142.1 and, for the same degrees of freedom, the CMIN/df ratio reduced to 2.78. The GFI improved from .95 to .958 although the CFI worsened from .968 to .928 and the NFI fell from .957 to .893. Given that, overall, a good level of fit was retained in the distribution-free assessment, the three factor model appears robust to distribution assumptions. The favourable results of

confirmatory factor analysis allow us to proceed to the next stage of testing convergent and discriminant validity.

## 7.10 CONVERGENT AND DISCRIMINANT VALIDITY

The construct validation process typically involves an examination of how a new construct correlates with other variables (Hinkin, 1998; Kerlinger, 1964; Spector, 1992). Typically, this includes convergent validity in which predicted positive associations between the new construct and similar constructs are tested, and discriminant validity in which the new construct is predicted to diverge from dissimilar constructs. Convergent and discriminant validity are both forms of criterion-related validity since they involve the study of relationships between a new construct and criteria of interest. When data are collected at the same time, as in this study, concurrent validity is achieved if hypothesised relationships are supported.

Campbell and Fiske (1959) provided a framework to assist construct validation with their MultiTrait-MultiMethod (MTMM) analysis. MTMM requires that at least two constructs are measured in two different ways. In this study, only commitment was measured in separate ways using different self-report measures. MTMM seeks higher correlations between the same construct measured through different methods (monotrait-heteromethod) than between different constructs measured with different methods (multitrait-multimethod) and between different constructs measured with the same method (heterotrait-monomethod).

MTMM is typically used to assist the development of a new construct which is assessed against alternative measures of the same construct. In such cases the definition of the new construct could be the same as that used previously by researchers but the search is for a 'better' measure, perhaps by creating a 'better' set of items. In this study, however, the definition of organisational commitment has shifted from a largely attitudinal concept to a behavioural concept and, for this reason, the precise same trait (monotrait) is not being

measured in different ways. Hence monotrait-heteromethod correlations among measures of commitment may not reach the high levels of .7 to .8 that can be observed in MTMM analysis. The exception to this is the commitment to goals scale in the behavioural commitment scale which would be expected to correlate highly with the Affective Commitment Scale.

Referring to the propositions P1a to P1g developed in section 5.3.4, the multitrait correlation matrix is shown in Table 7.22. The table shows that correlations among measures of commitment ranged from .56 to .79. (Note the correlation of .79 between behavioural commitment and commitment to goals is not particularly informative since commitment to goals is a subscale of the behavioural commitment scale and hence autocorrelation is present). The high correlation of .71 between the commitment to goals scale and the goal-oriented Affective Commitment Scale is expected since they occupy the same domain. The average intercorrelation between commitment measures (excluding the value of .79) is .63. The average correlations of the three commitment measures were .6 with perceived organisational support, -.3 with prestige, .18 with age, -.16 with continuance commitment, .43 with professionalism, and .35 with scope for advancement.

Thus Proposition P1a is accepted.

**Table 7.22 Multi trait correlation matrix**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|
| 0. Commitment to goals | 79 | 71 | 64 | 71 | -35 | 17 | -20 | 48 | 43 |
| 1. Behavioural commitment (NEWOCS) | - | 60 | 56 | 55 | -27 | 17 | -24 | 51 | 35 |
| 2. Affective commitment scale | - | - | 64 | 68 | -33 | 23 | -14 | 42 | 37 |
| 3. ORGCOM | - | - | - | 56 | -29 | 15 | -11 | 36 | 33 |
| 4. Perceived org. support | - | - | - | - | 45 | ns | -31 | 43 | 56 |
| 5. Prestige | - | - | - | - | - | ns | 24 | -29 | -34 |
| 6. Age | - | - | - | - | - | - | 30 | 10 | -17 |
| 7. Continuance commitment. | - | - | - | - | - | - | - | -30 | -34 |
| 8. Professionalism | - | - | - | - | - | - | - | - | 35 |
| 9. Advancement | | | | | | | | | - |

[Correlations all significant at the .05 level or below. ns = non-significant. Decimal points omitted. Correlations shown are a sub-set of Table 7.10].

The correlation between behavioural commitment and age was .17 and the correlation between Affective Commitment Scale and age was .23. The two scales compare favourably, as expected, and also compare well with Mathieu and Zajac's (1990) finding that across several studies the age/commitment correlation was .20. Thus Proposition P1b is accepted.

The correlation between behavioural commitment and perceived organisational support (POS) was .55 which is close to the correlation of .64 observed between the Affective Commitment Scale and POS by Eisenberger et al. (1990). Thus Proposition P1c is accepted.

The correlation between behavioural commitment and continuance commitment was -.24 (affective commitment and continuance commitment, -.14) and thus Proposition P1d is accepted.

The correlation between behavioural commitment and Perceived Prestige was -.27 (affective commitment and prestige, -.33) and so Proposition P1e is accepted.

The correlation between behavioural commitment and scope for advancement was .35. Proposition P1f refers to limited career advancement which was measured by reverse-scoring scope for advancement. Hence, after reversing the sign of the correlation (to -.35), Proposition P1f is accepted.

The correlation between behavioural commitment and professionalism was .51 (affective commitment and professionalism, .42) and thus Proposition P1g is accepted.

## 7.11 SUMMARY

The samples obtained through the postal survey appear broadly representative of the professional groups that they were taken from. The correlation matrix does not contain many strong correlations indicating that multi-collinearity will not be a major problem when regression analysis is performed on the data. The correlation between commitment and social exchange is about half the value predicted by the pilot survey and this will make the predicted moderator effects, if they exist, harder to detect. While the three methods of factor extraction used in exploratory factor analysis each gave a different, albeit similar, factor structure, as they should, each produced a structure in which most variables were distinct. This provides strong evidence that common method variance is not an issue in this study since, if common method variance was high, then, at extremes, only one factor would emerge (Day, 1996; Grover, 1991; Podsakoff and Organ, 1986) and the overall conclusion from exploratory factor analysis is that respondents were distinguishing between constructs in the survey. Confirmatory factor analysis also suggests that the data

conform to the predicted factor structures underlying the constructs although it is interesting to note the bi-dimensional nature of both the affective and continuance scales as these are commonly portrayed as being uni-dimensional. Taken together, the sample characteristics and the results of data screening provide further justification for proceeding with the main analysis. Good internal consistency reliability, a coherent factor structure and evidence for convergent/discriminant validity provide encouraging evidence for construct validity of the new behavioural organisational commitment scale. The next chapter seeks to develop further evidence for criterion related validity of the new instrument by examining the moderating effects of social exchange on perceived support and professionalism on commitment to various foci. This will help to understand how the commitment of professionals is influenced by some 'high proximity' variables discussed in section 5.3.4.

# CHAPTER 8

# EXPLORING THE COMMITMENT OF ORGANISATIONAL PROFESSIONALS

## 8.1 INTRODUCTION

Evidence for criterion-related validity of the new commitment scale has been presented at the end of Chapter 7 and this chapter seeks to extend that analysis and, in doing so, shed some light on the nature of the commitment of corporate professionals. Validation of the new commitment scale is extended by showing how it relates to other measures of commitment and to a set of independent variables including professionalism and perceived support. This is an important stage in construct validation studies and one that examines how a particular construct is positioned (located) within a nomological (theoretical) network of relationships among variables (Cronbach and Meehl, 1955). In essence, it shows how a test or measure relates to other attitudes and behaviours. This is needed as construct validity concerns the search for evidence that a test or measure is indeed measuring what it is intended to and not some other trait or attitude. In addition, validity is concerned with the extent to which a test has theoretical and practical utility and it follows that validity concerns the extent to which test scores allow inferences to other variables (Walsh and Betz, 1995). Validity cannot, therefore, be expressed through a single, convenient statistic but is more of an evolutionary judgement on a continuum from 'weak' to 'strong' (Cronbach and Meehl, 1955; Gregory, 1996).

Criterion-related validity usually focuses on specific relationships that are justified through theory and then tested using statistical techniques such as multiple regression and factor analysis (Hinkin, 1995, p.980). Depending upon the nature of the construct being validated, studies of discriminant validity may be used to see how a new construct differs between groups of people and convergent validity can be assessed by seeing how well a new measure converges with other measures of the same construct. For example, if it could

be theorised that men should differ from women on some aspect of commitment then measures of commitment should be able to detect the hypothesised difference. Ideally, in construct validity studies, the same construct is measured in different ways, perhaps through a self-report questionnaire, and from examination of documentary evidence or observer ratings. Due to practical difficulties with such approaches, however, the use of the same basic method, often a questionnaire, is commonly used (Bryman, 1989) and is also the case here.

This chapter begins by examining the relative power of the predictor variables to explain variance in commitment to different foci using stepwise regression. A detailed examination of the moderating effects of variables, particularly perceived support and professionalism is then presented. Specific evidence for validity comes from testing the propositions from section 5.2.4 which are re-introduced as the chapter unfolds.

## 8.2 STEPWISE REGRESSION ANALYSIS

To assess the overall relationships between variables, stepwise regression was performed in which all independent variables were regressed on the several measures of commitment. Results are shown in Tables 8.1A and 8.1B and the reader is reminded of Tables 7.1 and 7.2 showing the labels used for each variable.

**Table 8.1A** **Measures of organisational commitment: betas and significance levels ($p<0.05$) for terms accepted by stepwise regression.**

| Variable | SMACS | SMNEWOCS | ORGCOM |
|---|---|---|---|
| SMADV | - | - | - |
| SMCC | - | - | - |
| SMEI | - | -.08, .0137 | -.11, .0007 |
| SMJS | - | -.08, .03 | - |
| SMPC | .11, .0003 | .18, .000 | .11, .0035 |
| SMPMA | .07, .0159 | .22, .000 | - |
| SMPMB | - | - | - |
| SMPMR | - | - | - |
| SMPMS | - | - | - |
| SMPOS | .60, .000 | .39, .000 | .51, .000 |
| TENURE | .25, .000 | - | - |
| AGE | - | .12, .0004 | .12, .0002 |
| UNION | - | - | - |
| SEX | - | - | - |
| PSG | - | - | |
| | | | |
| F (Eqn) | 179 | 71.5 | 83.6 |
| Sig. F | .000 | .000 | .000 |
| Adj $R^2$ | .55 | .428 | .367 |
| df | 575 | 559 | 566 |
| | | | |
| Min. Tol. | .81 | .75 | .83 |
| Highest C.I. | 13.6 | 23.3 | 17.9 |
| Lowest Ev. | .02 | .01 | .01 |

[The regression weight, beta, is given first followed by its significance level. R squared and F values shown are for the final regression equation. Min. Tol. = minimum tolerance value. C.I. = condition index. Ev = eigenvalue. '-' denotes a non-significant term].

**Table 8.1B** **Foci of commitment: betas and significance levels (p<0.05) for terms accepted by stepwise regression.**

| Variable | SUPCOM | TOPMAN | WORKGP | SMFCSSP | SMFCSTM | SMFCSWG |
|---|---|---|---|---|---|---|
| SMADV | - | - | - | - | - | - |
| SMCC | - | - | - | - | -.086, .02 | - |
| SMEI | -.09, .024 | -.10, .0026 | -.13, .0008 | - | - | - |
| SMJS | - | - | - | - | - | - |
| SMPC | - | - | .11, .0056 | - | - | .175, .000 |
| SMPMA | - | - | .10, .011 | - | .11, .0009 | .137, .0005 |
| SMPMB | - | - | - | - | - | - |
| SMPMR | - | - | - | - | - | - |
| SMPMS | - | - | - | - | - | - |
| SMPOS | .32, .000 | .48, .000 | .27, .000 | .49, .000 | .50, .000 | .249, .000 |
| TENURE | - | - | - | - | - | .10, .007 |
| AGE | .09, .0118 | .10, .0017 | .09, .0265 | .07, .041 | .20, .000 | - |
| UNION | - | - | - | - | - | -.098, .0106 |
| SEX | - | - | -.15, .0003 | - | - | - |
| PSG | -.11, .0078 | -.15, ..0001 | - | - | - | - |
| | | | | | | |
| F (Eqn) | 32.1 | 81.6 | 26.2 | 97.4 | 88.9 | 30.6 |
| Sig. F | .000 | .000 | .000 | .000 | .000 | .000 |
| Adj $R^2$ | .178 | .358 | .207 | .254 | .381 | .206 |
| df | 573 | 574 | 572 | 565 | 567 | 565 |
| Min.Tol. | .77 | .77 | .80 | .99 | .79 | .80 |
| Highest C.I. | 19.7 | 19.8 | 21.8 | 12.4 | 17.9 | 14.2 |
| Lowest Ev. | .01 | .01 | .01 | .02 | .01 | .02 |

### 8.2.1 Multi-Collinearity

The indicators of multi-collinearity (high correlations between independent variables) are also shown in Tables 8.1A and 8.1B. They are; the lowest tolerance value observed in each regression equation, the highest condition index observed in each equation and the lowest eigenvalue. Multi-collinearity is indicated if low tolerance values occur, for example, a tolerance of 0.1 shows that a variable shares 90 per cent of its variance with others. Condition indices above 30 indicate multi-collinearity as do eigenvalues approaching zero (Norusis, 1993, p.355). The multi-collinearity diagnostics show that tolerance values were high and that none of the condition indexes came close to the critical value of 30. The lowest eigenvalues approached zero, indicating some shared variance between independent variables. However, in the presence of the other, satisfactory, indicators there is no indication of serious multi-collinearity problems in the stepwise analysis.

### 8.2.2 General Relationships

The F statistics showing the statistical significance of each regression equation were significant in each case (sig. F<.000). Perceived organisational support (SMPOS) was the most influential variable for all regression equations, having a beta weight ranging from 0.25 to 0.60. Social exchange was a significant negative term for the new behavioural organisational commitment scale (SMNEWOCS) and for the respondent-defined measure of commitment to the organisation (ORGCOM), to the supervisor (SUPCOM), to the work group (WORKGP) and to top management (TOPMAN). Social exchange was not a significant term in the regression equations when affective commitment (SMACS) and commitments to supervisor (SMFCSSP), top management (SMFCSTM) and the work group (SMFCSWG) were measured using Likert scales.

Professional commitment was a significant term in the regression equations except in the prediction of commitment to supervisor and top management. Professional autonomy was a significant predictor of affective commitment (SMACS), the new behavioural commitment scale (SMNEWOCS) and commitment to the work group (WORKGP and

SMFCSWG). Contrary to expectations, other components of professionalism were not significant predictors for any of the commitment measures. These were: the importance of the profession (SMPMB), use of the profession's infrastructure (SMPMR), and a belief that the profession can assess and raise standards (SMPMS). To examine this finding further, the five components of professionalism were regressed onto the various measures of commitment in the absence of any other predictors. When regressed on ORGCOM; SMPMB, SMPMR and SMPMS were again non-significant predictors while professional commitment (SMPC) and professional autonomy (SMPMA) were significant ($p<.001$, $adjR^2=0.126$). On affective commitment, all except SMPMR were significant predictors ($p<.05$, $adjR^2=.187$). When regressed on behavioural commitment, all were significant except for SMPMB and SMPMS ($p<0.05$, $adjR^2=0.272$). In view of this finding, it would be inappropriate to create an additive scale from all five components of the professionalism scale as it seems that use of the profession's infrastructure (SMPMR) and belief that the profession can raise standards (SMPMS) are, for the most part, redundant in this application. Professionalism was, therefore, taken to be a composite of commitment to the profession and professional autonomy.

Membership of a union was a significant term only in the prediction of commitment to the work group. In this case, women showed reduced commitment (WORKGP, dummy variable coding, men=0, women=1, $\beta$(dummy)=-0.15). Union membership was a predictor only for commitment to the work group (SMFCSWG, $\beta$=-.098). Age was a positive predictor of commitment to various foci except for affective commitment (SMACS) when tenure, rather than age, was a predictor.

The amount of variation in the several measures of commitment that was explained by the predictor variables ranged from 17.8% in the case of commitment to supervisor (SUPCOM), to 55% for affective commitment (SMACS). In comparison, 42.8% of variance in the new behavioural commitment scale was explained and this is an encouraging finding. It is unusual, in social research, to find variables that explain very high proportions of variance and, in contrast, if a small percentage had been explained, this would have inhibited further research using the variables measured in this study.

Having seen the overall predictive ability of the variables in Tables 8.1A and 8.1B, Table 8.2 shows the influence of a smaller set of variables which are the focus of propositions P2 to P5 on behavioural commitment for each of the three sample groups. Professionalism (autonomy and commitment to the profession) and perceived support were, again, significant positive predictors. Social exchange and job insecurity were negative predictors only for the R&D scientists. Continuance commitment was not a significant predictor in the regression equations for any of the sample groups.

**Table 8.2 The prediction of behavioural commitment for each sample group**

| Predictor variable | CIMA | CIPFA | RSC | All |
|---|---|---|---|---|
| | | | | |
| Professional commitment | .345, .000 | .124, .060 | .162, .001 | .181, .000 |
| Professional autonomy | .132, .096 | .273, .000 | .290, .000 | .246, .000 |
| Perceived support | .321, .000 | .530, .000 | .402, .000 | .407, .000 |
| Social exchange | - | - | -.121, .008 | -.075, .022 |
| Job insecurity | - | - | -.094, .062 | - |
| Continuance commitment | - | - | - | - |
| | | | | |
| $R^2$ | .274 | .430 | .436 | .410 |
| df | 2, 128 | 2, 157 | 4, 287 | 4, 578 |
| F (Eqn) | 24.2 | 59.1 | 54.1 | 99.1 |

[Stepwise entry. Beta weights are given together with significance levels. F values sig. <.000. '-' denotes a non-significant term].

Tables 8.1A, 8.1B and 8.2 show similarities between the regression equations predicting organisational commitment but they also highlight certain differences among the three sample groups. There are sufficient similarities to justify combining the three samples into one for the purpose of overall analyses, but it is clearly important not to treat the three groups as being totally equivalent and to look for differences brought about by sample type.

### 8.2.3 Prediction of the Dimensions of Behavioural Commitment

This section shows how the three dimensions of behavioural commitment are influenced by predictor variables. Table 8.3A shows that perceived support explained the most variance in commitment to goals (SMPOS, $\Delta R^2$=.525, β=.606, sig β=.000), followed in the stepwise regression by commitment to the profession (SMPC, $\Delta R^2$=.033, β=.178, sig β=.000). Autonomy was also a significant predictor (SMPMA, $\Delta R^2$=.008, β=.08, sig β=.006). Social exchange and job insecurity were negative predictors as, unexpectedly, was the professionalism subscale concerning belief in self-regulation. The total amount of variance explained was high at 59.3%.

**Table 8.3A Prediction of the commitment to goals dimension of behavioural commitment (all cases)**

| Step | Variable | $R^2$ | $\Delta R^2$ | F(eqn) | beta | t | sig. t |
|---|---|---|---|---|---|---|---|
| 1 | SMPOS | .525 | .525 | 626.3 | .606 | 18.87 | .000 |
| 2 | SMPC | .558 | .033 | 359.0 | .178 | 5.81 | .000 |
| 3 | AGE | .572 | .014 | 251.4 | .115 | 4.09 | .000 |
| 4 | SMPMA | .580 | .008 | 194.6 | .080 | 2.78 | .002 |
| 5 | SMEI | .584 | .004 | 158.2 | -.073 | -2.70 | .007 |
| 6 | SMPMS | .588 | .004 | 133.6 | -.061 | -2.14 | .033 |
| 7 | SMJINSEC | .591 | .003 | 115.7 | -.065 | -2.21 | .027 |
| 8 | SMPMB | .593 | .002 | 102.1 | .052 | 1.87 | .062 |

[df 8, 560. F(eqn) significant at p=.000 at each step].

Table 8.3B shows that the Achievement dimension was predicted by fewer variables including professional autonomy (SMPMA, $\Delta R^2$=.069, β=.225, sig β=.000) and perceived support (SMPOS, $\Delta R^2$=.015, β=.111, sig β=.007). Social exchange was a negative predictor (SMEI, $\Delta R^2$=.005, β= -.069, sig β=.088). The total amount of variance explained was low at 9.5%.

**Table 8.3B Prediction of the Achievement dimension of behavioural commitment (all cases)**

| Step | Variable | $R^2$ | $\Delta R^2$ | F(eqn) | beta | t | sig. t |
|---|---|---|---|---|---|---|---|
| 1 | SMPMA | .069 | .069 | 41.9 | .225 | 5.43 | .000 |
| 2 | SMPOS | .084 | .015 | 26.1 | .111 | 2.71 | .007 |
| 3 | AGE | .090 | .006 | 18.7 | .078 | 1.93 | .054 |
| 4 | SMEI | .095 | .005 | 14.8 | -.069 | -1.71 | .088 |

[df 4, 567. F(eqn) significant at p=.000 at each step]

Table 8.3C shows that the Innovation scale was predicted by professional autonomy (SMPMA, $\Delta R^2$=.087, $\beta$=.241, sig $\beta$=.000) and commitment to the profession (SMPC, $\Delta R^2$=.026, $\beta$=.140, sig $\beta$=.001). Negative influences upon innovation were continuance commitment and sex since the sign of the dummy variable (SEX, women =1, men=0) was negative. The total amount of variance explained was 13.5%.

**Table 8.3C Prediction of the Innovation dimension of behavioural commitment (all cases)**

| Step | Variable | $R^2$ | $\Delta R^2$ | F(eqn) | beta | t | sig. t |
|---|---|---|---|---|---|---|---|
| 1 | SMPMA | .087 | .087 | 54.2 | .241 | 5.99 | .000 |
| 2 | SMPC | .113 | .026 | 36.6 | .140 | 3.43 | .001 |
| 3 | SMCC | .126 | .013 | 27.3 | -.126 | -3.09 | .002 |
| 4 | SEX | .135 | .009 | 22.1 | -.096 | -2.44 | .015 |

[df 4, 569. F(eqn) significant at p=.000 at each step]

Given that factor analysis has shown the three dimensions to be moderately correlated, some differences in the predictive ability of the independent variables is to be expected. Differences were also noted among the predictors of each dimension across the three professional groups and the stepwise regressions showing the outcomes for each group are given in Appendix J.

### 8.2.4 Implications of Stepwise Regression

The stepwise analyses allows the following observations.

1. The finding that social exchange is a predictor of organisational commitment when measured through the new behavioural commitment scale (SMNEWOCS) and through the respondent-defined measure (ORGCOM), but not affective commitment (SMACS), is encouraging as it is consistent with the proposition that social exchange has a negative influence on organisational commitment.

2. The finding that perceived job security is a significant, albeit weak term in the prediction of behavioural commitment but not affective commitment, is also consistent with expectations and indicative that behavioural commitment is a valid representation of organisational commitment.

3. The negative association between social exchange and the several foci of commitment is weak and so the potential to detect moderator effects is less than had been anticipated following the pilot study in which stronger associations had been found.

4. The measured variables usually accounted for less than 60% of variance in the various measures of organisational commitment, and so other (unmeasured) variables must be accounting for the remaining proportion of commitment variance. The low amount of variance explained in the Achievement and Innovation dimensions compared to the Goals dimension indicates considerable distinctiveness among them. This limits the effective utility of a combined behavioural scale and signals that further harmonisation of scale items is required. Despite this finding, interaction tests were conducted on the combined scale in order to explore the differences between behavioural commitment, as operationalised here, and other forms of commitment.

5. Professionalism was a positive predictor of the three representations of organisational commitment and commitment to the work group, but was not a predictor of commitment to the supervisor or to top management. Gouldner's (1957) local-cosmopolitan portrayal is therefore not supported by these findings as in that case a negative association between organisational commitment and professional commitment would have been observed.

6. The new behavioural commitment scale, commitment to supervisor, to work group and to top management were positively influenced by age not tenure, although affective commitment was influenced by tenure and not age. Age and tenure were themselves moderately correlated, r =.53, but this is not thought to be high enough to give a spurious finding, perhaps through multi-collinearity. This finding indicates that behavioural commitment (SMNEWOCS) and commitment to local foci are less dependent upon binding processes that would result from long term attachment to groups and individuals arising from long tenure.

## 8.3 MULTIPLE MODERATED REGRESSION

This section further extends the validation study by examining whether the influence of certain variables on commitment is constant across the range of values that other variables may take. For instance, knowing that social exchange has a negative influence on some measures of commitment, it is worth examining whether its influence is the same across all levels of another variable, for example, perceived organisational support. If it is not, then an interaction effect is present.

### 8.3.1 Dealing with Multi-Collinearity

The cross-product (interaction) term in tests for interactions is often highly correlated with one or more of the main effect terms. As explained in chapter 5, the accepted way of

dealing with this problem is to centre each predictor variable (by deducting the mean score from each observation) before computing the cross-product term. This technique is further explained and illustrated in Appendix H.

### 8.3.2 Interpreting the MMR Regression Equation

To show how the regression equation containing the interaction term can be interpreted, consider the prediction of work group commitment from the equation above at low, average and high levels of perceived organisational support. The final equation derived from centred variables (see Appendix H), was

Commitment = 85.3 + .337CENPOS - .109CENTEI + .083XCENPSEI + error

By definition, with centred variables, average support is given a value of zero. Let low and high support be represented by one standard deviation (11.05) below and above the mean respectively (after Aiken and West, 1991, p.13). At low perceived support the equation becomes

$$\begin{aligned} \text{WORKGP} &= 85.3 + .337(-11.05) - .109(\text{CENTEI}) + .083(-11.05)(\text{CENTEI}) \\ &= 85.3 - 3.72 - .109(\text{CENTEI}) - .917(\text{CENTEI}) \\ &= 81.6 - 1.026(\text{CENTEI}) \end{aligned}$$

At average support the equation becomes

$$\begin{aligned} \text{WORKGP} &= 85.3 + .337(0) - .109(\text{CENTEI}) + .083(0)(\text{CENTEI}) \\ &= 85.3 - .109(\text{CENTEI}) \end{aligned}$$

At high perceived support

$$\begin{aligned} \text{WORKGP} &= 85.3 + .337(11.05) - .109(\text{CENTEI}) + .083(11.05)(\text{CENTEI}) \\ &= 89.0 - .109(\text{CENTEI}) + .0917(\text{CENTEI}) \\ &= 89.0 - .0173(\text{CENTEI}) \end{aligned}$$

Thus, for a given level of social exchange, the predicted level of commitment to the work group increases as perceived support increases. The effect on commitment to work group of varying levels of social exchange can be illustrated by substituting values for low, average and high social exchange in the regression equation. As before, let low and high social exchange be one standard deviation (4.7) below and above the mean respectively. Substituting these values in the three regression equations above produces the matrix of scores for work group commitment shown in Table 8.4.

**Table 8.4 Commitment to work group: support/exchange interactions**

| Social Exchange | | | Perceived Support |
|---|---|---|---|
| low | avge | high | |
| 89 | 89 | 89 | high |
| 86 | 85 | 85 | avge |
| 86 | 82 | 77 | low |

The point of this matrix is not the actual values therein, which are arbitrary and purely illustrative, but the trends in the values. At low support, commitment to work group decreases with increasing social exchange from 86 to 77. At average and high support, social exchange does not influence commitment. When social exchange is average or high, increasing perceived support has the effect of increasing commitment. In most of the tests for interactions that follow, the general MMR equation obtained was of the form illustrated above, that is,

$$\text{Commitment} = C + b_1X - b_2Z + b_3XZ + \text{error}$$

In these equations, the regression coefficients of the main effects, $b_1$ and $b_2$, were positive and negative respectively, and the sign of the interaction term, $b_3$, was positive. As such, the interactions that follow can be interpreted in the same way as the example concerning work group commitment above. The general pattern of values in the example matrix will

be the same although the differences between cell values will change with the strength of the interaction. In some of the interactions concerning job insecurity and continuance commitment, the sign of the regression coefficient for the interaction term was negative. This creates a different pattern for commitment to that shown above and is discussed later in this chapter.

### 8.3.3 Criteria for Detecting Interaction Effects

An interaction effect is indicated by a significant interaction term when the term is added to the regression equation after 'main effects' (Cohen and Cohen, 1983 p.320) have been taken in. When a significant interaction term was observed, the magnitude of the F statistic for the change in R squared caused by adding the interaction term was calculated and used to compare interactions (see section 5.6.4). The formula for the change in F (Jaccard et al., 1990, p18; Norusis, 1993, p.344) is

$$F_{ch} = \frac{(\Delta R^2)(N-p-1)}{q(1-R^2)}$$

Thus F is directly proportional to:

- the change in R squared;
- sample size; and,
- 1 minus $R^2$.

Using data obtained from Appendix H concerning perceived support, social exchange and work group commitment,

$$F_{ch} = \frac{(.15248 - .1458)(625-2-1)}{1\ (1-.15248)} = \frac{(.00668)(622)}{(.84752)} = 4.90$$

The significance of $F_{ch}$ is found from the F distribution with q and n-p-1 degrees of freedom (Norusis, 1993, p344). In this example, F is significant ($p<.05$) even though the size of the interaction effect is small ($\Delta R^2 = .00668$) meaning that the interaction explains only an additional .668% of commitment to work group. The best way of comparing interaction effects across different sample groups is through consideration of the change in $R^2$ when the interaction term is added. The bigger the change in $R^2$, the bigger the interaction.

### 8.3.4 Structural Equation Modelling of Interaction Effects

Structural equation modelling can also be used to examine interaction effects and was attempted in this study. SEM was not used here as a major investigative technique since MMR is sufficiently powerful given the relationships among variables proposed in chapter 5. SEM was used to further the author's understanding of the technique, following the confirmatory factor analysis in chapter 7, and the results obtained showed some support for the interactions that are described below using MMR. The techniques involved in SEM interaction modelling are explained further in Appendix I.

## 8.4 INTERACTION EFFECTS: ORGANISATIONAL COMMITMENT

### 8.4.1 Introduction

To recap on the dependent variables used in the analysis, three scales were used to measure commitment to the organisation: behavioural commitment (SMNEWOCS), affective commitment (SMACS) and a respondent-defined measure (ORGCOM). Two scales measured commitment to supervisor (SMFCSSP and SUPCOM), two scales measured commitment to top management (SMFCSTM and TOPMAN), and two scales measured commitment to the work group (SMFCSWG and WORKGP). If multiple measures of commitment to a particular focus detect interaction effects, then strong evidence for the

presence of an effect in the population is provided increasing confidence in the generalisability of the findings.

The illustration in Appendix H shows, in full, the statistics generated by each test for an interaction effect, and to present all of these for all the tests undertaken would be unwieldy. In an effort to summarise the analyses, the magnitude and significance of the F statistics calculated for each test are given in Tables 8.5 to 8.11. Three significance levels are reported, p=<.1, p=<.05 and p=<.01. For a given sample size, the larger the F value the larger the interaction effect and so F values can be compared across the rows of Tables 8.5 to 8.11, but not, directly, down the columns as the sample size varies between rows. To further assist the interpretation of the many interactions tested, the beta values have been extracted from the full regression equations and are presented at the start of Appendix K in Tables K1A to K5C. These values, which were all significant (p<.1), are all that is needed to illustrate the form of the interactions using the procedure shown in section 8.3.2. Appendix K also shows regression statistics for each step in the regression equations when a significant interaction effect was observed. To assist the comparison of results in this chapter, summary regression statistics are given to illustrate each interaction. These are; $\Delta R^2$ produced by the addition of the interaction term, $R^2$ for the full regression equation, the equation degrees of freedom (df), the F value for the change in $R^2$ and the significance of the change in F.

Looking across Tables 8.5 to 8.11 at the simple spread of F values is itself informative. If all or most of the tests had yielded an interaction effect, then that would suggest that the interactions were so pervasive as to be obvious and thus of little importance to researchers, or, that some deficiency in the research design was present such as high levels of common method variance. If no interactions had been detected then, in the presence of *a priori* theorising, that would suggest that there is a fault in the research design, perhaps in the theory, or in inadequate measurement of one or more of the constructs. As it is, about 7% of the interaction terms were significant at below the 5% level and it is important to note that the actual significance level achieved by the interaction term was often well below .05,

and often approached .001, and the chance of this proportion of interactions occurring simply by chance is very small. The importance of this point is considered in detail in Appendix L, but, for the moment, suffice it to say that the actual proportion of statistically significant interaction terms observed is encouraging. We can now turn to the detection of patterns and trends that appear in the data.

**Table 8.5** **F values for interactions between perceived organisational support and social exchange ideology (Proposition P2, centred variables).**

| Group | SMACS | ORGCOM | SMNEWOCS | SUPCOM | TOPMAN | WORKGP | SMFCSSP | SMFCSTM | SMFCSWG |
|---|---|---|---|---|---|---|---|---|---|
| All | - | - | - | 3.68 | - | 4.89* | - | - | - |
| men | - | - | - | 2.75 | - | 4.80* | - | - | 2.82 |
| women | - | - | - | - | - | - | - | - | - |
| union members | - | 6.86** | - | - | - | - | - | 4.22* | - |
| tenure <2 years | - | 3.44 | 7.02** | - | - | - | - | - | - |
| invol=0 | - | - | - | 4.58* | - | 2.94 | - | - | 3.69 |
| invol>1 | 3.00 | - | - | 6.22* | - | - | 2.86 | - | - |
| invol>=1 | 2.77 | - | 3.46 | - | - | - | 4.22* | - | - |
| non-union | - | - | - | - | - | 4.04* | 3.16 | - | - |
| age >50y | - | 3.09 | - | - | - | - | - | - | - |
| | | | | | | | | | |

['-' denotes that no interaction effect was observed. ** denotes p <.01, * denotes p<.05, other F values significant at p < .1].

**Table 8.6** **F Values for interactions between perceived organisational support and social exchange ideology, (Proposition P2, centred variables, data set limited to high reliability cases for Exchange).**

| Group | Dependent Variable | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | SMACS | ORGCOM | SMNEWOCS | SUPCOM | TOPMAN | WORKGP | SMFCSSP | SMFCSTM | SMFCSWG |
| All | - | 3.17 | - | 3.96* | - | 7.70** | - | - | 3.13 |
| men | - | 3.67 | - | 4.76* | 3.22 | 8.50** | - | - | 3.71 |
| women | - | - | - | - | - | - | - | - | - |
| union | - | 6.06* | - | - | - | - | - | - | - |
| non-union | - | - | - | - | - | 5.52* | - | - | - |
| tenure < 2y | - | 5.69* | 9.57** | - | 3.86 | - | - | - | - |
| invol=0 | - | - | - | 3.45 | - | 4.78* | - | - | 3.56 |
| invol>1 | - | - | - | - | - | - | - | - | - |
| invol>=1 | - | - | 3.78 | - | - | - | - | - | - |
| age > 50y | - | 2.88 | - | 2.81 | - | 3.45 | - | - | - |
| | | | | | | | | | |

[High reliability for Exchange was obtained by eliminating cases for which the absolute value of inter-item differences in the scale was > 12. '-' denotes no interaction effect. ** denotes p < .01, * denotes p < .05, other F values significant at p < .1]. file fval_pse.iab

**Table 8.7 F Values for interactions between professionalism and social exchange (Proposition P3, centred variables)**

| Group | Dependent Variable | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | SMACS | ORGCOM | SMNEWOCS | SUPCOM | TOPMAN | WORKGP | SMFCSSP | SMFCSTM | SMFCSWG |
| All | 8.76** | 7.63** | 6.66* | 4.94* | 6.77* | 11.16** | - | - | - |
| men | 5.76* | 5.19* | 5.46* | - | 7.77** | 4.58* | - | - | - |
| women | - | - | - | - | - | 6.81* | - | - | - |
| union | 9.56** | 14.61** | 11.26** | - | 3.45 | 3.57 | - | - | - |
| non-union | - | - | - | 2.85 | 2.97 | 6.10* | - | - | - |
| tenure < 2y | - | - | 4.86* | - | 5.26* | - | - | - | - |
| invol=0 | 8.94** | 9.81** | 4.35* | 10.86** | 5.43* | 9.80** | - | - | - |
| invol>1 | - | - | - | - | - | - | - | - | - |
| invol>=1 | - | - | - | - | - | - | - | - | - |
| age > 50y | - | - | - | - | - | - | - | - | - |
| | | | | | | | | | |

['-' denotes that no interaction effect was observed. ** denotes p <.01, * denotes p<.05, other F values significant at p < .1].

**Table 8.8** **F Values for interaction between professionalism and social exchange, (Proposition P3, centred variables, high reliability cases for social exchange)**

| Group | Dependent Variable | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | SMACS | ORGCOM | SMNEWOCS | SUPCOM | TOPMAN | WORKGP | SMFCSSP | SMFCSTM | SMFCSWG |
| All | 8.20** | 12.21** | 7.68** | 6.00* | 11.81** | 13.02** | - | - | - |
| men | 6.90* | 9.52** | 6.54* | 5.22* | 14.06** | 8.57** | - | - | - |
| women | - | - | - | - | - | 5.05* | - | - | - |
| union | 8.58** | 17.02** | 8.04** | - | 3.68* | 6.89* | - | - | - |
| non-union | - | - | - | 3.73 | 6.90* | - | - | - | - |
| tenure < 2y | - | 3.32 | 4.74* | - | 6.67* | - | - | - | - |
| invol=0 | 10.71** | 15.62** | 5.42* | 5.57* | 10.97** | 11.82** | 3.28 | 2.95 | - |
| invol>1 | - | - | - | - | - | - | - | - | - |
| invol>=1 | - | - | 2.78 | - | - | - | - | - | - |
| age > 50y | - | - | - | 3.53 | - | 4.17* | - | - | - |
| | | | | | | | | | |

['-' denotes no interaction effect. ** denotes $p < .01$, * denotes $p < .05$, other F values significant at $p < .1$].

**Table 8.9** **F Values for interaction between professionalism and job insecurity,(Proposition P4, high reliability cases for job insecurity only).**

| Group | Dependent Variable | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | SMACS | ORGCOM | SMNEWOCS | SUPCOM | TOPMAN | WORKGP | SMFCSSP | SMFCSTM | SMFCSWG |
| All | - | - | - | - | - | - | 2.79 | - | - |
| men | 3.15 | - | 3.21 | - | 5.53* | - | - | - | - |
| women | 3.17 | - | - | - | 7.87* | 3.32 | - | 2.72 | - |
| union | - | - | - | - | - | - | - | - | - |
| non-union | - | - | - | - | - | - | - | - | - |
| tenure < 2y | - | - | - | - | - | - | - | - | - |
| invol=0 | 2.56* | - | 2.87 | - | - | - | - | - | - |
| invol>1 | - | - | - | - | - | - | - | - | - |
| invol>=1 | 2.71 | - | - | - | - | - | - | - | - |
| age > 50y | - | 3.45 | 3.08 | - | 8.14* | - | - | 9.08* | - |
| | | | | | | | | | |

['-' denotes no interaction effect. ** denotes $p < .01$, * denotes $p < .05$, other F values significant at $p < .1$
The signs of the interaction beta coefficients for women were all positive as was the interaction on SMACS for IVC=1.
All other interactions were negative].

**Table 8.10 F Values for interactions between professionalism and continuance commitment, (Proposition P5, centred variables)**

| Group | Dependent Variable | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | SMACS | ORGCOM | SMNEWOCS | SUPCOM | TOPMAN | WORKGP | SMFCSSP | SMFCSTM | SMFCSWG |
| All | - | - | 13.91** | - | - | - | - | - | - |
| men | - | - | 13.14** | - | 4.37* | - | - | - | - |
| women | - | - | - | - | - | - | - | - | - |
| union | - | 4.71* | 10.49** | - | 5.33* | - | - | 8.26* | - |
| non-union | - | - | 5.33* | - | - | - | - | - | - |
| tenure < 2y | - | - | - | - | - | - | - | - | - |
| invol=0 | - | - | 9.62** | - | - | - | - | - | - |
| invol>1 | - | - | 2.98 | - | 3.30 | - | 5.74* | 4.99* | - |
| invol>=1 | - | - | 5.28* | - | 3.91 | - | - | - | - |
| age > 50y | 2.83 | - | 15.40** | - | 8.50** | - | 2.82 | 5.85* | 4.28* |
| | | | | | | | | | |

['-' denotes no interaction effect. ** denotes $p < .01$, * denotes $p < .05$, other F values significant at $p < .1$. The signs of beta for the interaction terms was negative].

**Table 8.11 F Values for interactions with qualitative moderators; union membership, sex and involuntary job change.**

| Interaction | Dependent Variable | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | SMACS | ORGCOM | SMNEWOCS | SUPCOM | TOPMAN | WORKGP | SMFCSSP | SMFCSTM | SMFCSWG |
| | | | | | | | | | |
| Support_Union | - | - | 4.38* | - | - | 4.95* | - | - | - |
| Prof'm_Union | - | - | - | - | - | - | - | - | - |
| Support_Sex | - | - | - | 5.59* | - | 2.80 | - | - | - |
| Prof'm_Sex | - | - | - | - | - | - | - | - | |
| Involuntary job Change_Support | - | 3.08 | - | - | - | - | - | - | |
| Involuntary job change_Prof'm | - | - | 3.01 | - | - | - | - | - | |

['-' denotes no interaction effect. ** denotes $p < .01$, * denotes $p < .05$, other F values significant at $p < .1$. All cases were included in this analysis].

The regression equations obtained were as follows:

SMNEWOCS = 36.0 + .50SMPOS - .29UNION + .25XPOSUNIO (F=4.38)
WORKGP = 66.4 + .32SMPOS - .27UNION + .28XPOSUNIO (F=4.95)
WORKGP = 66.6 + .33SMPOS - .39SEX + .25XSEXPOS (F=2.80)
SUPCOM = 44.4 + .34SMPOS - .39SEX + .35XSEXPOS (F=5.59)
ORGCOM = 31.3 + .52SMPOS - .22INVLDUMY + .20XINVLPOS (F=3.08)
SMNEWOCS = 31.1 + .48SMPC_PMA - .31INVLDUMY + .29XINVLPCA (F=3.01)

For the dummy variables, union membership, female and involuntary job change were coded 1, otherwise 0.

### 8.4.2 Perceived Support and Social Exchange Interactions

This section examines Proposition P2 (section 5.3.4), which examines whether the negative relationship between social exchange and the various foci of commitment is the same for all levels of perceived support and exchange. Thus the ability of perceived support to offset the negative influence of social exchange on commitment is examined. Using centred variables, the general equation tested was

$$\text{Commitment} = C + b_1\text{CENPOS} + b_2\text{CENTEI} + b_3\text{XCENPSEI} + \text{error}$$

where XCENPSEI represents the interaction term. F values for this equation when applied to the various sample groups are shown in Table 8.5.

#### 8.4.2.1 Organisational Commitment

The propositions under test, P2, P2a and P2b are restated below together with evidence from the analysis.

**P2 Perceived organisational support will moderate the relationship between social exchange and organisational commitment.**

For the aggregate sample, perceived support did not moderate the negative effects of social exchange on organisational commitment since no interaction effect was observed for any of the three organisational commitment measures. An effect was observed on ORGCOM for CIPFA members ($\Delta R^2$=.0126, $R^2$=.412, df 3 161, F=3.43, p<.1). Thus P2 was not supported although the identification of a weak effect with CIPFA members suggests that there might be a condition in which the hypothesis can be substantiated and this possibility is now examined.

**P2a The moderating effects of perceived support on social exchange will be stronger for people who have experienced involuntary job change than for those who have not.**

The experience of involuntary job change associated with moderate interaction effects for both affective commitment (SMACS, $\Delta R^2$=.0127, $R^2$=.523, df 3, 104, F=2.77, p<.1) and behavioural commitment (SMNEWOCS, $\Delta R^2$=.024, $R^2$=.32, df 3, 97, F=3.46, p<.1) for people who had experienced one or more involuntary job changes. No effects were observed for people who had not experienced involuntary job change and so P2a is supported.

Substituting values for high, moderate and low support and exchange into the regression equation obtained, gives Table 8.12 which shows the values for behavioural commitment. At low support, commitment decreases with increasing exchange, at moderate support, commitment is constant, at high support, commitment increases despite increasing exchange. At average or high exchange, behavioural commitment increases with increasing support. At low exchange, commitment appears to decrease slightly with increasing support.

**Table 8.12 Behavioural commitment: support/exchange interaction (involuntary job change)**

| Social Exchange | | | Perceived Support |
|---|---|---|---|
| low | average | high | |
| 51 | 59 | 67 | high |
| 54 | 54 | 54 | average |
| 56 | 48 | 40 | low |

[SMNEWOCS = 53.6 + .51CENPOS + .16XCENPSEI. F=3.46]

**P2b The moderating effects of perceived support on social exchange will be stronger for people with low tenure.**

Low tenure (less than two years) associated with a strong interaction effect with behavioural commitment (SMNEWOCS, $\Delta R^2$=.049, $R^2$=.479, df 3,75, F=7.02, p < .01) and a weaker effect for ORGCOM ($\Delta R^2$=.029, $R^2$=.328, df 3,79 F=3.44, p< .1) indicating that perceived support moderates the effect of exchange on commitment in the first two years of employment with an organisation. Thus P2b is supported and Table 8.13 shows the values of behavioural commitment obtained from the interaction regression equation.

**Table 8.13 Behavioural commitment: support/exchange interactions (tenure <2 years)**

| Social Exchange | | | Perceived Support |
|---|---|---|---|
| low | average | high | |
| 47 | 58 | 68 | high |
| 52 | 52 | 51 | average |
| 58 | 46 | 34 | low |

[SMNEWOCS = 52.2 + .53CENPOS - .24CENTEI + .22XCENPSEI. F=7.02]

At low support, commitment decreases with increasing exchange. At average support, commitment is unaffected by the level of exchange, but at high support, commitment increases with increasing exchange.

Returning to the interaction found on respondent-defined commitment for CIPFA members, it is worth noting that a high proportion of CIPFA respondents were also members of a union. On limiting the analysis to union members only, a strong effect was observed on respondent-defined commitment (ORGCOM, $\Delta R^2$=.0297, $R^2$=.438, df 3, 130, F=6.86, p <.01) and no effect was observed for people who were not union members. Thus, there is partial support for a fresh proposition, P2c, that perceived support moderates social exchange among union members but not among non-union members. However, the effect was not observed on affective commitment (SMACS) or behavioural commitment (SMNEWOCS). Table 8.14 shows the same, broad, pattern of commitment values as obtained above.

**Table 8.14 Respondent-defined commitment: support/exchange interaction (union members)**

| Social Exchange | | | Perceived Support |
|---|---|---|---|
| low | average | high | |
| 71 | 81 | 91 | high |
| 74 | 75 | 76 | average |
| 80 | 70 | 59 | low |

[ORGCOM = 75.5 + .55CENPOS - .14CENTEI + .19XCENPSEI. F=6.86]

8.4.2.2 Summary

The hypothesised support-exchange interaction (P2) did not hold in all situations tested but did hold in certain situations.

- There are weak interactions on the behavioural commitment scale for people who have experienced involuntary job change. These were also weakly detected by the Affective Commitment Scale.

- Short tenure also influences the support-exchange relationship to the new behavioural commitment scale and this effect was also detected by the respondent-defined measure (ORGCOM).

- The ability of the behavioural scale to detect interactions alongside a respondent-defined measure and affective commitment strengthens the claim that the new scale is tapping a commitment construct.

P2 cannot be accepted unequivocally but nor can it be rejected. These results reveal the scope and limitations of the support-exchange relationship as there is some evidence in

support of P2a as both affective commitment and the new behavioural commitment scale detected weak effects ($p<.1$). P2b was partially supported through interactions for ORGCOM ($p<.1$) and the new behavioural scale ($<.01$).

### 8.4.3 Professionalism and Social Exchange Interactions

#### 8.4.3.1 Organisational Commitment

This section examines whether the weak negative relationship between social exchange and the various foci of commitment is the same for all levels of professionalism. Thus, the ability of professionalism to offset the negative influence of social exchange on commitment is examined. Using centred variables the general equation tested was,

$$\text{Commitment} = C + b_1\text{CNPC_PCA} + b_2\text{CENTEI} + b_3\text{XCNPCAEI} + \text{error}$$

where XCNPCAEI represents the professionalism/exchange interaction term. The proposition under test is

**P3 Professionalism moderates the relationship between social exchange and organisational commitment.**

For the aggregate sample a significant interaction effect was observed for all three measures of organisational commitment (SMACS $\Delta R^2=.011$, $R^2=.195$, df 3, 621, $F=8.76$, $p<.01$; ORGCOM $\Delta R^2=.010$, $R^2=.169$, df 3, 611, $F=7.63$, $p<.01$; SMNEWOCS $\Delta R^2=.008$, $R^2=.274$, df 3, 601, $F=6.16$, $p<.05$). This was repeated with public sector accountants (SMACS $\Delta R^2=.06$, $R^2=.190$, df 3, 161, $F=11.93$, $p<.001$; ORGCOM $\Delta R^2=.07$, $R^2=.285$, df 3, 160, $F=15.75$, $p<.001$; SMNEWOCS $\Delta R^2=.046$, $R^2=.282$, df 3, 159, $F=10.47$, $p<.01$). No interaction effects were observed in the RSC or the CIMA sample. In the regression equations for behavioural and affective commitment, the main effect for social exchange was not significant ($p<.1$).

The F value for the interaction in the CIPFA sample, 15.75, is relatively high and the interaction effects on respondent-defined commitment are shown in Table 8.15

**Table 8.15 Respondent-defined commitment: professionalism/exchange interaction (CIPFA)**

| Social Exchange | | | Professionalism |
|---|---|---|---|
| low | average | high | |
| 68 | 78 | 89 | high |
| 76 | 75 | 76 | average |
| 85 | 72 | 61 | low |

[ORGCOM = 75 +.38CNPC_PCA - .19CENTEI + .27XCNPCAEI. F=15.75].

The pattern of commitment values obtained is similar to that noted above for support/exchange interactions. Thus, P3 is accepted and the boundaries to P3 are now examined.

**P3a The moderating effects of professionalism on social exchange will be stronger for people who have experienced involuntary job change than for those who have not.**

Involuntary job change did not associate with a professionalism-exchange interaction effect on any measure of organisational commitment in any sample sub-group and thus P3a is rejected.

**P3b The moderating effects of professionalism on commitment will be stronger for people with low tenure.**

Tenure of less than 2 years associated with an effect for behavioural commitment (SMNEWOCS, $\Delta R^2$=.032, $R^2$ =.508, df 3, 75, F=4.86, p<.05) but not for affective commitment or ORGCOM. Thus, P3b is supported for behavioural commitment only.

In view of the finding, above, that union membership may play a part in interactions, the professionalism-exchange interaction was tested on two groups of union and non-union members. All three measures of organisational commitment detected significant interaction effects for union members (SMACS $\Delta R^2$=.056, $R^2$=.238, df 3, 130, F=9.56, p<.01; ORGCOM $\Delta R^2$=.074, $R^2$=.349, df 3, 129, F=4.61 p<.01; SMNEWOCS $^2\Delta R$ =.064, $R^2$=.275, df 3, 128, F=11.26, p<.001). No interaction effects were observed in the much larger sub-sample of non-union members. It seems reasonable, therefore, to advance another proposition, P3c, that professionalism moderates the commitment-exchange relationship for union members but not among non-union members.

8.4.3.2 Summary

The proposed interaction between professionalism and social exchange (P3) is accepted and the ability of the new commitment scale to detect interactions alongside alternative measures provides further evidence for its construct validity. P3a is rejected, however, as involuntary job change does not associate with stronger interactions. P3b is accepted, also on the basis of $\Delta R^2$, with the qualification that it appears to hold for the new behavioural scale rather than a purely affective expression of commitment. Given that $\Delta R^2$ values of 6% to 7% were observed in the presence of a sample of about 130 union members but not in a sample of around 485 non-union members, union membership appears to have an influence upon the professionalism-exchange interaction.

### 8.4.4 Scale Reliability and Interaction Effects

This section deals with an important methodological issue in the search for interaction effects and leads to a strengthening of the tests of propositions P2 and P3 and their derivatives. It draws upon the argument (Thompson, 1994, p.839) that a test or instrument cannot itself be reliable or unreliable. Strictly, it is the scores obtained by a test that are reliable or not, depending upon the researcher's criteria for assessing reliability. Given that

reliability will attenuate interaction effect sizes (Thompson, 1994, p.840), it is legitimate to assess the effect of score reliability on effect size.

In general, good internal consistency reliability was obtained for the data obtained and used in this study. However, one of the lowest reliabilities observed was for the scores on the social exchange scale (Cronbach's alpha = .73). Alpha is a function of the inter-item variance and a moderate alpha could result from moderate variance in scale scores from all respondents, or, it could result from a combination of highly consistent responses by some respondents and inconsistent responses from others. Having personally input all the data, it was evident that the latter case applied to the social exchange scale. The detection of moderator effects is influenced by the reliability of measures (Evans, 1985; Jaccard et al. 1990, p.40; Jaccard and Wan, 1996, p.2; Thompson, 1994, p.840) since the reliability of the interaction term is the product of the reliabilities of the two main effects terms from which it is computed. I was interested to know to what extent the regression equations involving social exchange would alter if the analysis was limited to respondents whose social exchange score was highly 'reliable'.

Bernardi (1994) proposed a simple way of identifying respondents according to the reliability of their item responses. Consider a four item scale (such as social exchange) with items A, B, C, and D. The inter-item variance is a function of the terms

A-B, A-C, A-D, B-C, B-D, C-D.

Across the sample, each of these terms, e.g. A-B, will have positive and negative values and the sum of these terms for an individual respondent would tend towards zero. This can be overcome by summing the absolute values (positive values) of the inter-item differences and a new variable, SMABSEI, was created for this purpose. Summing scores from a respondent who gave the same score to each item (equivalent to an alpha of 1.0) will produce a value for SMABSEI of zero. The higher the inter-item difference, the higher the sum of the absolute values. Alpha was computed for each value of the sum of inter-item differences and Table 8.16 below shows how alpha changed with SMABSEI.

**Table 8.16 Social exchange: inter-item variance and reliability**

| SMABSEI | Alpha | Total Sample Size |
|---|---|---|
| <7 | .966 | 241 |
| <10 | .914 | 371 |
| =<12 | .868 | 450 |
| <14 | .832 | 513 |
| <15 | .807 | 551 |

An alpha of .868 for social exchange represents a substantial increase on the original .73 and also retains a good overall sample size (n=450). For these reasons, SMABSEI =<12 was taken as a cut-off point to examine the interactions free of 'unreliable' social exchange cases.

8.4.4.1 Perceived Support and Social Exchange

F values for high reliability social exchange cases are given in Table 8.6 and can be compared to F values for all cases in Table 8.5. Column by column, the barely significant effect for affective commitment (SMACS) noticed previously for persons who had experienced involuntary job change disappeared, presumably as a result of that sample group falling from 104 to 76. For ORGCOM, faint effects were observed across additional sub-groups, CIPFA, RSC and men, and the effect noted earlier among short-tenure people had magnified ($\Delta R^2$=.054, $R^2$=.388, df 3, 64, F=5.69, p<.05) as it had with behavioural commitment (SMNEWOCS, $\Delta R^2$=.077, $R^2$=.519, df 3, 60, F=9.57, p<.01). In the face of this evidence, the hypothesis that perceived support moderates social exchange, P2, is substantiated in certain circumstances, such as when tenure is low (P2b). The overall effect of limiting the analysis to 'high reliability' cases strengthens the case for accepting P2 as additional effects were detected for ORGCOM and larger effects were observed on SMNEWOCS despite a reduction in sample size. The additional proposition relating to union membership was also further supported by this analysis in view of increases to $\Delta R^2$.

(ORGCOM: high reliability cases, $\Delta R^2$=.038, $R^2$=.430, df 3,90, F=6.06, p<.05; all cases, $\Delta R^2$=.029, $R^2$=.438, df 3,130, F=6.86, p<.01).

8.4.4.2 Professionalism and Social Exchange

F values for high reliability social exchange interactions with professionalism are given in Table 8.8 and can be compared to F values for all cases in Table 8.7. For the three measures of organisational commitment, the F values increased for the CIPFA sample. Other than that, the general pattern of results was repeated and P3 was substantiated. Only one additional effect was noted for people who have experienced involuntary job change (SMNEWOCS $\Delta R^2$=.023, $R^2$=.407, df 3, 70, F=2.78, p<.1) but this is not sufficient to change the previous conclusion that P3a is rejected.

For union members, the F value for ORGCOM increased to 17.02 whereas the F value for behavioural commitment (SMNEWOCS) decreased from 11.26 to 8.04. The main effect of social exchange in the prediction of behavioural commitment was again not significant. An additional interaction effect was observed for persons of low tenure for ORGCOM (F=3.32, p<.1) and the behavioural commitment interaction remained (F=4.74, p<.05), giving additional support for the acceptance of P3b. Overall, the new proposition that interactions are stronger for union members than non-union members was supported

8.4.4.3 Objections to Sample Trimming

An objection to trimming the sample to isolate high reliability social exchange cases is that the sample estimate of alpha in the population was .73 and a trimmed sample is no longer a population sample and that some bias has been introduced. To counter this point, examination of the distribution of SMABSEI scores showed that low reliability on the social exchange scale was distributed evenly in the sample. The proportion of respondents with SMABSEI >=13 (low reliability) was 30.1% among union members and 27.8% among non-union members. For men and women, the proportions were 28.0% and 29.3%

respectively. One-way ANOVA showed no difference in the mean SMABSEI score between professions when SMABSEI was >=13 (F ratio .94, F prob .39, df=2, 176). Thus, the elimination of respondents with low reliability on the scale retains much of the heterogeneity of the original sample. More important, sample trimming in the manner undertaken will not create an interaction effect when there is none present in the data. It will simply amplify any effects that exist in the population, allowing for the reduction in sample size that accompanies it.

### 8.4.5 Professionalism and Job Insecurity

This section examines P4,

**P4 Professionalism will moderate the relationship between job insecurity and organisational commitment.**

A job insecurity scale was created by reversing the scores on the 7-point job security scale such that a score of 1 for job security became 7 on an insecurity scale, a score of 2 for job security became 6 on the insecurity scale, and so on. Due to the low alpha for job insecurity (.61) the sample was trimmed, using a similar procedure to that described above, from 633 to 460 cases for which alpha overall was .836. The sign of the job insecurity main effect was always negative and, for this 'high reliability' set, interactions were observed for men on both affective commitment (SMACS $\Delta R^2$=.006, $R^2$=.275, df 3, 353, F=3.15, p<.1) and behavioural commitment (SMNEWOCS $\Delta R^2$=.006, $R^2$=.334, df 3, 341, F=3.21, p<.1). In both cases, the sign of the interaction term was also negative.

Interactions for affective and behavioural commitment were also noted for people with no involuntary job change (SMACS F=2.57, p<.1; SMNEWOCS F=2.87, p<.1) and, again, the interactions were negative. The behavioural commitment scale detected an interaction effect when respondents were aged over 50 (SMNEWOCS $\Delta R^2$=.032, $R^2$=.429, df 3, 56, F=3.08, p<.1) alongside ORGCOM ($\Delta R^2$=.052, $R^2$=.162, df 3, 56, F=3.08, p<.1) but

affective commitment (SMACS) did not detect this interaction. Thus, P4 is accepted and the significance of the negative interaction term found in each case shows a different form of interaction to that described above for interactions with social exchange. To illustrate this relationship, the prediction of affective commitment for men is examined below in Table 8.17. The regression equation for behavioural commitment was very similar to that obtained for affective commitment and produces a similar pattern of scores.

**Table 8.17 Affective commitment: professionalism/job insecurity interaction (men)**

| Job Insecurity | | | Professionalism |
|---|---|---|---|
| low | average | high | |
| 42 | 39 | 35 | high |
| 36 | 35 | 34 | average |
| 29 | 31 | 34 | low |

[SMACS = 35.0 +.42CNPC_A - .20CENTJINS -.08XCNJIPCA. F=3.15].

For any level of job insecurity, commitment increases with professionalism and the increase is more pronounced at low-moderate levels of insecurity. At low professionalism, commitment increases slightly with increasing insecurity, at moderate professionalism, commitment is unaffected, but at high professionalism, commitment falls with increasing insecurity. It is interesting to note that this pattern, caused by the negative interaction term, was found in all sub-groups tested except one. The interaction between job insecurity and professionalism on affective commitment was positive only when confined to women (SMACS, $\Delta R^2$=.025, $R^2$=.250, df 3,96, F=3.17, p<.1) and is illustrated in Table 8.18 below.

**Table 8.18 Affective commitment: professionalism/job insecurity interactions (women)**

| Job Insecurity | | | Professionalism |
|---|---|---|---|
| low | average | high | |
| 32 | 37 | 42 | high |
| 34 | 33 | 32 | average |
| 35 | 29 | 23 | low |

[SMACS = 33.0 + .44CNPC_PCA - .16SMJINS + .16XCNPCAJI. F=3.17]

### 8.4.6 Professionalism and Continuance Commitment

This section examines the proposition

**P5 Professionalism moderates the relationship between organisational commitment and continuance commitment.**

For all cases, only behavioural commitment (SMNEWOCS) detected an interaction effect ($\Delta R^2$=.016, $R^2$=.282, df 3, 599, F=13.91, p<.001) which persisted across the subgroups, CIMA ($\Delta R^2$=.034, $R^2$=.246, df 3, 128, F=5.72, p<.05), RSC ($\Delta R^2$=.01, R2=.31, df 3, 304, F=4.30, p<.05), CIPFA ($\Delta R^2$=.035, $R^2$=.258, df 3, 159, F=7.44, p<.01), men ($\Delta R^2$=.019, F=13.14, p<.001), non-union members ($\Delta R^2$=.01, $R^2$=.28, df 3, 466, F=5.33, p<.05), union members ($\Delta R^2$=.06, $R^2$=.268, df 3, 128, F=10.49, p<.01) and persons aged over 50 ($\Delta R^2$=.121, $R^2$=.339, df 3, 80, F=15.40, p<.001).

The sign of the continuance commitment main effect was negative, consistent with expectations, but, similar to the interaction effects reported above for job insecurity, the sign of the regression coefficient for the professionalism and continuance commitment cross-product term was also negative. This effect can be illustrated by estimating behavioural commitment using the regression equation obtained on all cases. Using centred variables (means of zero) and equating low and high levels of the predictor variables with one standard deviation below and above the mean respectively, substituting values for the

standard deviations of continuance commitment (s.d.=8.1) and professionalism (s.d=8.8) leads to the values for behavioural commitment shown in Table 8.19.

**Table 8.19 Behavioural commitment: professionalism/continuance commitment interaction**

| Continuance Commitment | | | Professionalism |
|---|---|---|---|
| low | avge | high | |
| 67 | 57 | 47 | high |
| 54 | 53 | 52 | avge |
| 40 | 49 | 57 | low |

[SMNEWOCS = 52.8 +.49CENTPC_A - .09CENTCC - .13XCNCCPCA. F=13.9]

At low professionalism, behavioural commitment increases with continuance commitment from 40 to 57. At average professionalism, behavioural commitment shows a slight decrease from 54 to 52, but, in view of the error levels, this is best seen as remaining constant. At high professionalism, behavioural commitment falls with increasing continuance commitment from 67 to 47. At low to average continuance commitment, behavioural commitment increases with professionalism, but at high continuance commitment, behavioural commitment falls with increasing professionalism from 57 to 47. This finding suggests that Gouldner's (1957) classic local-cosmopolitan theory holds when continuance is high but not when it is average or below.

Returning to Table 8.10, the data show that the largest F value (15.40, $p<.001$) was observed for employees aged over 50 who would be expected to show the highest levels of continuance commitment simply by virtue of their age. Indeed, a t-test comparing continuance commitment for persons aged over and under 50 showed that those over 50 reported significantly more continuance commitment ($t=3.01$, $p=.003$). However, the continuance commitment main effect was not significant but in the weak interaction detected for affective commitment for this age group ($F=2.83$, $p<.1$), the main effect was significant ($p<.05$).

A further twist to the analysis of continuance effects is found in the zero-order correlations between continuance commitment and the three representations of organisational commitment. Table 8.20 shows that, in the CIMA sample, continuance had a positive association with affective commitment (r=.22) and a negative association with behavioural commitment (r=-.16). Among the chemists, the zero-order correlation was stronger and negative on all three organisational commitment measures. When continuance was disaggregated into commitment from low alternatives and high sacrifices, low alternatives negatively associated with behavioural commitment for CIMA (r=-.20) whereas high sacrifice effects were not significant. High sacrifice correlated positively with affective commitment (r=.30) whereas low alternatives did not associate with affective commitment. In contrast, for CIPFA, low alternatives associated negatively with affective and behavioural commitment and high sacrifice had no association. Low alternatives also associated negatively with affective and behavioural commitment for chemists, as did high sacrifice.

These findings indicate that the effects of continuance commitment upon organisational commitment are not uniform and that they vary across sample groups. In this study, the associations in Table 8.20 differ between a non-unionised profession that would have strong ties with organisational management (CIMA), a heavily unionised profession that would also identify closely with management (CIPFA), and a mostly non-union profession whose members, in comparison, will display greater technical than managerial identification. These differences provide an explanation for the observed effects. Despite the fact that continuance commitment had positive and negative associations with behavioural commitment, depending upon the profession, the sign of the interaction term was always negative.

**Table 8.20 Continuance commitment: correlations with organisational commitment by sample group**

| | Beta value for the continuance main effect, significance | | |
|---|---|---|---|
| | SMACS | ORGCOM | SMNEWOCS |
| CIMA | .37, .000 | .19, .03 | ns |
| CIPFA | ns | ns | ns |
| RSC | -.18, .000 | ns | -.15, .004 |
| | **Zero-order correlations with continuance commitment, sig.** | | |
| CIMA | .22, .011 | ns | -.16, .06 |
| CIPFA | ns | -.15, .06 | -.15, .06 |
| RSC | -.31, .000 | -.18, .001 | -.30, .000 |
| | **Zero-order correlations with low alternatives, sig.** | | |
| CIMA | ns | ns | -.20, .019 |
| CIPFA | -.23, .002 | ns | -.26, .001 |
| RSC | -.20, .000 | ns | -.20, .000 |
| | **Zero-order correlations with high sacrifice, sig.** | | |
| CIMA | .30, .000 | .14, .094 | ns |
| CIPFA | ns | ns | ns |
| RSC . | -.34, .000 | .22, .000 | -.30, .000 |

[ns= not significant at p<.1. Beta values for continuance were calculated in a regression equation using centred variables for professionalism, continuance commitment and the cross-product interaction term]

## 8.5 ORGANISATIONAL COMMITMENT AND QUALITATIVE MODERATOR VARIABLES

So far, the analytical approach has been to test specific hypotheses on sample sub-groups. An alternative approach is to treat these sub-groups as qualitative (categorical) variables and conduct the analyses using a dummy variable to represent the groups. This procedure is explained below. The techniques for assessing qualitative moderator variables are essentially the same as for continuous variables (Jaccard et al., 1990) and require only that the qualitative predictor is treated as a dummy variable by assigning numerical values to

the categories, for example, men=0 and women=1. In essence, using qualitative predictors examines whether the relationship between two continuous variables (behavioural commitment and professionalism) differs according to the predictor used, for example, between men and women. The general equation for testing such effects is

$$Y = C + b_1X + b_2Z + b_3XZ + \text{error}$$

where Z is a dummy variable typically taking values 0 and 1 when only two categories are present. As before, rejecting the null hypothesis that $b_3=0$ indicates the presence of an interaction effect.

### 8.5.1 Homogeneity of Error Variance

A methodological complication with the use of qualitative predictors has recently been highlighted by Aguinis and Pierce (1998) who observed that previous studies may have reached erroneous conclusions as researchers have rarely tested for homogeneity of within-subject error variance, that is, error variance in the predictor groups. Homogeneity of error variance is a necessary assumption of MMR which, when violated, increases the likelihood of Type I and Type II errors (Aguinis and Pierce, 1998, p.299). Computing the error variance for a sub-group is achieved through

$$\sigma^2_{e(i)} = \sigma^2_{y(i)} (1-\rho^2_{xy(i)}) \text{ (Aguinis and Pierce, 1988)}$$

in which $\sigma^2_{e(i)}$ is the Y variance for sub-group i and $\rho^2_{xy(i)}$ the square of the X-Y correlation within sub-group i.

The issue of when homogeneity of error variance becomes heterogeneity of error variance is less clear, but the simulation studies of DeShon and Alexander (1996) show that

> The F statistic used in MMR begins to be adversely affected when error variance in one subgroup is approximately 1.5 times larger than the error variance in another subgroup. (cited in Aguinis and Pierce, 1998, p304).

Consequently, for all of the qualitative moderators examined, the error variance ratio was computed from the data shown in Appendix H. Only in two instances did the ratio barely exceed 1.5 and it was mostly below 1.3. As such the assumption of homogeneity of error variance is substantiated and the results of F tests for qualitative moderators are shown in Table 8.11. (Additional regression statistics are found in Appendix K).

### 8.5.2 Perceived Support and Union Membership

In view of the finding, above, concerning a possible influence of union membership upon commitment, union membership was coded =1 and the regression coefficient for union membership was negative indicating that being in a union has a negative effect on commitment. Regression coefficients for the interaction terms, where significant, were all positive. For the whole sample, no interaction effect was detected on affective commitment (SMACS) or respondent-defined commitment (ORGCOM) but an effect was detected on the behavioural commitment scale ($\Delta R^2$=.005, $R^2$=.306, df 3, 602, F=4.38, p<.05). No interactions were observed for commitment to supervisor or top management but an effect was observed for the whole sample on commitment to work group (WORKGP, $\Delta R^2$=.007, $R^2$=.139, df 3, 622, F=4.95, p<.05) and when involuntary change was greater than or equal to one (WORKGP, $\Delta R^2$=.036, $R^2$=.192, df 3,105, f=4.69, P<.05). Thus, the relationship between the behavioural commitment scale (SMNEWOCS) and perceived support appears to differ between union members and persons who are not union members, as does the relationship between perceived support and commitment to the work group. Thus, proposition, P2c is, again, tentatively supported (see section 8.4.2.1).

### 8.5.3 Professionalism and Union Membership

After coding respondents not in a union =0 and union members =1, union membership was not a predictor of any measure of commitment and no interaction effects were detected. This interaction was also tested on the highly unionised CIPFA sample but again, no interaction was observed. This suggests that, while the two-way, professionalism-commitment relationship is not moderated by membership of a union, membership appears to influence the relationship among commitment, professionalism and exchange.

### 8.5.4 Perceived Support and Sex

After coding men=0 and women=1, the regression coefficients for the dummy variable main effects were negative when regressed on affective commitment (SMACS) and behavioural commitment (SMNEWOCS) ($p<.05$) indicating that being female associates with lower commitment. Interactions were not observed, however, except for commitment to supervisor (SUPCOM, $\Delta R^2 = .008$, $R^2 = .157$, df 3, 620, $F=5.59$, $p<.05$) and also for commitment to the work group (WORKGP, $\Delta R^2 = .004$, $R^2 = .16$, df 3, 622, $F=2.80$, $p<.1$). Both interactions exerted a positive influence on commitment.

### 8.5.5 Professionalism and Sex

After coding men=0 and women=1, no significant main effects were observed and no interaction effects were detected. Hence the two-way relationship between professionalism and commitment to local and global foci appears not to be influenced by sex.

### 8.5.6 Perceived Support and Involuntary Job Change

Respondents with no involuntary job change were coded =0 and respondents with one or more involuntary job changes =1. The resulting dummy variable had a negative regression coefficient ($\beta$= -1.923, p=.055) only when regressed on respondent-defined commitment (ORGCOM) indicating that the experience of involuntary job change associates with lower commitment ($\Delta R^2$=.003, $R^2$=.315, df 3,611, F=3.08, p<.1). Thus, the two-way correlation between job loss and commitment can be influenced by perceived support although this is not pervasive. The relationship is more complex as suggested by P2a (see section 8.4.2.1).

### 8.5.7 Professionalism and Involuntary Job Change

The sign of the regression coefficient for the main effects dummy variable was negative only for behavioural commitment (SMNEWOCS, beta=-0.31, p=0.06) indicating that prior involuntary job change associates negatively with behavioural commitment to the current employer. A weak interaction effect was detected for the behavioural commitment scale (SMNEWOCS, $\Delta R^2$=.004, $R^2$=.265, df 3, 599, F=3.01, p<.01). The sign of the regression coefficient for the interaction term was positive (beta=0.29, p=0.084), indicating that professionalism has a positive effect on the negative influences of involuntary job change. This supplements P3a as professionalism appears to moderate the two-way relationship between job loss and commitment whereas the rejection of P3a suggests that this relationship is unaffected by previous job loss.

## 8.6 INTERACTIONS ON THE DIMENSIONS OF BEHAVIOURAL COMMITMENT

Since the behavioural commitment scale is multi-dimensional, it is informative to explore how the interactions are distributed throughout the three dimensions. For each of the

sample subgroups, the F value of the interaction where significant (p<.1) is shown in Table 8.21 to 8.24. Additional regression statistics are included in Appendix K, tables KF1 to KJ21.

### 8.6.1 Support/Exchange

Table 8.21 shows that the results are consistent with Table 8.5 and reveal that the low tenure group displays an interaction for commitment to goals and to achievement but not to innovation. The interaction for people who had experienced prior job loss (IVC) appears to be confined to the achievement dimension. The signs of the interactions were, again, positive and no additional interactions of consequence were observed.

**Table 8.21 F values for interactions between perceived support and social exchange on the dimensions of behavioural commitment**

| Sample Group | Commitment to goals | Achievement | Innovation |
|---|---|---|---|
| CIMA | 2.77 | - | - |
| Union members | 3.21 | - | - |
| Tenure < 2y | 6.68* | 6.46* | - |
| IVC >=1 | - | 6.36* | - |

['-' denotes no interaction effect. * denotes p<.05, other F values sig. p<.1]

### 8.6.2 Professionalism/Exchange

Table 8.22 shows that the interactions observed in Table 8.7 are repeated, as expected, but they reveal interactions on the dimensions concerning goals and achievement. The only interaction on the innovation dimension occurred for union members indicating that the influence of union membership on behavioural commitment is pervasive. Interactions noted earlier for the short-tenure group and those without the experience of prior job loss appear to be confined to the commitment to goals dimension. The signs of the interactions were, again, positive.

**Table 8.22 F values for interactions between professionalism and social exchange on the dimensions of behavioural commitment**

| Sample Group | Commitment to goals | Achievement | Innovation |
|---|---|---|---|
| All | 5.59* | 4.31* | - |
| CIMA | - | 3.62 | - |
| CIPFA | 11.42*** | 3.14 | - |
| Men | 4.66* | 4.19* | - |
| Union members | 9.19** | 5.84* | 2.97 |
| Tenure < 2y | 5.05* | - | - |
| IVC=0 | 5.26* | - | - |
| IVC>1 | - | - | 3.97* |
| Age > 50 y | - | 4.02* | - |

['-' denotes no interaction effect. ** denotes p<.01, * denotes p<.05, other F values sig. p<.1]

### 8.6.3 Professionalism/Job Insecurity

Table 8.23 shows that the interactions from men and those with no prior job loss are confined to the achievement and innovation dimensions. The interaction for the over-50 age group appears to be restricted to the commitment to goals dimension and showed a relatively large effect (F=15.60, p<.001). The signs of the interactions were negative.

**Table 8.23 F values for the interactions between professionalism and job insecurity on the dimensions of behavioural commitment.**

| Sample Group | Commitment to goals | Achievement | Innvotion |
|---|---|---|---|
| RSC | - | 3.83 | - |
| Men | - | - | 3.40 |
| IVC=0 | - | 3.22 | 3.11 |
| Age > 50y | 15.60*** | - | - |

['-' denotes no interaction effect. *** denotes p<.001, ** denotes p<.01, * denotes p<.05, other F values sig. p<.1]

### 8.6.4 Professionalism/Continuance Commitment

Table 8.24 shows that continuance commitment has a more general negative influence upon the three dimensions of behavioural commitment. For the whole sample, there was an interaction on the innovation and achievement dimensions but not on the goals dimension. Continuance commitment influenced all three dimensions for men, but only the innovation dimension among women. Union membership coincided with a strong negative influence of continuance commitment upon goal commitment (F=14.0) whereas, for non-union members, a strong negative interaction was observed for innovation (F=14.86). The group with no experience of prior job loss revealed negative interactions on achievement and innovation whereas those reporting prior job loss revealed negative reactions on the commitment to goals dimension. The over-50 age group revealed a very strong negative interaction on commitment to goals (F=20.8) and a smaller effect on the achievement dimension.

**Table 8.24 F values for the interactions between professionalism and continuance commitment on the dimensions of behavioural commitment.**

| Sample Group | Commitment to goals | Achievement | Innovation |
|---|---|---|---|
| All | - | 7.88 | 14.29*** |
| CIMA | - | 3.96* | 11.14*** |
| CIPFA | 5.25* | - | 5.38* |
| RSC | - | 4.93* | - |
| Men | 4.53* | 6.57* | 7.43** |
| Women | - | - | 8.32** |
| Union members | 14.00*** | 3.82 | - |
| Non-union | - | 4.42* | 14.86*** |
| IVC=0 | - | 7.73 | 12.73*** |
| IVC >=1 | 4.52* | - | - |
| IVC >1 | 3.27 | - | - |
| Age >50 y | 20.8*** | 3.84 | - |

['-' denotes no interaction effect. *** denotes p<.001, ** denotes p<.01, * denotes p<.05, other F values sig. p<.1]

## 8.7 INTERACTIONS ON COMMITMENT TO LOCAL FOCI

This section presents the results of an analysis into interaction effects concerning commitment to the supervisor, to top management and to the work group. These tests do not feature among the propositions developed in chapter 5 but are made possible by the design of the survey questionnaire. They are interesting as they extend the picture created above concerning interactions on organisational commitment. The reader is reminded that commitment to local foci was measured using line-segment measures (SUPCOM, TOPMAN and WORKGP), and Likert scales (SMFCSSP, SMFCSTM, and SMFCSWG).

### 8.7.1 Perceived Support and Social Exchange

#### 8.7.1.1 Commitment to Work Group

For the combined sample, a weak interaction effect was observed on WORKGP ($\Delta R^2$=.007, $R^2$=.152, df 3, 621, F=4.89, p< .05) and was also detected for men ($\Delta R^2$=.008, $R^2$=.155, df 3, 489, F=4.80, p<.05), for no involuntary job change ($\Delta R^2$=.005, $R^2$=.14, df 3, 510, F=2.94, p<.1), for one involuntary job change ($\Delta R^2$=.031, $R^2$=.282, df 3, 75, F=3.20, p<.1) and for non-union members ($\Delta R^2$=.007, $R^2$=.12, df 3, 486, F=4.04, p<.05). Thus, although the effect is mostly weak, the experience of job loss seems to associate with a magnification of effect size as the change in $R^2$ was .031 (3.1%).

The related measure of SMFCSWG detected faint effects for men ($\Delta R^2$=.005, $R^2$=.156, df 3, 482, F=2.82, p<.1) and for those with no involuntary job change ($\Delta R^2$=.006, $R^2$=.16, df 3, 502, F=3.69, p<.1). In this case, and others, it is important to recall that the F statistic is dependent upon both sample size and the size of the interaction effect as measured by the change in R squared. The sub-groups for which the effect was noted (men, no involuntary change, non-union members) were all large. The groups for which this interaction did not reveal itself were sometimes small and would therefore not reveal weak effects. This balance of sample size and effect size needs to be considered when

interpreting the F statistics.

In each case where an interaction was observed, the pattern of beta signs was as expected. The pattern of values for commitment to the work group (WORKGP) is shown in Table 8.25. At low support, commitment to the work group falls as exchange increases. At moderate support, commitment is stable, and at high support, commitment increases as exchange increases. When exchange is low, support appears to have little influence on commitment, but support becomes more influential when exchange is moderate or high.

**Table 8.25 Commitment to work group: support/exchange interaction**

| Social Exchange | | | Perceived Support |
|---|---|---|---|
| low | average | high | |
| 85 | 89 | 93 | high |
| 86 | 85 | 86 | average |
| 86 | 82 | 77 | low |

[WORKGP = 85.3 + .34CENPOS - .11CENTEI + .08XCNPSEI. F=4.89]

8.7.1.2 Commitment to Supervisor

For the combined sample, a weak effect was noted for SUPCOM ($\Delta R^2$=.005, $R^2$=.16, df 3, 619, F=3.68, p<.1) but was not observed for SMFCSSP. A weak but significant effect on SUPCOM was observed for people with no involuntary job change ($\Delta R^2$=.008, $R^2$=.147, df 3, 509, F=4.58, p<.05) and took the form of a negative influence by the exchange main effect and a positive interaction effect. When limited to the small group that had experienced more than one involuntary job change, an interaction was detected on SUPCOM ($\Delta R^2$=.12, $R^2$=.52, df 3, 25, F=6.22, p<.05). This was supported by a similar effect for the same group on the alternative measure (SMFCSSP, $\Delta R^2$=.065, $R^2$=.431, df 3, 25, F=2.86, p<.1) and by an effect on the group reporting one or more job changes (SMFCSSP $\Delta R^2$=.031, $R^2$=.258, df 3, 100, F=4.22, p<.05).

The form of the interaction had altered for the group reporting prior job loss. The main effect for exchange had become non-significant and the interaction term switched to being negative. Substituting values into the regression equation obtained gave the commitment values shown in Table 8.26.

**Table 8.26 Commitment to supervisor: support/exchange interaction (IVC >1)**

| Social Exchange | | | Perceived Support |
|---|---|---|---|
| low | average | high | |
| 95 | 76 | 44 | high |
| 70 | 70 | 70 | average |
| 44 | 63 | 82 | low |

[SUPCOM = 69.5 + .6CENPOS - .38XCENPSEI. F=6.22].

At low exchange, commitment rises with increasing support, at moderate exchange, commitment rises less sharply (63 to 76). At high exchange, commitment falls sharply as support increases. If this sample is to be relied upon (df 3, 25), then it indicates that people with high exchange ideology and who have experienced prior job loss, will withhold their commitment to the supervisor even when they feel the organisation is supporting them.

8.7.1.3 Commitment to Top Management

The only effect observed was for union members with (SMFCSTM, $\Delta R^2$=.019, $R^2$=.41, df 3, 131, F=4.22, p< .05). Following the point above about the influence of sample size of F values, given that df=3, 131 for this sample, it appears that union membership, or some unmeasured correlate of it, has a distinctive bearing upon the commitment-support-exchange relationship. For the larger sample groups, F values for commitment to work group interactions were larger than for commitment to supervisor which were larger, and more frequent, than commitment to top management.

than to the supervisor or top management, although the experience of involuntary job change amplifies and reverses the interactions on commitment to supervisor since both measures of supervisor commitment detected interaction effects among people who had experienced more than one involuntary change.

8.7.1.4 Scale Reliability Effects

When the data were limited to high reliability cases (section 8..4.4), interactions with WORKGP were clearly strengthened as judged by increases in F values and the alternative measure SMFCSWG showed weak effects ($p<.1$) for the sub-groups containing men and those with no involuntary change.

Commitment to supervisor (SUPCOM) revealed stronger interactions for the full sample ($\Delta R^2=.007$, $R^2=.176$, df 3 ,440, $F=3.96$, $p<.05$) and for men ($\Delta R^2=.011$, $R^2=.169$, df 3, 346, $F=4.76$, $p<.05$). The effect on SUPCOM among people who had more than one job change had disappeared as a result of the sample reduction to df 3, 16. Trimming would also explain why the effect for SMFCSSP also disappeared.

An effect for TOPMAN for men ($\Delta R^2=.006$, $F=3.22$, $p<.1$) was revealed and for low tenure ($\Delta R^2=.033$, $R^2=.440$, df 3, 65, $F=3.86$, $p<.1$). Thus, the case for accepting the proposition that perceived support moderates the effects of social exchange on commitment to the work group more so than commitment to the supervisor or to top management is strengthened.

### 8.7.2 Professionalism and Social Exchange

#### 8.7.2.1 Commitment to Work Group

An interaction effect was found for WORKGP in the full sample ($\Delta R^2$=.016, $R^2$=.12, df 3, 620, F=11.16, p<.01) and for women ($\Delta R^2$=.046, $R^2$=.135, df 3, 127, F=6.81, p<.05), for men ($\Delta R^2$=.008, $R^2$=.142, df 3, 488, F=4.58, p<.05), for union members ($\Delta R^2$=.022, $R^2$=.198, df 3, 129, F=3.57, p<.1) for non-union members ($\Delta R^2$=.005, $R^2$=.047, df 3, 483, F=2.85, p<.1) and for persons with no involuntary job change ($\Delta R^2$=.017, $R^2$=.122, df 3, 509, F=9.80, p<.01). An effect was found for public sector accountants on SMFCSWG ($\Delta R^2$=.038, $R^2$=.112, df 3, 160, F=6.82, p<.01).

#### 8.7.2.2 Commitment to Supervisor

For the full sample, an interaction effect was noted on SUPCOM ($\Delta R^2$=.007, $R^2$=.067, df 3, 618, F=4.94, p<.05). A significant effect was observed for both SUPCOM for those with no involuntary job change ($\Delta R^2$=.009, $R^2$=.083, df 3, 508, F=10.86, p<.01). No interactions were detected on the attitudinal measure of supervisor commitment, SMFCSSP.

#### 8.7.2.3 Commitment to Top Management

With TOPMAN as the dependent variable, significant effects were observed for the full sample ($\Delta R^2$=.01, $R^2$=.130, df 3,608, F=6.77, p<.01), men ($\Delta R^2$=.014, $R^2$=.148, df 3, 487, F=7.77, p<.01), for tenure less than 2 years ($\Delta R^2$=.050, $R^2$=.242, df 3, 80, F=5.26 p<.05). No interactions were detected on the attitudinal measure of top management commitment, SMFCSTM.

In all of these tests, the sign of the interaction term including exchange was positive. On the basis of the magnitude of the F values for the interaction term, these findings suggest the following proposition

- *that professionalism moderates the relationship between social exchange and commitment to a work group to a greater extent than it moderates the relationship between social exchange and commitment to foci representing the organisation, that is, the supervisor and top management.*

For all cases (Table 8.6), the interaction for the work group (F=11.16) was larger than that observed for TOPMAN (F=6.77) and that observed for commitment to supervisor (F=4.94). For the full sample, the amount of variation in $R^2$ was 12% for commitment to work group, 13% for commitment to top management, and 7% for commitment to supervisor. The proposition breaks down in some sample groups, for instance, professionalism appears to give a strong interaction on commitment to top management for men yet no interaction was observed for women to top management. Instead, an interaction on commitment to the work group was observed for women (F=6.81). The higher number of men in top management positions could be a contributing cause of this finding.

8.7.2.4 Scale Reliability Effects

When these analyses were conducted on high reliability cases for social exchange (Table 8.6), F values generally increased while the effective sample size had decreased. Interactions for commitment to work group were again more pervasive than for commitment to supervisor, although interactions for commitment to top management were generally as strong as for commitment to the work group. Thus, the proposition above that professionalism moderates the relationship between commitment to a work group and to top management to a greater extent than it moderates the relationship between social exchange and commitment to the supervisor is substantiated. This proposition is valid, however, only insofar as the respondent-defined measures of commitment to these variables are valid, as few interactions were observed on their attitude-scale equivalents (e.g. SMFCSTM).

### 8.7.3 Professionalism and Job Insecurity

Commitment to work group (WORKGP) detected an interaction for women ($\Delta R^2$=.032, $R^2$=.069, df 3, 95, F=3.32, p<.1) and the job insecurity main effect was not significant.

Commitment to supervisor detected a weak interaction on for the whole sample (SMFCSSP, $\Delta R^2$=.005, $R^2$=.123, df 3, 442, F=2.79, p<.1) and the sign of the interaction term was negative (β=-.07).

Commitment to top management (TOPMAN) did not detect interactions in the overall sample but did detect a negative interaction (β=-.12) for men ($\Delta R^2$=.013, $R^2$=.171, df 3, 353, F=5.53, p<.05) for people aged over 50 (β=-.31, $\Delta R^2$=.10, $R^2$=.326, df 3, 57 F=8.14, p<.01). The over-50 age group also produced a negative interaction on SMFCSTM ($\Delta R^2$=.10, $R^2$=.402, df 3, 54, F=9.08, p<.01). One of the characteristics of the over 50 age group is that, by virtue of their age, they are more likely to be in management posts and, if so, this could have an influence on this finding.

**Table 8.27 Commitment to top management: professionalism/job insecurity interaction (Age > 50)**

| Job Insecurity | | | Professionalism |
|---|---|---|---|
| low | average | high | |
| 28 | 17 | 5 | high |
| 15 | 14 | 13 | average |
| 2 | 11 | 20 | low |

[SMFCSTM = 14.1 + .33CENTPC_A -.34CENTJINS - .31XCNJIPCA. F=9.08]

The interaction effects for women on top management (TOPMAN, $\Delta R^2$=.067, $R^2$=.187, df 3, 96 F=7.87, p<.01) and (SMFCSTM, $\Delta R^2$=.023, $R^2$=.20, df 3, 93, F=2.72, p=.1) in contrast to men, showed non-significant main effects for job insecurity and positive interaction terms. Thus, further evidence is provided that professionalism moderates the

negative influence of job insecurity (P4), although the effects appear to differ between men and women.

### 8.7.4 Professionalism and Continuance Commitment

In the combined sample (Table 8.9), no interactions were detected for commitment to supervisor or to work group, due presumably to the absence of a zero-order correlation between continuance commitment and the dependent variable. The only exception is that professionalism appears to interact with the negative influence of continuance commitment on commitment to the supervisor for people who have experienced more than one involuntary job change. This result calls for extreme caution, however, in view of the small group involved and the non-significant main effects of professionalism and continuance commitment. For SMFCSSP, the interaction term was negative ($\beta$=-.41) and the overall equation was significant ($F_{eqn}$=2.48, p=.084, $\Delta R^2$=.168, $R^2$=.229, df 3, 25, F=5.74, p<.05).

Negative interactions were also detected for several groups for commitment to top management (TOPMAN), in particular, men (F=4.37, p<.05) union members (F=5.33, p<.05) and for those with one or more involuntary job change (F=3.91, p<.1). The effect on the involuntary job change group was also detected on the attitudinal measure (SMFCSTM, $\Delta R^2$=.106, $R^2$=.418, df 3, 24, F=4.99, p<.05). Table 8.28 shows that, at low continuance, commitment to top management increases with professionalism (44-75) and at moderate continuance there is a slight increase (56-61). At high continuance, commitment to top management falls from 67-46. At low professionalism, commitment to top management rises with increasing continuance, at moderate professionalism there is a slight increase, but at high professionalism, commitment falls from 75 to 46.

**Table 8.28 Commitment to top management: professionalism/continuance commitment (IVC >=1)**

| Continuance Commitment | | | Professionalism |
|---|---|---|---|
| low | average | high | |
| 75 | 61 | 46 | high |
| 60 | 58 | 57 | average |
| 44 | 56 | 67 | low |

[TOPMAN = 58.3 + .28CENTPCA -.22CENTCC -.18XCNCCPCA. F=3.91]

The largest interaction was for the over 50 age group on TOPMAN ($\Delta R^2$=.087, $R^2$=.163, df 3, 82, F=8.50, p<.01), which was also detected by SMFCSTM ($\Delta R^2$=.055, $R^2$=.244, df 3, 80, F=5.85, p<.05).

The over-50 age group also demonstrated a negative interaction ($\beta$=-.20) on commitment to the supervisor and, again, the continuance commitment main effect was not significant (SMFCSSP, $\Delta R^2$=.03, $R^2$=.141, df 3, 81, F=2.82, p<.1).

## 8.8 CHAPTER SUMMARY

This chapter has presented the main findings of a study that examined the criterion-related validity of the new commitment scale and, in doing so, explored the influence of some highly proximal variables in the current commitment domain. The F values given in Tables 8.5 to 8.11 and the supporting regression statistics do not lend themselves to quick interpretation and, based upon interpretable patterns in the data, conclusions arising from testing the propositions P2 to P5 and additional findings are summarised in Table 8.29. Few interactions were found when tested on the samples of CIMA and RSC members but they were found when tested on the CIPFA sample. This was attributed more to union membership than to some aspect of the profession or sector. Personal, situational variables had a greater influence upon the presence or absence of an interaction than the profession itself.

The professional groups revealed differences in the prediction of behavioural commitment as in neither of the accounting samples were social exchange and job insecurity predictors although they were for the RSC members. In general, the predictors of behavioural commitment had greatest influence among RSC members, then CIPFA, then CIMA. For all professions, commitment to goals was primarily influenced by perceived support and professionalism. Professional autonomy was a consistent predictor of Achievement across the three samples. Perceived support was only a predictor of Achievement for CIPFA. Professional autonomy was the largest predictor of Innovation for CIPFA and RSC but not CIMA for which commitment to the profession was more influential. Continuance commitment was a negative predictor of Innovation. Perceived support was not a predictor of Innovation for any profession and only predicted Achievement for the CIPFA sample.

Turning to look at the aggregated sample, in general, perceived support does not overcome the negative influence of social exchange although there are certain circumstances in which it does. Professionalism is a more pervasive moderator of social exchange. Continuance commitment and job insecurity appear to be particularly aggressive negative influences on organisational commitments since they resist the positive influences of professionalism.

Construct validity of the new behavioural commitment scale is supported since it moved in harmony with the Affective Commitment Scale (ACS) and the respondent-defined measure of commitment (ORGCOM) in interactions between professionalism and social exchange. It also paralleled ORGCOM in the interaction between perceived support and social exchange with the short tenure sample. It is clear, however, that the new behavioural commitment scale is not simply shadowing each and every move of the Affective Commitment Scale. These findings suggest that the new commitment scale is measuring something related to, but distinct from, the Affective Commitment Scale and the respondent-defined measure of organisational commitment. This is a positive finding that supports the contention that the new scale represents a new commitment construct in its own right. The new scale, alongside the ACS, detected support-exchange interactions for people who have experienced involuntary job change and enabled a number of other findings.

**Table 8.29 Summary of survey data analysis (Propositions P2 to P5) and additional findings**

| Proposition | Interaction | Comments |
|---|---|---|
| P2 | Support/Exchange | Not supported in the population overall |
| P2a, involuntary job change | | Positive interactions supported on behavioural and affective commitment |
| P2b, low tenure | | Positive interactions supported on behavioural commitment (goals dimension only) and the R-D measure |
| P3 | Professionalism/ Exchange | Positive interactions supported on behavioural, affective and R-D commitment. |
| P3a, involuntary job change | | Not supported |
| P3b, low tenure | | Positive interactions supported on behavioural commitment (goals dimension only) |
| P4 | Professionalism_ Job Insecurity | Negative interactions supported on affective commitment for men when IVC=0 and for age>50. The same groups showed interactions on behavioural commitment: men (innovation dimension); IVC (achievement and innovation dimensions) and age>50 (goals dimension) Positive interaction found for women on affective commitment. |
| P5 | Professionalism_ Continuance | A pervasive negative interaction supported on behavioural commitment spanning goal, achievement and innovation dimensions |
| - | Commitment to Supervisor | A weak positive effect found for support-exchange and professionalism-exchange. Prior IVC associates with a negative effect. |
| - | Commitment to Work group | Positive support/exchange and professionalism/exchange effects found |
| - | Commitment to Top Management | No consistent support/exchange effects. Professionalism/exchange effect widespread. Negative Professionalism/Insecurity effects were particularly strong for age over 50. The form of the interaction differs between men and women. Negative professionalism/continuance effects noted for men, union members, prior IVC and age>50. |

1. Professionalism and continuance commitment interact to influence behavioural commitment for several sample groups but these interactions, by and large, are not present with affective or respondent-defined commitment. The negative interaction terms that were found point to an unexpected relationship in which high continuance commitment and high professionalism interact to lower behavioural commitment compared to, say, a situation in which both are moderate.

2. High professionalism and high insecurity or continuance commitment depress innovation and achievement for persons with no prior job loss, but this effect is absent when prior job loss has occurred. In this case, the negative influence occurred on commitment to goals. This indicates that prior job loss influences attitudes rather than the behavioural components of commitment.

3. Union membership negatively influences behavioural commitment but this relationship is moderated by perceived organisational support. Looked at in another way, support moderates the negative influence of union membership on commitment.

4. Negative interactions on both affective and behavioural commitment were also observed between job insecurity and professionalism for some groups (men, no involuntary job change). That is, at high professionalism, commitment to the organisation falls with increasing insecurity.

5. The experience of involuntary job change negatively influences behavioural commitment but this relationship is moderated by professionalism.

6. A negative support-exchange interactions was also found for commitment to the supervisor when people have experienced involuntary job change. Positive interactions were found for support-exchange and commitment to the organisation, suggesting that persons previously laid-off attempt to 'level the playing field' by somehow diminishing their commitment to their supervisor.

As for the findings concerning organisational commitment itself, their interpretations differ depending upon which of the three measures is used as the dependent variable. It seems clear that professionalism influences the negative effects of social exchange on organisational commitment however such commitment is defined. Perceived support also appears to affect the negative influence of social exchange although this is a less robust finding as it was largely detected with the respondent-defined measure. It is also apparent that the influence of social exchange varies across professional groups as it was not a significant correlate with behavioural commitment for CIMA members and was significant ($p<.1$) for CIPFA.

Both perceived support and professionalism appear to moderate the negative influence of social exchange on commitment to the work group and to the supervisor when measured using respondent-defined scales. Top management, as a focus of commitment, was influenced by professionalism but not by perceived support. Commitment to the supervisor was moderated by perceived support when respondents had experienced more than one involuntary job change. Behavioural commitment and top management commitment were moderated by professionalism and the influence was relatively strong when respondents were aged over 50.

The next chapter elaborates upon the results that have been presented in chapters 6 to 8 in the context of existing commitment theory and demonstrates how this study has added to our knowledge of the commitment domain.

# PART 3

# REVISITING COMMITMENT

# CHAPTER 9

# COMMITMENT IN ORGANISATIONS: EXTENDING THEORY AND UNDERSTANDING

## 9.1 INTRODUCTION

This chapter interprets the results of this study and shows how they add to and extend current thinking about commitment in organisations. The chapter revisits the research questions that guide the thesis and it begins by contrasting the content of the behavioural commitment scale with classic commitment theory and attitude-behaviour theory. The construct validity of the behavioural scale is discussed in terms of its relationship to affective commitment and commitment to local foci in organisations. The regression equations that examined the ability of professionalism and perceived organisational support to interact with negative influences upon work commitment, i.e., social exchange, job insecurity and continuance commitment, are interpreted to understand some of the influences upon the commitment of corporate professionals. The simplest way of visualising interactions is that, assuming the sign of the interaction is positive, they represent a buffer that reduces the effect of a negative influence upon an outcome. Where the interaction has a negative sign, it indicates that two variables combine to produce a negative influence upon an outcome.

## 9.2 THE BEHAVIOURAL COMMITMENT SCALE

This section addresses the research questions

- What is the nature and form of organisational commitment among organisational professionals?

- How can contemporary thinking about organisational commitment be operationalised into a new measurement scale?

Before comparisons are made to existing theory, the reader is reminded that the new behavioural commitment scale contains 12 items distributed among three subscales: commitment to goals (5 items), achievement (3 items), and innovation (4 items). None of the items is reverse-scored. Items were scored on a 7-point (for goals) or 6-point (for achievement and innovation) verbally-anchored scale such that high scores represent high commitment. While it is common for measurement scales to contain some reverse-scored items in order to reduce acquiescence responding, reverse-scoring can create some measurement problems (Schmitt and Stults, 1985; Thacker et al., 1989) and its absence from the new scale it not a cause for concern at this developmental stage.

### 9.2.1 Factor Structure

Having developed the item content for the new commitment scale from an analysis of exploratory interviews, I did not expect the new model to be unidimensional and reveal a one factor solution since the three components (goals, innovation and achievement) are too distinctive. This was confirmed by poor indices of model fit obtained when all 12 items were loaded onto one factor. Loading the seven Innovation and Achievement items onto one factor and five goals items onto a second factor also yielded poor fit and thus a two factor solution can be rejected. The good level of fit obtained for a three factor solution was in keeping with my expectations, although I admit to some surprise that the correlations between the three factors were not larger than they were (Achievement/Innovation, .39; Achievement/Goals, .29; Innovation/Goals, .27) and this leads to an issue over the interpretation of the scale that was developed.

In developing a measure of identification with the work group, Riordan and Weatherly (1999), using a similar structural model to that shown in Figure 7.1, used correlations between factors of 0.40-0.62 as evidence for discriminant validity. Using their criteria, the

three factors of the new commitment scale would be considered separate but related to each other. In a test of the discriminant validity of organisational commitment, job involvement and job satisfaction, Mathieu and Farr (1991) also drew upon correlations between the latent factors of 0.27-0.69 as evidence of the discriminant validity of each construct[1]. In an assessment of the Meyer and Allen three-component model of commitment, Ko et al. (1997) used correlations between the Affective and Normative scales of 0.73 and 0.84 as indicative of a lack of discriminant validity, that is, the Normative scale was not distinct from the Affective scale in their view. The last comparison concerns an attempt to validate a four factor model of union commitment (Thacker et al., 1989). They found correlations between the four factors of 0.53-0.76 and concluded that, in view of the size of the factor inter-correlations, combining the scores for the four factors (scales) into a composite score, 'is warranted depending on the focus of one's research' (p.231). As an aside, their measure of union commitment is interesting for its inclusion of a 'willingness to work for the union' scale which is clearly assessing behavioural intentions.

Despite the moderate correlations observed between the three factors in the new commitment scale, I decided to proceed with the creation of an additive scale. One reason for this falls back upon the simpler reliability analysis which showed, for the 12 items, good item-total correlations (see Table 7.15). Furthermore, as more complex views of phenomena are developed, such as a multi-faceted view of commitment, then sensitive techniques such as confirmatory factor analysis (CFA) may well reveal differences between component parts as being significant. Ordinarily, this is taken to show discriminant validity but the issue is one of making choices over the sizes of correlations that indicate convergent and discriminant validity and these choices should be informed

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[1]Mathieu and Farr (1989) used the short, 9-item OCQ which contains two scales for identification and involvement, the desire to stay scale having been omitted. The 9 items were collapsed into 3 items to facilitate the study and it is unclear whether organisational commitment in their study would have been seen as two or three factors had they used either the full 9-item version or the full 15-item OCQ. Thus, their claim that organisational commitment is distinct from job involvement is valid, but only so far as their 3-item measure of commitment is valid, an interpretation that collapsed a 15-item scale and, in doing so, lost any dimensionality that the data may have revealed.

by theory and the findings from other approaches to understanding the relationships between variables, such as can be provided by qualitative research. What is more, there are no absolute decision criteria for deciding when two or more constructs are distinct and when they are one and the same.

While CFA may suggest that factors in a scale are distinctive, it is only saying this in relation to the precise scales that were used in a particular study and of the data collected. Two entities may well be theoretically separate but show a high correlation between them, for example organisational commitment and job satisfaction. Other entities may be theorised as being part of the same construct but which show a lower correlation with each other, for example, goal commitment and constructive behaviours. When a single factor explains the variance of a set of items, homogeneity (unidimensionality) is achieved and summation of item scores is unproblematic[2]. Not all constructs, however, are unidimensional and this is the position advocated here for organisational commitment. Indeed, where multiple dimensions are postulated to exist, they do not necessarily correlate highly (Spector, 1992).

On one hand, aggregate scores made up from uncorrelated subscales raise the question of what is being measured. Consider, for instance, a two-dimensional scale in which the two scales are uncorrelated. An average score of the aggregate scale would not reveal whether both dimensions scored average or whether one was scored high and the other low. Where subscales are highly correlated, albeit distinct, then summing scale items seem viable. The question becomes one of determining how low correlations between scales can go before summing scales becomes inappropriate. There are no rules for decisions in this situation and where it is important to isolate the various subscales for research purposes, aggregation seems best avoided. In this research, however, the subscales are moderately correlated and

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It is important to distinguish between homogeneity and internal consistency. A homogenous scale should produce a high estimate of internal consistency reliability (alpha). However, a high alpha does not necessarily indicate a homogenous scale since alpha increases with the number of items and high values can be reached with low inter-item correlations (see Green et al., 1977).

I believe that it makes conceptual sense to sum the scale scores to give an overall score for an individual. This is based on the premise that a common factor, organisational commitment, is running through the subscales. In sum, other researchers may reject the aggregation of scale items in this case but this does not mean that commitment is not as indicated by the exploratory study. This issue should be kept in mind when following the discussion regarding the new scale and its relationship to other variables.

### 9.2.2 Comparison with the Organizational Commitment Questionnaire

Both the OCQ and the behavioural scale share a common subscale concerning commitment to organisational goals. The correspondence between the 15 OCQ items and its three subscales does not appear to have been made explicit but it is possible to categorise them based upon the wording of items (see Table 3.2). The full 15-item version contains 9 items relating to identification with the organisation, 3 relating to involvement and 3 concerning desire to stay. With the reverse-scored items omitted, the popular 9-item (shortened) version reduces to 6 identification items and 3 involvement items and thus becomes largely a measure of commitment to goals and values (Angle and Perry's 1981 value commitment).

Studies of the OCQ's factor structure have revealed either 2 or 3 factors. Tetrick and Farkas (1988) found a 2-factor solution gave the best fit to their data with the factors representing the 9 positively-worded items and the 6 negatively-worded items. They also found evidence that the OCQ 'may not be valid for individuals who have been with an organisation for a short time (p.723). Their findings were limited, however, by a sample of 19-21 year old US Navy recruits who, presumably, could not leave the service in the short-term and whose working practices cannot be considered typical of mainstream business and commerce. Furthermore, they do not appear to have tested a 3-factor solution which is surprising since none of their goodness of fit indices reached the conventional minimum of 0.9. Three-factor solutions have been reported, however (Angle and Perry, 1981; Akhtar and Tan, 1994; White et al., 1995). This factor structure raises an interesting issue regarding the interpretation of research findings from those studies that have taken

some derivative of the original 15 items for inclusion in a theoretical network. The commonly used 9-item version of the OCQ is clearly capturing affective commitment since this represents 7 of the 9 items although researchers who use the short form have overlooked the instrument's original dimensionality in doing so. Other researchers have used portions of the OCQ which cast doubt upon what they actually measured. For instance, Kalliath et al. (1998) took 6 items loading onto a single factor which may well have been the 6 negatively worded items that mostly target feelings of desire to stay. Keller (1997) reports that he took 6 items targeting affective commitment. Both of these studies reported findings about commitment in high-level journals but the extent to which they captured organisational commitment as intended by the OCQ's originators is doubtful.

The goals scales in the OCQ and the behavioural commitment questionnaire differ in an important respect: the advance on the OCQ is reflected in the attempt in the new scale to move goal congruence away from a general affect for the organisation, illustrated by the OCQ item 'For me, this is the best of all possible organizations for which to work', towards a more personalised fit of the individual and their employment, for instance, 'My specific goals fit clearly with the overall aim of the organisation'. This advance captures the importance of 'shared norms of understanding' (Townley, 1991b, p.103) acceptance of which by employees is critical if the behaviours they display at work are to link to the pursuit of competitive advantage (Fox, 1974).

Furthermore, one OCQ item, 'I am extremely glad that I chose this organisation to work for over others I was considering at the time', if taken literally, cannot be rationally answered by people with tenure above a few years. As an approximation of a general 'feel good' factor, however, it has evidently served a useful purpose. Another OCQ item, 'I would accept almost any type of job to keep working for this organisation' appears no longer to reflect mainstream attitudes towards work. A large-scale survey of British attitudes showed that the percentage of unemployed people willing to take an 'unacceptable' job fell from 24% in 1983 to 9% in 1994 and the proportion 'not very willing' rose from 63% to 86% in the same period (Spencer, 1996, p.78). Given that these respondents were unemployed, it seems likely that this attitude would be amplified and

more prevalent among employed persons. The British workforce, at least, has become more choosy about the type of work it is prepared to do and this important shift in attitudes affects the utility of this OCQ item.

Beyond assessing commitment to goals, there is little similarity between the two instruments. The OCQ's involvement scale assesses behavioural intention, for example, 'I am willing to put in a great deal of effort....', rather than a behaviour itself which might be expressed as, 'I put in a great deal of effort..', although the OCQ item, 'This organization inspires the very best in me in the way of job performance', calls for respondents to assess and report their own performance. The involvement scale in the OCQ has been replaced in the new scale with two subscales that assess a person's effort and aspects of performance in two areas, achievement and innovation. The achievement scale measures self-perceptions of the effort directed at achieving work objectives. The innovation scale measures self-perceptions of the extent to which a person develops a job role by looking for new ways of working. The equivalence of commitment and involvement is present in Hedges' (1994) review of British work attitudes which demonstrated that professional groups relate differently to their work compared with manual workers and junior non-manual workers. In particular, professional employees are far more prepared to put their working lives ahead of other considerations and Hedges described those who do as being in the 'most committed' category. (See also Mann, 1986).

There are no items in the new scale concerning desire to stay. This aspect of the OCQ and the ACS did not show-up during the exploratory interview study as components of commitment, and research on British workers (Spencer, 1996, p.82) confirms that the workforce has become far more mobile (less 'inert') largely for reasons of proactive job search rather than redundancy. The literature suggests that in a job market which is difficult to predict, the idea of desire to stay has reduced utility in an operationalisation of commitment. An additional observation on the relevance of the OCQ's items relates to the oft presumed desire to stay component. The actual item wording, e.g. 'I could just as well be working for a different organisation as long as the type of work were similar', does not suggest a strong desire to stay element. It is suggested here that this group of items is better

seen as tapping into a 'I could just as well be elsewhere' attitude which in contemporary organisations does not connect strongly to high or low commitment.

### 9.2.3 Comparison with Other Measures of Organisational Commitment

Buchanan's (1974) commitment scale contained 3 subscales assessing identification (6 items), job involvement (6 items) and loyalty (11 items) (Cook et al., 1981, pp.88-89). The identification scale is similar to that in the OCQ although the item, 'This organization has a fine tradition of public service', would need modification before its use outside public organisations, and, the item, 'If I had my life over again, I would still choose to work for this organization', once again is suggestive of an era when a career with one or two paternalistic organisations was commonplace. Buchanan's loyalty scale appears to show strong overlap with identification, for example, 'Over the years, I have grown fond of this organization as a place to live and work', and includes some items tapping into desire to stay. The most intriguing scale is that which concerns job involvement since this is indicative that Buchanan also conceptualised commitment as combining favourable attitudes towards an organisation with actual performance. Nevertheless, his items have been overtaken by time and by developments in personnel practice, for example, 'I don't mind spending a half-hour past quitting time if I can finish a task'. This item is anchored in a work environment where formal start and finish times were the norm, even for salaried professionals. Also, 'I do what my job description requires...' assumes that an overt prescription of a job role exists and this item wording is reminiscent of scientific and rational approaches to job design which have been overtaken by attempts to instill flexible and participative ways of working (e.g. Hales, 1993 pp.111-146; Mueller, 1992). The reverse-scored item, 'Most things in life are more important than my work', clearly relates high commitment to a view that work is the most important activity in life. While work remains economically important for individuals, social attitudes have changed to emphasise the value of other life interests. In sum, Buchanan's scale appears better suited to clerical and administrative employees as it does not embody contemporary expectations of professional employees.

The British Organizational Commitment Scale (BOCS) also represents commitment as 3 subscales (Table 3.5) designed for completion by 'blue collar respondents of modest educational attainment', (Cook et al., 1981, p.91). They similarly use identification (3 items) and loyalty (3 items) in which loyalty solely assesses desire to stay. Their involvement scale assesses the extent of a person's work effort directed at benefitting the organisation but is general in nature, for example, 'To know that my own work had made a contribution to the good of the organisation would please me'. Using data from British railway employees, Peccei and Guest (1993) found that a 3-factor orthogonal solution gave the best fit to the data although the level of fit achieved was capable of improvement by the standards of confirmatory factor analysis. Correlations among factors were high, 0.58, 0.76 and 0.80. Very good fit was obtained by using a 6-item, 3-factor model but this may have been a statistical effect rather than a true improvement. (In all their tests, a unidimensional structure gave poor fit).

Four other conceptualisations of commitment need mentioning. The new scale is consistent with Scholl (1981) who saw commitment as having a behavioural component and with the scale developed by DeCottiis and Summers (1987) who viewed organisational commitment as partly a role contribution to organisational values (see section 3.5.2). The Hrebiniak and Alutto (1972) 4-item measure conceptualises commitment as being a calculative (continuance) commitment assessing willingness to change organisations for moderate personal gain has no similarity with the new scale. It is interesting nevertheless in that it assesses an outcome state, that is, wanting to leave or not, rather than the reasons for wanting to stay or leave. Finally, the Meyer and Allen 3-component model of commitment has already been discussed in section 3.10 and, apart from the Affective Commitment Scale which measures commitment to goals, the Continuance and Normative scales are better seen as assessing the reasons for commitment and not commitment itself.

In sum, the factor structure of the new scale is like that of the OCQ and the BOCS although the correlations among the 3 factors are lower. This is indicative that additional development of item wording is required to raise the level of intercorrelation.

### 9.2.4 Job Involvement, Achievement and Innovation

One class of scales bearing similarities to the new commitment scale concerns the area of job involvement and job motivation (Cook et al., 1981, pp.113-131; Lodahl and Kejner, 1965; Mathieu and Farr, 1989). Job involvement scales attempt to assess a person's orientation to a particular job rather than to work in general. The Lodahl and Kejner scale contains items that compare to the Achievement component of the new scale, for example, 'I avoid taking on extra duties and responsibilities in my work' (reverse-scored), and 'I'll stay overtime to finish a job even if I'm not paid for it'. However, what is more important is the connection between a behaviourally-oriented job involvement scale and a behaviourally-oriented commitment scale. The exploratory interviews undertaken as part of this study left no doubt that commitment of organisational professionals was primarily a behavioural entity which coincides with favourable attitudes towards the organisation. The commitment literature has been tolerant of two contrasting approaches; the first of these being the mixing of attitudes with behavioural intentions in a single measure (as found in the OCQ), and the second being those who criticise the OCQ for combining more than one concept into a single measure (Ko et al., 1997, p.970) and who would split commitment into its component parts as they see it (e.g. Meyer and Allen, 1997). A general assumption of commitment research has been that behaviours are not part of commitment itself and that commitment, or a lack of it, leads to behaviours. This thesis does not lend support to this view and sees commitment as a behavioural entity that co-exists with positive goal congruence between the individual and the organisation. This is a major shift forward in commitment thinking and yet there is one paper from the early days of commitment research (Wiener and Gechman, 1977) that took the same view. Their view is so similar to that emerging from this study that a lengthy extract from their paper is given below While above the normal length of extracts, it is included here because of its appositeness.

Commitment is best viewed as a behaviour rather than as merely an internal process or construct. When individuals are committed to a cause, person, activity, or institution, they must express this by an overt, public act. A relationship process without an overt behavioral component cannot be considered commitment. It may reflect some internal process such as liking, believing, or identifying, but these do not necessarily have a one-to-one relationship to behaviour. What types of job behaviours can be classified as commitment or involvement? Conceptually, commitment behaviours are socially accepted behaviours that exceed formal and/or normative expectations relevant to the object of commitment (Wiener and Gechman, 1977, p.48)[3].

Wiener and Gechman developed a purely behavioural measure of commitment based upon the self-completed diaries of teachers who recorded their work effort during a week. Their behavioural measure correlated with Lodahl and Kejner's job involvement scale (r=0.37, n=54) but they did not relate it to any of the more traditional measures of commitment. What is most revealing is their treatment of job involvement and commitment as being synonymous which is akin to the finding here of commitment associating with the display of positive job behaviours. The difficulty of using their measurement method on a large scale explains why the technique has not found wider influence in commitment research and a simpler method of operationalisation is called for.

Regarding the Innovation subscale, the literature on innovation recognises at least two influences on individual-level creativity, the personal characteristics of the individual and the social environment in which the individual works (Amabile and Gryskiewcy, 1989). It is important to stress here that the items in the new scale differ from scales that focus upon measuring the employee's perceptions of the organisational climate for innovation (Amabile and Gryskiewcy, 1989; Ekvall, 1997; Jones, 1993) as distinct from an employee's attitudes and efforts towards innovation. For instance, Jones (1993, p.257) in

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[3]Despite the extensive literature search undertaken for chapter 3, the paper by Wiener and Gechman was found and obtained after the qualitative and quantitative surveys in this thesis were undertaken and when literature on behavioural interpretations of commitment were being located. It therefore had no influence upon the structure and content of the new commitment scale developed in this study.

a study of R&D scientists used, among others, 'Does your department encourage the development of new ideas', and, 'Are you encouraged to search for fresh, new ways of looking at problems?' to assess innovatory climate. In the new commitment scale, the emphasis has been to avoid the assessment of perceptions of innovatory climate in favour of respondents' views of their own innovatory activities, for example, 'I like to experiment with different systems and practices to improve things at work', and, 'I challenge the way things are done'. It is possible now to update Figure 3.1 which posited the existence of a commitment 'black box' and to sketch in some details of what that box contains. This is presented in Figure 9.1 and the remainder of this chapter addresses the issues arising from the portrayal of commitment developed above and which is shown in the Figure.

### 9.2.5 The Combination of Attitudes and Behaviours

The new organisational commitment scale is offered here as an advance upon previous conceptualisations through the combination of self-reported attitudes and behaviours. The first issue arising from this involves a response to studies which have shown low or non-significant correlations between them leading to the view that attitudes do not predict behaviours. This memorable but oversimplified claim was popularised by Wicker (1969), and while low correlations can occur, they can be explained in terms of research design characteristics that provide a narrow, sometimes unitary set of behavioural choices (Eagly and Chaiken, 1992, p.159). The following characteristics of attitude-behaviour research associate with moderate to strong correlations (Eagly and Chaiken, 1992, pp.163-165; Foxall, 1997).

1. The use of surveys, rather than laboratory studies, in which people have considerable freedom of choice over the behaviours that they report or display.

2. When a general attitude is related to a composite measure of attitude-relevant behaviours rather than to a single behaviour.

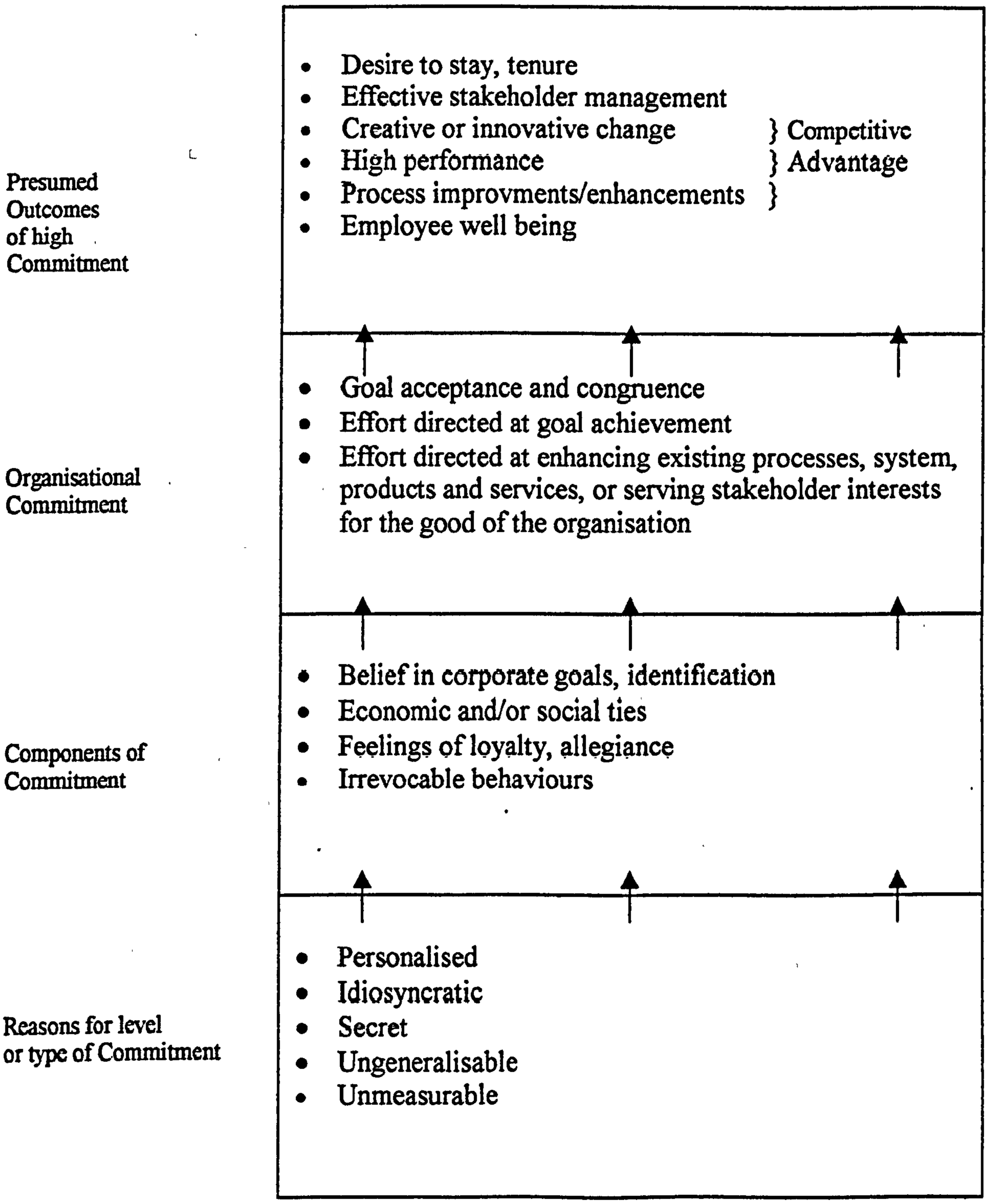


Fig 9.1 The Process of Organisational Commitment among Organisational Professionals.

3. When the measurement of attitudes and behaviours are towards the same target and relate to the same action to be performed.

4. When there are no major barriers to the behaviour being performed, that is, behaviours fall within the individual's own volition.

5. Where the time lag between the formation of attitudes and the expression of behaviour is relatively small. The longer the lag, the greater the likelihood of the behaviour not occurring.

The oversimplification which so much troubled attitude researchers has been shown to apply in a limited range of situations and has been refuted (Foxhall, 1997). It is entirely reasonable, therefore, to link attitudes and behaviours together in one concept and the next area for discussion is the question of how attitudes and behaviours are related to each other. The Theory of Reasoned Action (TORA) (Ajzen and Fishbein, 1980) maintains that a person's intention to perform a behaviour is the immediate determinant of the action. Intention to perform (behavioural intention) is, in turn, a combination of a person's favourable or unfavourable assessment of the behaviour (their attitude towards performing the behaviour) and perceived social pressure to perform the behaviour (the subjective norm). Attitude to the behaviour is influenced by beliefs about the outcomes of performing the behaviour and the subjective norm is influenced by beliefs about the reference group from which social pressure derives.

The Theory of Planned Behaviour (TOPB) (Ajzen, 1985, 1991; Trafimow and Duran, 1998) was developed from the TORA and included, as a third determinant of behavioural intent, the respondent's perception of how easy it is to perform the behaviour (this determinant was called perceived control). Both theories have utility where behaviours are within the choice of the individual rather than where behaviour is forced by convention or practical necessity. Thus, work-related behaviours, such as giving effort and seeking innovation, are largely within the remit of an individual, even if other factors could

intervene to mitigate against those efforts paying-off. If the TOPB is accepted as explaining the attitude-behaviour relationships, the new commitment scale could be criticised since, if attitudes, intentions and behaviour are separate parts of a linear sequence, then it could be argued that they should be measured separately and independently. This has been a source of criticism for the OCQ in which attitudes (e.g. 'I really care about the fate of this organization') and behavioural intent (e.g. 'I would accept almost any type of job to keep working for this organisation') and behaviour (e.g. 'I talk up this organization to my friends as a great organization to work for') exist side-by-side (Angle and Perry, 1981; Tetrick and Farkas, 1988).

The TORA and the TOPB provide useful comparators with which to interpret the new scale but should not be seen as the only benchmark. Other relationships between attitudes and behaviours have been put forward and, in particular, in one test of the TORA, the theory did not explain extra variance in commitment (measured with the OCQ) over and above that explained by commitment to local foci (Becker, Randall and Riegel, 1995). More complex models of attitude-behaviour interplay have been developed in which behaviour is a result of two-way, reciprocal paths between them and of interactions among variables in the causal order (Liska, 1984) and where behaviours influence attitudes and attitudes influence behaviour (Bentler and Speckart, 1981). There is accumulating evidence that, 'leading theories of goal-directed behaviour are incomplete' (Bagozzi and Kimmel, 1995, p.459) and there appears to be a clear influence deriving from past behaviours, in particular, the frequency with which behaviours are exercised and how recently the behaviour was last displayed. One interpretation of this is that the conduct of past behaviours provides information that influences any future decisions to act in the same or similar fashion (p.439).

In sum, the precise causal ordering among beliefs, attitudes, past behaviours and behaviours is not yet understood but is thought to be influenced by situational variables and the nature of the behaviours. The implication of this for the new commitment scale is that, for the practical purpose of measuring commitment, there is no over-riding reason why attitudes and behaviours should not be viewed as co-existing, indeed, in view of the

more recent theoretical developments, above, it is a more accurate representation of reality. Of course, if a concept is defined purely as an attitude, for example, job satisfaction, then it should be measured solely as an attitude. But, if a definition embraces both attitudes and behaviours, as is the case proposed here for commitment, then it is reasonable to operationalise commitment in this way. There are issues, however, about the use of a self-report approach to measuring behaviours.

### 9.2.6 The Case for Self-Report Measurement

If it is accepted that commitment should be operationalised as a mixture of attitudes and behaviours, then it is necessary to comment upon the appropriateness of a self-report scale. In contrast to self-reports, many objective behavioural measures such as days absent, timekeeping, or output in terms of sales or production volume, could be linked to commitment. It is suggested here, however, that these, and others like them, would be inappropriate to employ because they are part of the expectation upon each and every employee, committed or otherwise. While it is important to understand the link between commitment and aspects of work such as these, they were not identified as aspects of commitment in the exploratory interviews and should not be seen as characteristic indicators of the highly committed employee. There are also measurement problems generated by the inadvisability of linking a general attitude to a specific behaviour (Eagly and Chaiken, 1992) and the preference for conflation of a general attitude with a composite behavioural index towards the same object has been noted above. The self-report allows for a composite of behaviours directed at the benefit of the organisation to be contextualised for a given occupational group and also embodies another finding from attitude-behaviour research, that the behaviours should be within the control and volition of the respondent. The primary objection to this approach is likely to concern its subjectivity, as opposed to objectivity, and ideally, the behavioural constituents of commitment would be rated by both independent and self-report methods in order to build a more rounded perspective.

Attitudes are properly measured with self-reports whereas behaviours can be measured in other ways, for example, an independent subjective rating of teacher performance, or an independent objective rating of performance using quantitative measures. Yet, self-reports of attitudes, behaviours and behavioural intentions are used in theory-testing research, (see Bagozzi and Kimmel, 1995; Bentler and Speckart, 1979, 1981; Elliott, Jobber and Sharp, 1995; Randall and Wolff, 1994). Self-report measures have attracted criticism on the grounds, among others, that the data obtained by them are vulnerable to influence from respondent traits such as social desirability and negative affectivity and that common method variance can inflate correlations between variables over and above the true correlation (e.g. see Spector, 1994). These, and other, criticisms have become so well-known because self-report questionnaires, as a data collection method, are easily understood in comparison to other ways of gathering data. Because other ways are generally less well understood, it is suggested here that criticism concerning their use has been less vocal. All research methods have features that lead to error creation which become threats to validity and Howard (1994) draws upon the natural human tendency to see things as semantic opposites, for example, hard and soft data, as a means of explaining why self-reports attract disproportionate criticism. Because their research limitations are easily comprehended, fundamentally different data collection methods are seen as less objectionable because people simplify comparisons by treating alternative methods as opposites. Certain methods, Howard (1994, p.402) claims, are over-valued simply because others are devalued. More important than the question of whether self-reports are meaningful *per se*, are questions touching whether the research topic is preliminary/exploratory or advanced, whether any personal traits or motivations would adversely influence the data obtained, and, whether method effects will influence the interpretation of data (Schmitt, 1994).

On the matter of the stage of the research topic, despite the volume of commitment research to-date, it would be misleading to consider the area to be well understood. What is more pertinent perhaps, is the point that research into the basic question, 'what is commitment?', in the new employee relations is at an exploratory stage and the use of self-reports is justified for this reason in order to develop an understanding of the domain. In

time, as understanding in this field increases, then inclusion of other data collection methods will be called for.

The matter of respondent traits that may influence self-reported data is harder to resolve. It is a characteristic of commitment research that, by its nature, commitment scales contain items that could attract socially desirable responses. The pilot studies for this thesis could have administered both the new scale and a social desirability scale (e.g. Crowne and Marlowe, 1960) in order to identify items that correlate highly with socially desirable responding and which would be eliminated from further development. Lastly, how might method variance have affected the interpretation of data and findings in this study? Section 5.8.3 reviewed studies into the effects of method variance in research of this kind and concluded that, overall, the effects are not as great as are often presumed. Even so, it is a limitation of this study that method effects cannot be more explicitly revealed and the key issue is not whether method variance influences correlations, which it often does, but whether the choice of method leads to bias in the results obtained (Doty and Glick, 1998). Their meta-analysis of organisational research shows that the level of bias introduced by common method variance was not sufficient to challenge the theoretical interpretations of relationships among variables 'in most cases' (p.399). As it is often sufficient in research to identify the broad relationships that exist between variables, the influence of method bias upon exact correlations becomes less of a concern. This is not to negate the influence of method bias, but where multiple methods to examine the same construct cannot be, or were not, employed, then Doty and Glick's findings are encouraging. Additional, and recent, support is provided by Spector, Fox and Vankatwyck (1999) who found that negative affectivity failed to correlate with incumbent reports of job conditions.

## 9.3 CONTEXTUALISING BEHAVIOURAL COMMITMENT

Twenty-five years since its current popular incarnation (Porter et al., 1974), organisational commitment continues to be of major interest in organisational research both as an independent and dependent variable. It is surprising that in the face of fresh developments

in both organisational practice and theory, such as the content of the psychological contract and the changing nature of careers, that the nature and form of commitment have not already been substantially recast. Since Porter et al. (1974), the most significant development has been the recognition that organisations are heterogeneous as opposed to homogeneous entities and, as such, employees can be differentially committed to coalitions and groups within them (Becker, 1992; Becker and Billings, 1993; Coopey and Hartley, 1991; Reichers 1985, 1986). While measures of commitment have continued to be developed, notably Meyer and Allen's (1984) attempt to distinguish between affective, normative and continuance commitment and Cook and Wall's (1980) attempt to provide a more 'balanced' attitudinal measure than the influential OCQ, these revisions should be seen as incremental 'adjustments' to the way commitment is measured in terms of item wording and scale symmetry. In contrast, this study has advanced and accelerated the process of re-evaluation and recasting by examining commitment as it exists among professional groups in the current climate for human resource management. In particular, the study has shown that commitment can be reconceptualised in a markedly different manner to its classic form (see Meyer and Allen, 1997, pp.116-123; Mowday et al., 1982, pp.219-229) and has moved the debate about the nature of organisational commitment forward.

In the widest of contexts, the new scale sits with the literature concerning organisational searches for superior performance that are rooted in the management of individual creativity rather than the manipulation of physical assets (see Handy, 1989; Peters, 1988; Porter, 1985; Schuler and Jackson, 1987). The findings also fit in the broad context with the literature on intrapreneurship, that is, the demonstration of innovative behaviours, such as generating innovative options and challenging how things are done, by employees in the confines of large organisations (see Pinchot, 1985).

A view of commitment as involving, rather than leading to, behaviours can be traced in the literature on human resource management. Guest (1991, p.42) considers that high commitment is concerned with behavioural commitment towards agreed goals. Storey and Sisson (1991, p.168) regard commitment as 'the exercise of discretion within tight

boundaries' and the use of the term 'exercise' implies actions and effort and not solely a linkage to an organisation for attitudinal or economic reasons. In relation to the literature specifically on organisational commitment, the new commitment questionnaire developed and tested above shares conceptual ground with a 'commitment behaviour scale' published by Benkhoff[4] (1997) and which, like this study, embodied the notions of 'taking the initiative for suggesting improvement' and 'acceptance of organisational policies' (p.706). There are also similarities with a study by Randall et al. (1990) who reported the behaviours of committed employees (mostly male in production or clerical roles in one US manufacturing site). Among the behaviours they identified were a concern for quality and the sharing of knowledge with co-workers. Thus, the literature on organisations has been receptive to seeing commitment as behavioural as well as attitudinal but has, for the most part, stopped short of grasping the idea that commitment should embrace behaviours as part of the construct, preferring instead to see behaviours as outcomes of commitment. This is particularly true of the literature that relies heavily on quantitative methods to explore the antecedents and outcomes of commitment.

The picture of commitment developed is consistent with a qualitative study of the careers of accountants (Grey, 1994) which showed how managers looked towards trainees to 'display enthusiasm and commitment at all times regardless of the chores assigned to them' (p.486) and,

> Whose commitment is such that enthusiasm for becoming an auditor suffuses even the most mundane of tasks and invests it with a transcending purpose (p.488).

The portrayal of behavioural commitment developed in this thesis has far more in common with Grey's picture than with simpler goal-oriented definitions. In using the word 'display', Grey implicitly suggests that the accountants' commitment is visible and measurable and

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[4] I emphasise here that Birgit Benkhoff's paper was published in *Human Relations* in late 1997 and after the scale tested in this study had been independently designed and piloted. While her approach is interesting, the 'commitment behaviour scale' yielded low reliability and no evidence for its validity was reported.

that its assessment was an important determinant of career prospects. Coffey (1994), also in an ethnographic study of accountants, identified the tangible nature of commitment noting specifically that the requirement put upon accountants to work outside office hours 'relates more closely to a view that sacrificing personal time is a symbol of commitment to the organisation (p.948). The organisation used the amount of personal time expended on finishing jobs as a way of measuring commitment. Accepting the behavioural definition of commitment raises a question over the basis on which such commitment is given. The outward portrayal of behavioural commitment could be an illusion brought about by professionals who feel they need to conform to organisational norms, for example, those used for organisational socialisation tactics. The inclusion of the goal congruence items, however, attempts to discriminate between employees who may appear committed, as opposed to actually being committed.

In keeping with the Organizational Commitment Questionnaire (Porter et al., 1974), the scale developed here contains three components. It retains the employee's belief in organisational goals but offers items that assess the congruency between the employee's personal goals and those of the organisation, rather than assess a general affective state. The new definition goes further by replacing the items dealing with intent to stay and willingness to exert effort with items that focus upon specific outcomes of benefit to the organisation. These improve upon the OCQ which incorporates a general willingness to give effort and a desire to remain with the organisation. The new commitment scale thus embodies the notion that individuals need to display the characteristics of enterprise and innovation and is consistent with themes present in the literature of career revisionists in the 1980s and 1990s (Adamson et al., 1998; Arnold, 1997 p.33; Dopson and Neumann, 1998; Fournier, 1998 p.56). This new 'career discourse' (Fournier, 1998) embodies the notion of careers being 'discontinuous', that is, involving moves between employers, the experience of different types of work rather than continuity in one occupation, and lateral rather than hierarchical moves.

In the context of the new employee relations, the new commitment scale offers improved content validity compared to the largely attitudinal OCQ. It also differs markedly from the

operationalisations of commitment proposed by Meyer and Allen (1997, pp.118-119) since, in comparison with the new scale, Meyer and Allen's three scales can also be criticised for not capturing the new 'career discourse'. The items in the ACS assess the congruency between personal and organisational values up to a point, but they remain a measure of general attitude towards an organisation. The Normative Commitment Scale has generally not found favour with researchers who question its reliability and its distinctiveness (see Ko et al., 1997) and, together with the Continuance Commitment Scale, Meyer and Allen's three scales are better seen as measuring a person's reasons for being committed rather than the expression of commitment itself. The new scale is therefore a major advance in commitment theory which has previously been at pains to separate outcomes such as high performance and innovation from their supposed causal attitudes.

The new career discourse which holds that enterprising behaviours are needed at the level of the individual cannot co-exist with definitions of commitment that allow for people to be seen as committed if they do not display such enterprising outcomes. It is hard to imagine an organisation regarding as committed a professional employee who does not perform in an enterprising manner. Such an employee could be viewed as loyal, however. The new scale also relates to the literature on organisational citizenship behaviours (Organ, 1988; Organ and Konovsky, 1989) which deals with the notion that contributions by employees over and above their formal job role obligations are immensely valuable to organisations. Smith et al., (1983) developed a scale to measure citizenship behaviours and incorporated within it the concepts of making innovative suggestions to improve the department, which connects to the Innovation subscale in the new commitment measure, and above average attendance at work, which connects to the Achievement subscale[5].

The new scale addresses two concerns expressed by Reichers (1985). First, it is built upon the views and portrayals of commitment as expressed by professionals. This is an

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[5] The 16-item Organisational Citizenship Behaviour scale contains a majority of items that do not compare with the new commitment scale and, on the basis of their face validity, would need some revision before being administrable to professional groups.

important point as all previous development and fine-tuning of commitment scales seems to have been predicated upon literature reviews and adaptations of measures and the new scale should better reflect organisational life. Second, the scale does not rely so heavily upon the classical assumption, as the OCQ and ACS do, that there is some monolithic organisation 'out there' to which people commit themselves to some degree or other. This classical view, in essence, sees commitment as the extent to which an individual's sense of identity aligns with the values of a particular corporate culture. Shared values alone as a route to organisational success should be challenged (Hopfl et al., 1994, p.374) on the grounds that, in the face of corporate efforts to achieve cultural change as a means of raising organisational performance, at a point in time the culture of an organisation may not be a culture that senior management wishes employees to commit to too strongly. Hence, commitment to negotiated personal goals appears to be a more useful component of commitment than a global commitment to goals and values that, possibly, are a contributing factor to an organisation's strategic drift.

The new scale is a better measure of the extent to which individuals commit themselves to achieving positive outcomes for the various constituent groups within the organisation. It represents a new form of organisational commitment - not a general favourable attitude to an organisation's values and goals but the confluence of personal and organisational goals coinciding with positive behaviours directed at solving organisational objectives as cascaded to the level of the individual. This interpretation accommodates the ability to pursue short-term engagements with and for organisations and does not rely upon a temporal component concerning a desire to stay. It fits well with the new psychological contract summarised in Table 4.2 and, in addition to proposing a fresh picture of organisational commitment that overcomes some known limitations of existing measures (see Reichers, 1985), this study has also shown that a new commitment scale can be constructed that withstands psychometric evaluation.

The operationalisation of commitment created in this thesis is partly behavioural in nature and an important question remains over whether commitment should be viewed as a situational or dispositional entity. In the organisational psychology literature, the

'interactionist' view maintains that behaviour is determined by internal and external factors and that the person, the working environment and behaviours interact dynamically to influence one another (see Arvey, Carter and Buerkley, 1991; Schneider, 1983). The innovation subscale of the new commitment questionnaire is tapping into the individual's restlessness with a status quo and this can be interpreted as a desire to influence and control their environment (Bandura, 1986). Bell and Staw (1990) considered that employees influence their fates with organisations through their dispositional characteristics and, likewise, Hirschman (1970) believed that employees react to their working environments either by retreating from them or actively attempting to change them. This aspect of the new measure can therefore be seen as dispositional yet the acceptance of an interactionist view suggests that, at a point in time, commitment is influenced by both dispositional and situational factors.

Having illustrated and discussed the internal structure of the new model of commitment, the discussion now turns to consider the third objective which was to examine how commitment is influenced by key organisational and personal variables. This objective was split into three questions, the first of which was,

- what is the extent of the reciprocal nature of organisational commitment among organisational professionals?

## 9.4 SOCIAL EXCHANGE AND PERCEIVED ORGANISATIONAL SUPPORT

### 9.4.1 Dealing with Type I and Type II Errors

Prior to a discussion of the relationships between the new model of commitment and other variables, it is necessary to deal with a methodological issue that touches upon the interpretation and acceptance of the results of tests for moderator variables, namely the treatment of Type I and Type II errors (Grimm, 1993, p.151). A Type I error is committed when a true null hypothesis is rejected. This occurs when there is no interaction effect in

the population but it is erroneously assumed that there is, and a Type II error is committed when a false null hypothesis is accepted. That is, when there is an interaction effect but it is rejected[6]. A detailed interpretation of Type I and Type II errors as they relate to this study is provided in Appendix L, and suffice to say here, the reader can have confidence in the validity of the F values given previously in Tables 8.5 to 8.11 and 8.21 to 8.24.

### 9.4.2 Size and Form of Interaction Effects

Social exchange had a predicted negative influence on various foci of commitment as seen through negative regression coefficients in the stepwise regression analyses. In the studies of continuous variables reported in chapter 8, the sign of the interaction term including exchange was always positive, indicating that the interaction had the effect of raising commitment. Such effects can be illustrated by calculating the regression equation at high and low levels of the moderating variable.

For instance, a highly significant interaction was found for perceived support and social exchange when regressed on behavioural commitment (SMNEWOCS) when tenure was less than two years. The regression equation, with centred variables, was

SMNEWOCS = 52.2 + .532CENPOS - .245CENTEI + .226XCNPSEI

The strength of the interaction is indicated by the difference in squared multiple correlations (delta $R^2$) between the 'main' effects model (without the interaction term, XCENPSEI) and the interaction model (including the interaction term). The main effects model gave $R^2$ =.4306 and with the interaction term added gave $\hat{R}^2$ =.479, hence delta $R^2$=.0487 The interaction term explains and additional 4.87% of the variance in SMNEWOCS in this example. While 4.8% is small in absolute terms, it is among the

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[6]Note that Type I and Type II errors arise in all studies of statistical inference and are not solely a feature of this research.

largest single increases found in this study. Adding the interaction term commonly explains only a small increase in the percentage of variance, unless there is a very strong interaction present because the main effects have already been partialled out. The additional variance explained is usually below 5% (Koeske and Koeske, 1991) and the results obtained here are consistent with the effect sizes noted in other studies of moderator effects reviewed for this research (Gunz and Gunz, 1994; Leong et al., 1996; Liden, Wayne and Bradway, 1997; Lim 1996; Meyer, Irving and Allen, 1998; Pearson and Chong, 1997; Podsakoff, MacKenzie and Ahearne, 1997; Sinclair and Tetrick, 1995; Schmeider and Smith, 1996; Witt, 1991).

Substituting values for low, average and high support in the equation above, the following equations arise

| | |
|---|---|
| low POS: | SMNEWOCS = 46.3 - 2.75CENTEI |
| average POS: | SMNEWOCS = 52.2 - .245CENTEI |
| high POS: | SMNEWOCS = 58.1 + 2.25CENTEI |

At low perceived support, the regression slope of social exchange on commitment is -2.75, at average support it is -.245 and at high support it is +2.25 showing that the relationship between organisational commitment and social exchange changes with the value of perceived support. This appears to be an alternative measure of the strength of the interaction effect to the change in $R^2$. In this example, the regression line moves from being steep and negative at low social exchange to being steep and positive at high social exchange. At low perceived support, social exchange had a strong negative effect on commitment whereas at high perceived support, social exchange no longer seems to exert a negative effect. Note also that the value of the constant in the regression equation (albeit an arbitrary number in this use of regression) increased as perceived support increased. Looked at in another way, when support is held constant and values for low, average and high exchange are entered into the equation, it can be shown that at high exchange, support has a greater influence on commitment than at low exchange.

### 9.4.3 Exchange, Support and Organisational Commitment

The overall relationship between exchange and affective and behavioural commitment in the aggregate sample was weak with significant β values for social exchange typically around -.10. Betas for perceived support were consistently strong and positive and the finding that perceived support is a predictor of behavioural commitment is broadly consistent with King's (1990) review of the antecedents of individual level innovation even though he does not mention perceived support explicitly. However, perceived support can be construed as a far-reaching variable that embraces other variables thought to influence innovation, for example, freedom for decision making and recognition from the organisation (p.51). There is a more direct mention in Farr and Ford (1990, p.70) as a factor influencing individual belief in one's ability to produce creative work outcomes.

Another important finding from this study is that British accountants and pharmaceutical chemists differ in their conformance with the norm of reciprocity at work (Gouldner, 1960a). For managerial professionals, the zero-order correlation between social exchange and behavioural commitment was -.02 (n.s.) for CIMA and -.13 (p=.08) for CIPFA. For technical professionals, the correlation increased to -.18 (p=.002). This pattern of correlations explains why no support-exchange interactions on organisational commitment were observed for CIMA members since there was no negative influence present to be moderated. A social exchange explanation of commitment would maintain that perceptions of fairness and support from the organisation have an important influence upon the giving of commitment and related constructs such as citizenship behaviours (Eisenberger et al., 1987, 1990, 1997; Organ, 1988; Shore and Wayne, 1993). In a general social exchange model, so long as individuals continually sense organisational support, then they will not be concerned about receiving economic rewards from the organisation in return for particular committing outcomes. If individuals, have a high social exchange outlook then they will see the relationship in terms of more tightly defined exchanges and may use the tangible derivatives that arise from the organisation's support to them as a 'payment' that justifies the expression of high commitment. Thus, for high social exchange individuals, the perceived withdrawal of support by the organisation would lead to a diminution of

commitment, whereas for low exchange individuals the impact of a reduction in perceived support will be much less.

Exchange theory shares ground with equity theory (Adams, 1965; Festinger, 1957) and has recently resurfaced as a theoretical basis for research in the general field of organisational justice (O'Neill and Mone, 1998). Exchange theory also appears to have high power to explain the new career discourse noted above if it is accepted that, under the 'new' psychological contract, the responsibility for a career lies firmly with the employee (Adamson et al., 1998, pp.251-252). Eisenberger et al. (1987) considered that individuals have a creditor or debtor ideology depending upon their predisposition towards giving and taking to and from social exchange situations. Likewise, O'Neill and Mone (1998, p.806) class those who prefer to donate to situations as 'givers' and those who prefer to receive more than they donate as the 'entitled'.

It follows that employees who have high social exchange cognitions (the debtors and the entitled) will give their commitment more freely if and when they perceive support issuing to them from the organisation. In the absence of perceived support, then theory would predict that their commitment will be restrained. This prediction was tested (Proposition P2) and was not upheld for the full sample of professional employees. It does appear to hold, however, when tenure is low (defined here as less than two years) and this result is consistent with Arnold et al. (1991, p.276) who note the importance of providing support to new starters in order to instill a sense of belonging and competence. The exchange-commitment correlation magnified in the subgroup with less than 2 years tenure: exchange correlated -.26 (p=.017) with affective commitment, -.31 (p=.004) with behavioural commitment and -.24 (p=.031) with respondent-defined commitment. If it is assumed that a person's social exchange ideology is a relatively stable construct which is more dispositional than situational (Sinclair and Tetrick, 1995), then an explanation lies in a consideration of perceived support. Employees with long tenure will have a fuller knowledge of the organisation's practices and may interpret actions and statements from the organisation through their 'experience filter'. Employees with low tenure will not have this same experience of the same organisation and this would explain a more instrumental,

reciprocal view of commitment in which new appointees with high social exchange disposition seek explicit demonstrations of support before commitment is returned.

The explanation for the interaction relies upon the assumption that new employees would seek to make an impression upon the organisation and those who come with high social exchange would set-aside its influence while they worked to make an impact in the first year or two of a new job. This appears to be the case and the implication for employers is that they should not neglect the management of activities that would be interpreted as indicating support in the early phase of a new employment contract. An explanation for this finding is that, when employees have little or no experience of an organisation, they interpret the organisation's words and actions at 'face value'. When employees have an accumulated experience with which to filter words and actions, messages that would have a negative influence to a recent starter are seen in a different light by experienced employees. Longer tenure employees would be able to call upon their experience, and will be in-tune with the unique vocabulary used by the organisation's management, and be able to reinterpret the face value meaning of words and actions by the organisation. They would also have a network of contacts within the organisation, possibly connecting to top management, and could use this to clarify particular messages and even overcome or by-pass events that would, at face value, be construed as showing low support from the organisation. An additional factor would operate if people with short tenure feel that they can readily move again to another employer if their expectations are not met. This is supported by the finding that tenure correlated .23 (p=.000) with continuance commitment. (The average level of continuance commitment for those with less than two years tenure was significantly less than that for those with more than 2 years, t=2.76, p=.006). The average age of people with less than 2 years tenure was 36.8 years (median, 35 years) and so they were not, by and large, recent graduates and they will have had around 10 years work experience before starting their current post.

The results also show that perceived support moderates the relationship between social exchange and affective and behavioural commitment when employees have experienced

involuntary job change.[7] Losing one's job is clearly an experience that the professional would want to avoid and, where it has occurred, it appears to sensitise the employee to the effects of actions by the organisation. Intuitively, people affected by job loss and who have a debtor ideology would be expected to set-aside their social exchange disposition as a means of trying to minimise the chance of portraying any attitudes or behaviours that might be interpreted as negative and which could increase their vulnerability to further setback. The presence of an interaction supports this theory and it appears that involuntary job change leads to raised sensitivity towards the words and actions of an organisation relative to employees who have never lost their job.

It is worth noting at this point that the average tenure of respondents who had never lost their job was 12.8 years and was 4.1 years for those who had, at some time in the previous ten years, lost their job and so the explanation given for the interaction of perceived support on social exchange and commitment for the low tenure group may have some influence here. When respondents reporting involuntary job loss were excluded from the low tenure sample, a significant and substantial moderating effect was still observed ($R^2$=.396, $\Delta R^2$=.077, df=3, 33, F=4.20, $p<.05$) and this observation points to the robustness of the finding among respondents with low tenure.

The question of how the effects of layoff influence work related attitudes when professionals so affected rejoin the workforce appears to be largely unexplored in the literature (for an exception, see Fineman, 1987). The extent of the reaction of white-collar employees to unemployment is buffered by the perceived prestige of the last job, which helps to reduce the negative reaction, and professional identity which raises confidence about opportunities for returning to work (Fineman, 1983, p.7). Even after a return to work, feelings and attitudes are affected as returners seek to create security and are cautious before raising their profile (Fineman, 1987, p.269). It is worth noting that these

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[7]The survey questionnaire did not distinguish between involuntary job change caused by redundancy from job change caused by redeployment, dismissal or forced resignation. As such, involuntary job change is assumed to be a consequence of redundancy in the majority of cases reported.

observations were based upon research conducted when the 'old' psychological contract (see Table 4.2) was still dominant and the 'new' contract may have coloured the professional's reaction to unemployment. The related area of how downsizing affects survivors also offers some theoretical guidance. Among survivors, downsizing has been found to lead to feelings of job insecurity, stress, and reduced commitment (Brockner, 1988; Brockner et al., 1987; Greenhalgh and Rosenblatt, 1984) and the extent to which these effects impact upon individuals is influenced by the manner and severity with which the events leading up to layoff are managed by the organisation (Martin, Parsons and Bennett, 1995, p.887; Shaw and Barrett-Power, 1997, p.113). The impact of layoff will also be influenced by the individual's effectiveness at dealing with and reacting to the restructuring events occurring around them (Latack and Havlovic, 1992).

An individual's perception of threat is known to affect his or her level of information processing (Staw, Sandelands and Dutton, 1981) such that individuals become less able to discriminate between the various items of information provided to them and often ignore peripheral information relevant to the problem at hand (Shaw and Barrett-Power, 1997, p.116). Fewer channels of communication are used and preconceptions and past experience are relied upon rather than currently available information. What is not known is how persistent these effects are after the individual enters a new job and the influence of organisational actions upon them. It is reasonable to extend this theory, however, and to expect that the phenomenon of 'restriction of information processing' (Shaw and Barrett-Power, 1997, p.116) continues to exert some influence until, and unless, the individual readjusts to perceive minimal threat from the new organisation. It also seems reasonable to expect that employees who have previously experienced two or three layoffs would form a high resistance to perceiving little or no threat. The proverb 'once bitten, twice shy' aptly summarises this circumstance.

### 9.4.4 Commitment to Local Foci

The study also showed that perceived support had a moderating effect on attitudinal commitment to the supervisor (assumed here to be a line manager, and possibly in a senior position, rather than a person operating in a supervisory management role) and to the work group[8]. Given the diverse sample achieved in this study, respondents will have had widely differing involvements with work groups. Many employees can be expected to have been engaged in formalised and well-developed involvement programmes to solve quality problems, to cut costs or new product development teams, and such involvement has been found to facilitate greater attitudinal commitment (Griffin and Bateman, 1986) and greater communication within groups (Locke and Schweiger, 1979).

A starting point for an explanation of the interaction effects on commitment to supervisor and to work group is to recognise that, in formal organisations, informal organisations arise (Blau and Scott, 1963). These 'constituent groups' develop their own practices, goals and values as the members of the group work together and the goals of one constituency may be shared with those of others. Multiple constituency theorists believe that individuals and groups consciously define their relationship with a formal organisation in terms of their own personal interests. When these interests are not met, in fact or in perception, individual group members redefine the nature of their relationship (Shafritz and Ott, 1992). Drawing on the 'multiple constituency' view, the idea of commitment to a formal and homogenous organisation recedes and is replaced, to all intents and purposes, with a situation where the 'organisation' becomes the work group and the supervisor. This portrayal seems justified in the face of general trends to push autonomy and responsibility down to the 'lowest' unit of accountability, a phenomenon to which scientists have certainly been exposed (Coombs, 1998), and which can be expected to focus the mind on tasks in hand and their achievement. The finding of interaction effects then becomes consistent with the norm of reciprocity in which commitment to the organisation, as it manifests locally in the work

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[8]In this study, commitment to local foci was measured on an attitude scale and on a respondent-defined scale.

group and supervisor, is given in return for commitment from the formal organisation. Attitudinal commitment to the global, formal organisation, as assessed through the Affective Commitment Scale was not moderated by perceived support and this can be explained using multiple constituency theory in which the relevance of a global organisation to which positive attitudes can be directed is diminished.

In the main, perceived support revealed positive interactions with exchange but the presence of negative interaction terms on commitment to the supervisor when respondents had experienced prior job loss suggests that the interaction takes a different form for this group. The relationship seems not to be influenced by the zero-order correlation between social exchange and the foci of commitment, although these correlations were negative, but by the correlation between social exchange and support which was -.33 (p=.075, n=29) for the group experiencing more than one involuntary job change but was not significant for the larger group that had experienced one involuntary job change. The small sample of respondents with more than one enforced job change points to the need for caution when interpreting this particular result, which indicates that more than one job change alters the support-exchange relationship. The effect appears to show that people with a high exchange disposition reduce their commitment to the supervisor as commitment to them from the organisation increases. This could be an indication of a retaliation effect against the supervisor, possibly because they are seen as instrumental in any decisions concerning those who may be selected for future redundancy. One explanation might be that individuals display this tendency in order to redress a psychological balance, to 'level the playing field' by taking inputs that are perceived as compensating for past wrongs. What is also interesting, if the finding is reliable, and assuming that those in this small group have changed employer rather than involuntarily moved within the same employer, is that this attitude is directed at an apparently innocent party. This finding is consistent with basic learning theory which holds that people learn appropriate responses depending upon how they were rewarded or punished when particular responses were freely made for the first time. Thus, people who gave their commitment to a supervisor, only to subsequently lose their job, would be expected to modify their attitudes and behaviours, particularly if the supervisor was believed to have been instrumental in the decisions leading up to job

loss. The small sample (n=29) of people reporting more than one enforced job change showed a mean tenure of 2.7 years (median 2.2 years) suggesting that the situation is not quick to revert to its former state before job change, if it ever does.

The results of interaction tests show that commitment to top management is not influenced by a support-exchange interaction. The only interactions noted (Tables 8.5 and 8.6) were weak effects in large groups. An explanation for the absence of interactions for top management is that, for many of the respondents, top management was a distant group, perhaps one that they seldom encountered in person. From the individuals' viewpoint, little may be gained from showing greater attitudinal commitment to top management in comparison to the more proximal nature of work group and supervisor for whom the increased commitment could generate more immediate and more tangible effects. The respondents' position in their organisation's management structure was not captured by the survey questionnaire, and, if it had, it would have been possible to explore whether an interaction begins to take effect as involvement in management increases.

In sum, the pattern of interactions indicates that the network of interrelations among variables leading to the expression of commitment to top management differs from that leading to commitment to the work group and to supervisor. The study suggests that, no matter how much support is given (perceived), this does not allay the effects of social exchange on commitment to top management. The findings, based on responses to the social exchange scale, suggest that British corporate professionals differ markedly in their acceptance of Gouldner's (1960a) norm of reciprocity at work. This particular finding extends a similar conclusion of Eisenberger et al. (1986, p.506) based on a small study of US school teachers. It follows that it is legitimate to visualise the organisational commitment of British accountants and pharmaceutical chemists, at least, as a consequence of social exchange processes. The notion of commitment developing as a result of exchange relationships is not new (Etzioni, 1961; Gouldner, 1960; Scholl, 1981) but it is encouraging to find that the new behavioural commitment scale can also be embraced by exchange theory. The findings also show that British corporate professionals can form a global belief (perceived support) about the extent to which the organisation values their

contributions and cares about their wellbeing. This is useful in extending the findings of Eisenberger et al. (1986) based upon a study of largely non-professional employees.

## 9.5 ORGANISATIONAL COMMITMENT AND PROFESSIONALISM

This section revisits the research questions

- To what extent is organisational commitment related to professional ideology?
- How does professional ideology affect the reciprocal basis of commitment?

### 9.5.1 The Role of Support

At the outset of the quantitative study, it was anticipated that a 5-component measure of professionalism would be used to study interactions. In view of the difficulties encountered (section 7.5.1) the professionalism scale finally used was a combination of commitment to the profession and professional autonomy and these two components were used represent professionalism in this thesis. In the overall regression equations (Table 8.1), professional commitment explained more variance in behavioural commitment ($\beta$=.18) than affective commitment ($\beta$=.11) as did autonomy ($\beta$=.22 and $\beta$=.07 respectively). The only local focus of commitment influenced by professionalism in the overall regression equations was commitment to the work group.

When the original 5 components of professionalism were entered into the regression analysis, together they accounted for 27.2% of the variance in behavioural commitment (SMNEWOCS), 18.7% of variance in affective commitment (SMACS), and 12.6% of the variance in ORGCOM. Commitment to the profession and professional autonomy had the largest influence on $R^2$ and the profession as referent dimension (SMPMR) only explained variance in behavioural commitment. The 5 components explained less variance in

commitment to local foci; around 13% of commitment to top management, 12% of commitment to the work group, and 6% of commitment to the supervisor.

This peripheral but interesting finding is further evidence that commitment to a profession is congruent with commitment to the organisation, that is, there is no inherent clash of commitments (Bartol, 1979; Gouldner, 1957). It is logical to assume that people who report high perceived support, in general terms, also perceive support for professional activities. When the above analyses were repeated on respondents whose perceived support score was low (the bottom one-third of scores), only professional autonomy (SMPMA) was a predictor of behavioural commitment (adj$R^2$=.045, df 1, 78, β,=.238, p<.03). For the top one-third, adjusted $R^2$ rose to .188 (df 2, 233) and both autonomy and commitment to the profession (SMPMC) were significant predictors (p=.000). For affective commitment, none of the professionalism dimensions explained variance when perceived support was low. Thus, when professional activities are supported by the organisation, professionalism and organisational commitments can co-exist. When perceived support is low, professionalism does not appear to diminish organisational commitment, rather, there is no relationship between the two commitments.

### 9.5.2 Organisational Commitment, Professionalism and Social Exchange

A widespread interaction effect (Proposition P3) was noted on behavioural, affective and respondent-defined commitment. The effect was particularly strong among union members and was not observed in the larger, non-unionised, sample. The interpretation offered is that social exchange has a negative zero-order influence upon organisational commitment, but when the level of professionalism increases, it is capable of offsetting the negative effects of exchange to create a positive interaction. This is illustrated by examining the interaction on behavioural commitment for the aggregate sample ($R^2$=.273, $\Delta R^2$=.008, df 3, 601, F=6.66, p=.010). The regression equation was

SMNEWOCS = 53.3 + 0.50CENTPC_A - .10CENTEI + 0.09XCENEIPCA[9]

Using one standard deviation (8.8) above and below the mean (0) to represent high and low values of professionalism, the following equations are obtained

low professionalism: SMNEWOCS = 48.9 - .89CENTEI

moderate professionalism: SMNEWOCS = 53.3 - 0.1CENTEI

high professionalism: SMNEWOCS = 57.7 + .7CENTEI

Thus, the slope of the regression equation on social exchange is positive at high professionalism (+0.7), is slightly negative at moderate professionalism (-0.1), and is negative at low professionalism (-0.89). This broad pattern can be applied to all other professionalism-exchange interactions where the interaction term is positive. People with high professionalism (and therefore high commitment to the profession) will be concerned to raise the status of the profession within the organisation as this, in the long-run, should prove self-serving. Two reasons can be advanced why professionalism acts as a pervasive moderator. First, moderation occurs because professionals will not want to let a high exchange disposition, if they have one, lead to any attitude or behaviour that might be construed as tarnishing the status of the profession within the organisation or even of bringing the profession into disrepute. Second, although not measured by the professionalism scale used here, the concept of professionalism implies the suppression of emotions in work situations. High levels of autonomy may also lead to perceptions that professionals can interpret and react to potential negative influences as they have the freedom to work around them. Collectively, this mindset intervenes to prevent negative influences from reaching the point where they might adversely influence the perception that others have of the profession, either directly through personal contact or indirectly through the quality of services provided. The moderating influence of professionalism has been observed previously, although on different variables to those examined here (Howell and Dorfman, 1986; Mathieu and Hamel, 1989).

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[9] The interaction term XCNEIPCA is the cross-product of CENTPC_A and CENTEI.

It is interesting that the interactions were not present in the subgroup that had experienced involuntary job change, suggesting that where job loss has occurred, it acts to offset, although not nullify, the otherwise positive effects of professionalism on commitment. In support of this, an interaction was detected when involuntary job change was treated as a qualitative, dummy variable (Table 8.11) influencing behavioural commitment (F=3.01). Further analysis of this interaction showed that, in the non-unionised sample, no interaction was present. In the smaller, unionised sample, the involuntary job change dummy variable was a negative predictor of behavioural commitment (β= -.76, p=.04) and the interaction term was positive (β=.70, p=.05, F=3.68). This pattern was repeated using ORGCOM as the dependent variable but was not observed for affective commitment. The number of union members who had experienced involuntary job change was only 20 and so this result has to be taken cautiously. A possible mechanism for the apparent effect is that involuntary job change strengthens the employee's allegiance to a union and detracts from the expression of commitment to the organisation. (Union commitment was not assessed in this survey and it is not known whether respondents were members of a union before job loss had occurred).

### 9.5.3 Social Exchange and Commitment to Local Foci

No distinctive patterns appeared in the interactions for commitment to local foci except that, by and large, they were only detected on the respondent-defined scales. For the aggregate sample, professionalism moderates the relationship between social exchange and commitment to supervisor, the work group and to top management. Interactions were not detected for the CIMA group or for those who had experienced involuntary job change. Given that the CIMA and CIPFA samples were of similar size, the clear absence of the interaction for CIMA and the clear presence of an interaction for CIPFA points to the cause of the difference lying with the nature of the sample group. The answer may lie in the nature of the work undertaken since, while local government organisations can be large enough to employ several thousand people, many of the authorities surveyed employed

contact with top management. The top management of pharmaceutical manufacturers may, in relation, be perceived as being more remote and impersonal. If so, this could explain the absence of an interaction with CIMA as any interaction would serve little purpose given the distant nature of the target for the commitment.

Neither R&D scientists or CIMA revealed a professionalism-exchange interaction on commitment to work group whereas an interaction was observed for CIPFA. Closer examination of the CIPFA interaction revealed that a clear interaction was present among the union members (WORKGP, $\Delta R^2$=.04, $\hat{R}^2$=.243, df 3,97, F=5.17, p<.05, β(professionalism) .26, sig. .0042, β(exchange) -.28 sig. .0033, β(interaction) .21 sig. .0252). The interaction was not present among the non-unionised CIPFA members ($R^2$=.156, df 3,59, β(professionalism) .31, sig. .0125, β(exchange) -.21, sig. .09). This indicates that the influence derives from union membership rather than some aspect of the public sector. The number of union members in other professions was too small to allow a comparison, however.

To interpret this situation, consider the regression equations predicting commitment to work group (above) at high and low professionalism for union and non-union members. Substituting one standard deviation (8.8) above and below the mean to denote high and low professionalism respectively, gives the following equations for the prediction of work group commitment (WORKGP) where C denotes the equation constant.

| | |
|---|---|
| High professionalism, union: | C + 2.29 + 1.57CENTEI |
| High professionalism, non-union: | C + 2.73 - .21CENTEI |
| Low professionalism, union: | C - 2.29 - 2.13CENTEI |
| Low professionalism, non-union: | C - 2.73 - .21CENTEI |

For a given level of social exchange (CENTEI), commitment to work group is maximised for high professionalism union members and minimised for low professionalism union members. For non-union members, work group commitment is less dependent upon exchange given the much smaller regression slope (-0.21). It is important, however, to look

only at the broad relationships here and not the exact predictions from the equations. Whereas union membership might compete for commitment, and, other things being equal, attract commitment away from other foci such as the organisation or foci that benefit the organisation, high professionalism cognitions seem to intervene to prevent that happening. When professionalism is low, it is unable to counterbalance the competing demands created by union membership. If professionalism is low, then, by definition here, commitment to the profession is low, which implies that this creates a 'space' into which alternative commitments, perhaps to a union, can expand. This explanation has similarities with the idea of commitment as a zero-sum game (Kalleberg and Berg, 1987; Romzek, 1989). It is also linked to the findings (Guest and Dewe, 1991, p.91) among blue-collar, clerical and technical staff, that groups existed that were characterised by either commitment to both organisation and union, to union, to organisation or to neither.

Overall, professionalism explained more variance in commitment than social exchange in all the interaction tests and it appears that professionalism can interact to offset the negative influence of exchange on commitment to top management and to work group more so than to supervisor.

### 9.5.4 Organisational Commitment, Professionalism and Job Insecurity

The theory advanced above for the positive effect of professionalism appears to break down here as professionalism does not interact to offset the effects of job insecurity on commitment (Proposition P4) and no clearly interpretable patterns emerge from the mostly weak interactions evident in Table 8.9. There is a suggestion that negative professionalism-insecurity interactions on behavioural commitment are present for men and for those aged over 50. A t-test indicated that respondents aged over 50 (who were all men) reported significantly higher job insecurity than those aged under 50 ($t=1.98$, $p=.048$) but the arithmetical difference involved was minor (means of 10.6 versus 9.7). Across the combined sample, men reported significantly higher insecurity than women ($t=3.81$, $p=.000$, means of 10.2 and 8.8).

An interesting finding among this set of interactions was that, for men, in the prediction of affective commitment, behavioural commitment and commitment to top management (TOPMAN), the sign of the interaction term was negative. In contrast, the commitment interactions for women were positive. Zero-order associations among the antecedents and correlates of organisational commitment, usually measured with the OCQ, typically show little if any difference according to sex of respondent (Aven et al., 1993; Bruning and Snyder, 1983; Morrow, 1993, p.95). Some studies (e.g. Graddick and Farr, 1983) have noted gender influences on commitment but the specific finding of differential relationships on affective commitment arising from job insecurity is new. Judging by the smaller, and in some cases non-significant, values for beta in the MMR equations for women (Appendix K), it appears that job insecurity has a reduced influence among women compared to men.

The average ages of women and men were 33.7 years and 42.2 years respectively (t=11.01, p=.000) and average tenure was 7.5 years and 12.3 years respectively (t=5.66, p=.000). Men had experienced slightly more involuntary job change, 18.5% compared to 13.6%. For men, at high job insecurity (Table 8.17), the effect of professionalism on affective commitment was static, whereas at low insecurity, commitment increased with professionalism. Among women (Table 8.18), commitment increased with professionalism at high insecurity. Given that men were significantly older than women and had significantly more tenure, men with high commitment to the profession may have experienced stronger feelings of job immobility. This is supported by a stronger correlation between insecurity and continuance commitment for men (.30, p<.000, n=477) than for women (.18, p=.042, n=126). Feelings of restricted job mobility would explain the negative interaction that impedes commitment at high professionalism.

There is, therefore, a hint in this study that sex influences the way job insecurity affects commitment and that these influences are related to a network of variables that concern the economic centrality of work to the individual, rather than role-related factors. However, it is very difficult to attribute differences in work-related variables directly to sex as any observed differences may be resulting, in fact, from differences in pay or aspects of the job

such as social relationships. It is possible that a group of men sharing particular work-related characteristics as women could show the same interaction effects.

A related finding is that professionalism and insecurity produced a strong negative interaction on the commitment to goals dimension of behavioural commitment (F=15.60, p=.000). This subscale concerns commitment to individual-level goals, and this finding is consistent with feelings of insecurity combining with feelings of reduced job alternatives (by virtue of age and commitment to a particular profession) in a way that makes achieving alignment between personal goals and organisational goals problematic. This may arise because, in the later career stages, people see the organisation, and work in general, as taking on a different role in their future life. This presents challenges for managers as, given the proportion of people aged over 50 in the workforce (14% in this study), there is a large group for whom achieving goal congruence can be troublesome. On the brighter side, no interactions (negative or positive) were observed for Achievement or Innovation for this group, suggesting that these aspects of work are not influenced by the interplay between insecurity and professionalism. In closing, I point-out that there is nothing categorical about the choice of age 50 as a cut-off. It was chosen arbitrarily to explore age-related effects and seems to have served that purpose.

### 9.5.5 Job Insecurity and Commitment to Local Foci

Turning to local foci, no pattern of interpretable interactions were noted for commitment to the supervisor or the work group. Strong negative interactions were observed on commitment to top management which were detected by both measures of this construct for the over-50 age group. Top management would be central to any perceptions of job insecurity, for example, through their pronouncements and policies for rationalisation, and the strength of this interaction was relatively large. It can be explained through the interplay of job insecurity and feelings of immobility brought about by professional commitment. At low insecurity, commitment to top management increased with increasing professionalism, but at high insecurity, commitment decreased sharply with increasing

professionalism. The explanation proposed for this is that when insecurity and professionalism are high, this is seen as an attack on the value of the profession coinciding with feelings of immobility, entrapment and powerlessness which lead to reduced commitment. When professionalism is low, individuals will not be as troubled by the thought of insecurity representing an attack on their profession and may perceive greater mobility, given that they are not strongly tied to a single profession. Commitment to top management rises because individuals see this as a means of signalling their own portability and redeployment potential within the organisation.

### 9.5.6 Organisational Commitment, Professionalism and Continuance Commitment

The professionalism-continuance interactions (Proposition P5, Table 8.10) show a clear pattern in that they are present for behavioural commitment but, mostly, not for other forms of organisational commitment. As the analysis of these interactions in the previous chapter revealed, however, the interaction is negative. This can be interpreted as indicating that, as continuance commitment increases, behavioural commitment falls despite increasing professionalism. An important difference between these interactions and those observed on job insecurity is that interactions on continuance commitment were present on most sample subgroups, they were generally stronger and broadly covered the three dimensions of behavioural commitment. The only groups where they were not observed were for tenure less than two years, for whom continuance commitment is a less appropriate concept, and for women.

Affective commitment does not show an interaction except for the over-50 age group and the detection of this weak negative effect ($F=2.83$, $p<.1$) is indicative that high continuance has adverse outcomes for the organisation and for individuals who face the consequences of job immobility. The mechanism for these effects is different to those in which interactions were positive as, in this case, professionalism is unable to recover the accumulating negative influences of continuance commitment.

Commitments to work group and to supervisor were unaffected by negative (or positive) interactions although both measures of commitment detected negative interactions on top management for the following groups; union members, the small number of respondents with more than one involuntary job change and for people aged over 50. This grouping suggests that continuance commitment is particularly aggressive when identification with an organisation is contested (e.g. by a union) or is tainted by situational factors such as the anxieties of previous involuntary job loss or the realisation of low employment alternatives.

## 9.6 CLOSING THE DISCUSSION

### 9.6.1 Supplementary Findings

Some comment upon the measurement scales used is also possible. The original professionalism scale appears to have its limitations as the factor and regression analyses showed that the subscales for profession as referent (SMPMR) which relates to the use of the profession's infrastructure, belief in the value of the profession (SMPMB) and belief that the profession can assess and set standards (SMPMS) showed weak reliability. In addition, some of the inter-factor correlations were too low to uphold the view that they are tapping into the same underlying construct. The introduction of quality standards and quality assurance systems by bodies outside of the professions and the requirement to monitor and report on such matters to external auditors (for example, the Quality Assurance Agency for Higher Education and OFSTED for schools) may have led to a derecognition and redundancy of these components. The professional commitment and professional autonomy scales appear to have been more robust to changes affecting professions.

The social exchange scale also appears to warrant further development. Reliability was on the limits of acceptability and a 4-item scale has no room for a poorly worded item which will easily unsettle the calculation of alpha. A number of respondents had marked or

queried the social exchange items in their surveys and this is taken to indicate some confusion over item wording. Furthermore, with the benefit of hindsight, it seems that the scale captures a person's global belief about others and not, as intended, their personal attitude or outlook on exchange. For instance, consider the item 'An employee's work effort should not be affected by how well the organization treats him or her'. Agreement with this item is taken to signal low exchange but it appears to be capturing the respondents' general beliefs about how something ought to be. It does not capture what they feel the global situation actually is or, as was surely intended, how they personally respond to how the organisation treats them. The use of the word 'should' in each of the items is encouraging respondents to give their view of an ideal state rather than their reality of the work situation they are in. In order to capture an unambiguous measure of a person's exchange ideology, the item above could be reworded in the manner, 'My work effort is not affected by how well the organisation treats me'.

Finally, good psychometric properties were displayed by the data collected by the Survey of Perceived Organisational Support and the Affective and Continuance Commitment Scales. This suggests that they are suitable for further application to British survey participants.

### 9.6.2 Causality

This research has proceeded with an implied causality in which perceived support and professionalism influence commitment and in which social exchange, job insecurity and continuance commitment can intervene to influence this relationship. For those subgroups for which this relationship was observed, this causal sequence cannot be confirmed in view of the cross-sectional nature of the data and other research designs would be needed to verify or refute the pathways suggested. An alternative model could hold in which the causal direction runs from commitment to, for example, perceived support. In this model, individuals who consistently deliver high commitment may perceive the feedback from their line managers and co-workers as rewarding and supportive of the specific behaviours

that initiated the feedback. Perceptions of support might influence social exchange, for example, if feedback is construed as deficient or unjust then it could trigger high exchange cognitions whereas positive praise could sustain low exchange cognitions. However, social exchange theory is quite clear that exchange is an antecedent of commitment and the causal pathways assumed in this thesis are justified by theory and by longitudinal research (Meyer and Allen, 1988) which indicated that perceptions of the working environment influence commitment rather than the reverse. In addition, the observation by Hollis (1994, p.49), that, in 'positive science', when unobserved variables are unknowable, 'the epistemological core of probability can only be the frequency with which a correlation is found to hold', points to the inevitability of relying upon correlations to guide theory development.

## 9.7 CHAPTER SUMMARY

The new behavioural organisational commitment scale is argued here to be a better manifestation of organisational commitment than its alternatives. It is better because it departs from the supposedly unidimensional scales that capture a simpler, positive affective state and which, it is argued, are shadowy representations of the commitment of professionals employed in competitive and unpredictable business environments. The expectations put upon job incumbents no longer fit comfortably with commitment as a global attitudinal state and the behavioural scale captures the high levels of interplay that now need to exist between employees and organisations if strategic initiatives are to be realised. While positive affect towards a global organisation is a useful and valid construct in its own right, researchers interested in examining organisational commitment should consider very carefully how they want to represent the construct before making choices from among the scales available.

The new scale requires further development in order to raise the level of correlations between its latent factors. However, it is very apposite that, far from being unidimensional, the OCQ and the BOCS are, in reality, tri-dimensional.

The key findings of this study are summarised as follows.

1. A measure of commitment has been developed that enjoys greater harmony with the thrust of contemporary human resource management initiatives than is offered by alternative measures. The view presented here is that commitment is not solely a state of mind, but a more complex attitude-behaviour mix. The focus of the new scale is upon congruence of individual-level goals, work-related effort and innovative behaviours.

2. The norm of reciprocity appears to influence technical professionals to a greater extent than professionals more closely connected to management. The influence of reciprocity on commitment also varies with tenure (low tenure appears to amplify the link), and with the experience of prior job loss.

3. Commitment to top management is not influenced by positive support-exchange interactions, unlike commitment to the supervisor and the work group. This is attributed to the distant nature of top management and the potential for mutually supportive interplay between the more proximal work group and supervisor.

4. Commitment to profession and to organisation can co-exist when the organisation is supportive of professional activities. Low organisational support appeared to generate a curtailment of commitment to the organisation although no negative link between organisational and professional commitment was noted.

5. Few interaction effects were observed in the CIMA sample. This group (n=138) was only marginally smaller than CIPFA (n=166) for whom far more interactions were noted and so the explanation seems unlikely to lie in sample size effects. Aspects of the profession, for example, the incidence of union membership and the proximity to top management are possible explanations of this difference.

6. The influence of job insecurity on affective commitment differs between men and women. The influence is not found in the zero-order correlations, which were the same, but is moderated by professionalism cognitions.

7. High professionalism combines with continuance commitment to create a negative influence on the dimensions of behavioural commitment.

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# CHAPTER 10

# DRAWING CONCLUSIONS

## 10.1 INTRODUCTION

This chapter draws-out the conclusions of this study which are organised into general conclusions, the contribution made to the field of commitment research, the practical implications for human resource management, a reconsideration of the study's limitations and, lastly, suggestions for further research.

## 10.2 GENERAL CONCLUSIONS

The domain of work commitment is best seen as comprising of three inter-related levels. First, there are the several bases of commitment which, in simple terms, describe why a person may be committed to an organisation (e.g. Meyer and Allen, 1997). The bases, in-turn, are linked to the expression of commitment to several foci (e.g. see Morrow, 1993) and researchers have attempted to portray both bases and commitment foci as unidimensional constructs, for example, Blau's (1985, 1988, 1989) commitment to a profession. Researchers seeking to measure organisational commitment have adopted 'on the shelf' scales which, being widely held to be unidimensional, tend to show good reliability and which facilitate measurement techniques based upon correlations. I now suggest that the presumption that organisational commitment is unidimensional has been excessively favoured by researchers because of its simplification of measurement problems. Furthermore, the assumed versatility and generalisability of the existing commitment scales when applied to diverse occupational groups appears unsound. Although attractive on practical grounds, such practice appears to understate the complexity of organisational commitment. If organisational commitment is the Cinderella of human resource management, then the research community has tried to fit her glass

slipper to the ugly sister of measurement. With professional groups at least, the construct appears to have too many inter-related aspects that do not justify a unidimensional approach and the implications for commitment research are significant.

Where commitment can legitimately be equated with a simple belief in, and acceptance of, organisational goals, perhaps with clerical or manual workers, then a unidimensional scale would appear to be useful in elaborating commitment's nomological network. For those occupational groups where this representation of commitment is an over-simplification, and whose commitment is better seen as a complex interplay of attitudes and behaviours, the measurement problems become more acute as it is harder to draw a clear boundary around the construct. Advances in commitment research will be restrained until researchers recognise the true dimensionality of organisational commitment that exists with particular occupational groups. This understanding requires the development of a model of commitment that integrates the bases of commitment, attitudes towards relevant foci and role-related behaviours.

The view of commitment developed and tested aligns better with the requirements of organisations that operate in highly competitive environments and which need constant renewal of ideas and knowledge as precursors of product and service innovation from an increasingly professionalising workforce. In taking a view of attitudes and behaviours being inter-twined, there is an explicit rejection of the planned behaviour thesis (Ajzen, 1985, 1991) insofar as it was ever an explanation of commitment processes.

The new interpretation of commitment developed here is offered as a contribution to understanding and yet, having reviewed the literature and used some of the research methods commonly employed, I have become less enamoured with the traditional approaches that are taken. Persistent attempts to deconstruct work commitment and to examine how aspects of it, for example, continuance, goal commitment and commitment to local foci, are separately influenced by a small set of other variables that are in reality influenced by other (unmeasured) variables do not appear to have moved understanding of the commitment domain very far forward. This observation thus becomes a criticism of

this thesis but one which has emerged after the research was completed. Commitment research requires greater agreement and consensus over the definitions and inter-relations among its many component parts as there is still much ambiguity. Researchers who use the ACS or the short version of the OCQ are only assessing one aspect of commitment and yet, the implied assumption is that the entire constellation of organisational commitment is being captured. Other researchers rely upon scales with scanty evidence of validity beyond reliability (e.g. Hunt et al., 1989) and, in some cases, I feel that the researchers have not been sufficiently critical in deciding what they mean by organisational commitment and thus how best to operationalise it. Even the popular scales have their detractors, for example the critique by Ko et al. (1997) of Meyer and Allen's three-component model and the OCQ.

More research is needed, therefore, to understand commitment across diverse work settings in order to see how its constituent parts are related. Only then, when the domain can be 'chunked' with more confidence, should quantitative modelling approaches be used in order to test causal ordering within and between the 'chunks'. Without this return to basics, researchers, to paraphrase Keynes' dictum, run the risk of being precisely wrong rather than vaguely right.

## 10.3 THE CONTRIBUTION OF THIS THESIS

This thesis has advanced the understanding of the basic question, 'what is commitment?' by engaging with the proliferation of ideas evident in the commitment literature in the context of contemporary employee relations. Allen and Meyer (1990, p.14), referring to their three-component model, consider that in each of the three cases, 'commitment refers to a psychological state that binds the individual to the organisation'. Researchers utilising measures of commitment have used one or more components from their model, in all probability, to measure commitment, and yet it has been argued here that two of the three components assess the reasons why people may be committed, and do not assess organisational commitment itself. The continuance and normative scales certainly fall into

this category and should only be used as measures of binding reasons. The affective scale can be viewed either as measure of binding reasons, or, as this study has argued, as part of a more complex construction of commitment.

The primary contribution of this thesis is the demonstration that organisational commitment can be recast to embrace the recent literature dealing with organisational restructuring, the innovatory and prosocial behaviours of employees and the behaviours of organisations towards those employees. Specifically, the key contribution has been to develop a measurement scale that is conceptually and empirically distinct from other measures of commitment, such as the Organizational Commitment Questionnaire, and the Affective, Normative and Continuance Commitment Scales. While more research is needed to further explicate the nature of commitment itself, and refine a better balanced measurement scale, the model proposed here is radically different from others currently in use. The difference lies in the conflation of attitudes and behaviours which, while conflicting with a stream of previous work (Griffin and Bateman, 1986; Meyer, 1997; Morrow, 1993) is congruent with a reshaped employment climate and the missions of organisations in highly competitive environments. This is an important advance in view of the history of research which has seen only incremental developments to measures of organisational commitment rather than substantive reconceptualisation.

Furthermore, it has been shown that a social exchange explanation of commitment among British corporate professionals is valid and, that the moderating influence of perceived support is itself influenced by situational variables. Although some empirical support for this relationship has been provided before (Eisenberger et al. 1986, p.505), the influence does not appear to be widespread in British accountants or pharmaceutical chemists.

The findings that a) the buffering effect of perceived support on organisational commitment is absent in the general population of organisational professionals but is present in groups that may have a sensitised link to the organisation (union members, short tenure and enforced job loss), and b) perceived support buffers the influence of exchange on commitment to the supervisor and the work group in general, usefully extend and de-

limit social exchange theory. Exchange theory is also extended by the finding that professionalism provides a widespread buffering mechanism in the general population, but which in contrast to perceived support, does not occur so much in the 'sensitive' groups.

The explanation may lie in the source of these buffers as perceived support is external to the individual, it is vulnerable to sudden changes of magnitude, and is part of the two-way employee-organisation linkage. For those with a heightened sensitivity to the organisation and its activities, the buffering mechanism cuts-in. For more mainstream groups, for example, long tenure and no prior job loss, there is no buffering mechanism present, presumably because there is no residual sensitising effect in the background that heightens awareness of an input-output approach to work.

Professionalism, in contrast, is a respondent trait that, if assumed to reflect how a person approaches their work, appears to buffer the negative influence that exchange would have on work. In effect, professionalism appears to be upholding the delivery of commitment, such that the professional's contribution to his or her work is not tarnished by an inherent input-output outlook. It is interesting that no sign of the buffering mechanism was found among respondents who had experienced job loss, hinting at the possibility that this experience might shatter the ability of professionalism to overcome the negative influence of a high exchange disposition.

Professionalism has an unexpected, negative relationship with perceptions of high exit barriers and, to a lesser extent, job insecurity suggesting that these are potentially explosive combinations as far as behavioural commitment, in particular, is concerned. An explanation for this effect is that if people have reached a stage in their career when they perceive the need for job change, perhaps for social or economic reasons, and they feel prevented from changing job, their commitment to the organisation they feel trapped in diminishes out of frustration. The more they are committed to their profession the worse this situation becomes, presumably because a reconfiguration of attitudes and behaviours towards the profession takes place as the profession is the target of job search activities. It is also possible that, one of the reasons why they feel unable to leave is because they

harbour doubts about the portability of the knowledge and skills they have accumulated with an employer and may in some way blame their employer for not making them more employable, in their view. This attribution of blame would then translate into a withdrawal of positive attitudes and behaviours directed at the source. This situation brings us back to Gouldner's (1957) ideas of professionals in organisations. If perceptions of high exit barriers coincide with perceptions of low support (r= -.31 in this study, p=.000) then the relative absence of support will foster the conditions for the classic local-cosmopolitan tension in which commitments to both profession and organisation cannot co-exist. Co-existence of the two commitments requires the presence of organisational support.

In sum, this study contributes to the literature on commitment in several ways. First, by constructing a description of the commitment of corporate professionals that has improved utility to theory development in view of the demonstrable limitations of popular measures. Second, by examining the role of perceived organisational support in the relationship between commitment and exchange disposition, the study adds to knowledge concerning the examination of structural variables in diverse organisational contexts and it helps to isolate the antecedent variables having the most profound influence on commitment (Morris et al., 1979, p.69; Morris and Sherman, 1981, p.524). Third, it contributes to an understanding of the influence of the perceived support construct (Shore and Tetrick, 1991, p.642) and the influence of social exchange (Sinclair and Tetrick, 1995, p.678). Fourth, the study addresses prior calls for further work into the moderating influences upon commitment (Meyer, 1997, p.207) and, fifth, through appropriate sampling, helps to understand how managerial and corporate restructuring have influenced the nature and form of organisational commitment (Meyer, 1997, p.218). Lastly, the study contributes to an understanding of the interplay between professional attitudes and commitment, and to the factors affecting the role of the organisational professional which, having undergone a transformational change, merit further research (Pemberton and Herriot, 1993, p.25).

I hope that the greatest contribution, however, will be to advance the debate among organisational scientists concerning the nature of commitment in professional organisations. The scale developed here will require further testing and modification before

it can be used extensively and if this thesis helps to extend commitment theory and research into new areas and to integrate existing literatures then I believe that the contribution will indeed prove to be a substantial one.

## 10.4 PRACTICAL IMPLICATIONS

The practical importance of the findings is overshadowed by problems relating to their statistical significance. A memorable interpretation of statistical significance levels (p values) is that the p value shows the likelihood of obtaining a result by chance alone. For example, if an interaction term is significant at, say p=.01, then there is only a 1 in a 100 chance that the result is a fluke, and it follows that it is reasonable to accept the likelihood that the effect is real. This interpretation has been shown to be misleading (Matthews, 1998), and, in order to estimate what researchers seek, namely the probability that the result has appeared by chance, it is necessary to apply Bayes' theorem. This, in-turn, requires a subjective estimate of the probability that a statistical effect is real, and Matthews shows that, assuming a 1 in 2 chance that an effect is real, then, for a result significant at p=.05, there is a 22% chance that the results is nothing more than a fluke. The implications of this for all social and natural science researchers are major and he uses them to explain lack of progress in both domains and to explain why apparent breakthroughs come to nothing.

In response to Matthews, however, when a result appears plausible through theory and, in time, is replicated across diverse samples with diverse methods, then confidence in the findings increase. No single study can create such confidence and so what follows here should be seen in this context. The other issue arising is the practical significance of the results - even if statistical significance is accepted, this does not speak for their practical significance which in some research may be very low. In this study, some of the interactions explained only a small increment in the variance of commitment, often less than 1%, while other interactions explained 5-10%. The former case appears trivial but it is necessary to recall (chapter 5) that interactions are difficult to detect. The apparent

statistical size effect is influenced by error present in the research design which stems largely from 3 sources: reliability of scales, the influence of variables that were not measured, and common method variance. Despite these sources, the position taken here is one that views the apparent presence of an interaction as a real and useful finding. On one hand, in the inevitable presence of error and uncertainty, the effects of interactions could be played-down. On the other hand, this same argument can be used to lobby for treating them as important since, as they have been detected through the several veneers of error that exist, they should be seen as useful findings. Given that they are detecting additional variance after influential main effects have been added, their influence should not be discounted. The situation is akin to the physicist who cannot directly observe sub-atomic particles, but who can see they trail that they leave in the presence of other, observable matter.

For managers of corporate professionals, several broad recommendations emerge. First, to ensure that through their policies, organisations enhance and grow feelings of professionalism at the level of the individual. There is generally little danger that increased professional identification will detract from commitment to the organisation although this becomes a problem when people feel insecure and when they feel they cannot leave. Greater professional commitment could come through sponsoring the membership of professional bodies and actively supporting involvement at meetings, committees and conferences and providing opportunities for individuals to progress through the grades of membership of a professional body. The counterside is the avoidance of actions that could be interpreted as denying employees an opportunity to participate in, or contribute to, activities that would strengthen their identification with a professional body or the development of professional standards. Second, organisations should keep in constant review the mechanisms through which employees are supported in their work, and the nature and form of that support with a view to leveraging the support as a route to bolstering commitment.

Managers need to be aware that individuals who are recent starters, or who have previously lost their job, or who are union members appear to be more sensitive to the influence of

perceived support. It seems necessary, therefore, for managers to be clear about the actions that are interpreted as leveraging support and actions that are not. This is not a simple matter as, while it may appear obvious that some actions would be widely seen as supportive, the interpretation that employees may put on certain actions by the organisation may run counter to the expectations and predictions of managers. Managers, for instance, might expect that support that they personally value would be held in similar regard by their professional subordinates, but this is not necessarily the case. It is important that support is not seen as being just a contractual part of an employment relationship and employees need to sense that a part of it is somehow over and above normal expectations, tailored, personalised and unplanned. Not all support can be given in this way, but a certain amount of 'spontaneous' support seems a powerful antecedent of behavioural and affective commitment.

By way of illustration, when a new start has previously lost a job, it seems prudent that human resource managers and line managers explicitly recognise this background in order to ensure that actions by the supervisor and the organisation are received as supportive. Any differential treatment of new starts with recent job loss behind them would seem to be justified in order to reduce their vulnerability to sensitising their commitments. In a general climate where equity, equality and equal opportunities are high on the agenda of individuals and organisations, this may seem a strange recommendation. However, so long as discretionary support is distributed in a manner perceived as fair, then much good will be done.

This matter is tied to the issue of individual social exchange disposition, the level of which influences how employees view actions that are intended to be supportive. I would not go so far as to suggest that recruitment and selection procedures should try to determine an applicant's social exchange disposition, but the wider issue of whether certain people are more disposed to giving commitment than others must have important implications for selection practices.

One particularly intriguing finding is the apparent inability of a strong commitment correlate, professionalism, to offset the negative influence of continuance commitment. The influence of accumulated pension rights or strong social ties to a local region will remain strong and accompanying feelings of high exit barriers cannot easily be dismantled. Nevertheless, it would seem prudent for organisations to devote effort into maintaining employee employability as the consequences of not doing would only act to reinforce exit barriers, real or imaginary. While employers may rue the cost of developing staff who subsequently move on, there appears to be a strong downside linked to the retention of staff who develop strong feelings of immobility (continuance). This downside includes negative influences upon acceptance of personal goals and effort directed at achievement and innovation, and, in the longer term, the cost of managing 'trapped' employees out of the organisation.

Managers seem to be faced with a virtually intractable situation. Unpredictable business environments create the need for rapid, decisive and often large-scale responses. These responses often lead to an air of job insecurity which was identified here and elsewhere (Bommer and Jalajas, 1999) as a negative predictor of propensity to innovate. Yet, innovation, in the broadest sense, is a substantive component of the efforts required to maintain or recover organisational competitiveness. Continuing research into how the delicate balance of maintaining commitment in a climate of insecurity and uncertainty would appear to present a major challenge to practitioners and researchers.

A further practical outcome is to offer a fresh operationalisation of commitment for use by organisational researchers. While further work is needed before the new commitment scale is likely to be widely used, if our understanding of commitment is ultimately developed by this study the practical utility to human resource managers will be substantial.

## 10.5 REVISITING THE LIMITATIONS

Chapter 5 discusses the limitations of this thesis that were apparent at the time the survey was designed. This section exposes the limitations that I am aware of with the benefit of hindsight having conducted the analysis and elaborated upon the findings from the survey. In light of the differences identified among the 3 professional groups, greater congruence between the choice of participants in the exploratory interviews and the questionnaire survey could have been achieved. This could have prompted the construction of better scale items, but I do not see this as a fundamental weakness as the work experience of interview participants was broad enough to initiate the reconceptualisation. Although the new organisational commitment scale shows acceptable psychometric properties, a larger item pool should have been generated following the exploratory interviews. It is possible that pilot testing of a larger pool of 30-40 items would have yielded a final set with better face validity and showing stronger correlations among latent factors.

In research of this kind, the practicalities of questionnaire research impose a low limit on the number of variables that can be measured and the investigation is vulnerable to the omission of influential variables. Turning to the survey questionnaire itself, if some assessment of career stage had been obtained, then this would have helped to understand how commitment develops. Although age and tenure were obtained, they serve only as proxies for the development of a person's career. Another simple variable that would have assisted the interpretation of results is the respondent's position in the managerial hierarchy as this could have been used to explain patterns of commitments to various foci and may have had a moderating effect.

Method bias pervades all social research and greater care could have been taken to control and assess its effects here. The questionnaire used was the same for all respondents and yet systematic response bias could have been controlled if three or four different random sequences of the variables used had been created and incorporated into different versions of the questionnaire. This would have minimised any systematic response patterns that one particular sequence of variables might have suggested to respondents. Other sources of

method bias may have arisen from respondent traits which could have biased the observed correlations. These include negative affectivity, which measures negative emotion and perceptions, and social desirability, where respondents seek to respond positively against perceived norms and standards. In a test of how positive and negative affectivity influences commitment, Williams and Anderson (1994) found that, for technical professionals, positive affectivity weakly influenced commitment whereas it was not influenced by negative affectivity. Most important, the effects had little impact on parameter estimates. Doty and Glick (1998), however, show that, in some studies, method bias does shift observed correlations beyond the confidence limits of their true value. In view of the survey design adopted in this study, the actual method effects remain unknown.

It is reasonable to assume that professionals would be less vulnerable to misreporting due to positive and negative emotions since their roles imply the display of objectivity and control over emotions and this could have influenced the findings of Williams and Anderson (1994) given that their sample comprised professionals. In a single organisation study, there could be a danger of an unidentifiable method effect acting in a consistent way, arising perhaps from the 'selected setting' hypothesis (Schneider, 1983) which maintains that organisations tend to retain people of similar disposition. While all respondents completed the same questionnaire in this study, the 633 respondents were most likely drawn from around 200 different organisations and so the occurrence of a persistent biasing effect is less likely. Furthermore, like much organisational research, the study has sought to assess the broad relationships between constructs. Method bias will influence exact relationships but, unless the effects are particularly strong, they should not influence the broad magnitude of relationships that exist between variables. Lastly, one approach to determining method bias effect sizes involves the use of multiple methods in a single study. This was not a feature of this research although the use of multiple measures of commitment helps to raise confidence in the findings when two or three measures of a construct detected the same effect. The final caveat to acknowledge is that the propositions were tested using cross-sectional methods and so the findings can only be treated as suggestive and indicative of the work psychology of corporate professionals.

## 10.6 SUGGESTIONS FOR FURTHER RESEARCH

This study has supported the value of assessing multiple commitments and further research on commitment should take a more holistic view of the commitment profiles and not single commitments which are too often the focus. Further work could usefully be directed at the development of a multi-dimensional measure of work commitment and this would require a reassessment of the ways commitments to different foci are expressed. Commitment theory would then benefit from being able to examine antecedent effects on patterns (profiles) of work commitment and how the profiles are themselves antecedent to presumed outcomes of commitment at work. This question needs to be asked of diverse occupational groups as this study suggests that a universal operationalisation has limited utility and may produce misleading conclusions when transported across work settings. The relationships among attitudes and behaviours that are indicative of commitment need to be further explored using qualitative research as a precursor to further construct validation attempts.

Given the frequency with which commitment is treated as an independent or dependent variable, it is important that any new measure is carefully and extensively validated prior to its widespread use. Additional development of the measures of organisational commitment could usefully employ semantic differential response formats which are widely used in attitude-behaviour research and which could give an expanded picture of how people view their jobs compared to the agree-disagree response format of Likert-type scales (e.g. see Bagozzi and Kimmel, 1995). Further work is needed to develop the symmetry of the behavioural scale and to assess its relationship with the climate for, and the determinants of, innovation, such as job challenge and the spirit of unity and co-operation, which are two of the eight environmental stimulants to creativity proposed by Amabile and Gryskiewicz (1989), organisational climate (Burnside, 1990), relationships at work and the nature of work itself (King, 1990; Payne, 1990; West and Farr, 1990) and team climate (Kivimaki et al., 1997). This work should take into account Ekvall's (1997) notion of two kinds of innovative behaviour (radical and adaptive) that are differentially related to organisational conditions and climates. Incorporation of personality variables

would help to develop a knowledge of the way commitment is related to personality and help to understand whether there are personality types disposed towards giving commitment and types disposed against giving it.

Further validation of the new scale should involve testing alongside the seminal OCQ and with scales that embody the concepts of achievement and innovation such as the Citizenship Behaviour scale (Smith et al. 1983) and Bateman and Crant's (1993) Proactive Behaviour Scale. In conformance with a multi-trait, multi-method approach, independent ratings of commitment could be obtained from the line manager and/or colleagues using a slightly modified version of the new scale in an effort to extend the validation study. Further construct validation should also include a measure of social desirability, for example, the Marlowe-Crowne Social Desirability Scale (Crowne and Marlowe, 1960).

While independent ratings of behaviours are a common goal of validation studies to minimise method variance, there is a considerable literature on the inability of judges to agree about the characteristics of other people. This danger would be a limiting factor to any study that attempted to externalise ratings of commitment. A supervisor's rating of the commitment of others is not truly independent since it arises from perceptions formed through prior contact and could easily reflect the supervisor's prejudices or agenda in the organisation. Indeed, even the achievement of inter-rater agreement does not imply accuracy as it may reflect a common bias on shared stereotypes (see Senior and Swailes, 1998; Sundvik and Lindemann, 1998). Perhaps the way forward is not to seek independent, multiple, methods of scoring variables but is, more practically, to seek 'minimally dissimilar methods' (Doty and Glick, 1998, p.401). Even so, if statistical tests for moderator effects are to be applied, then large and heterogeneous samples are required that generate multivariate normal data and such requirements pose practical obstacles to the use of diverse measurement methods in the same survey.

In continuation studies looking at the role of social exchange, the social exchange scale could be replaced with the Equity Sensitivity Instrument (King and Miles, 1994, pp.138-139). This instrument correlates in the expected direction with the social exchange scale

used in this study and with the OCQ, although it does present some difficulties of its own. First, the scale scores show that, on average, respondents report about equal amounts of benevolence (giving to the organisation) and its opposite (taking from the organisation) and this could be a consequence of its ipsative structure. Ipsative scales (ie. where respondents' scores sum to a constant value) also present major difficulties when they are subjected to statistical analyses (Baron, 1996; Closs, 1996). The item wording of the Equity Sensitivity Instrument also contains little variety and it is perhaps all too clear what the instrument is trying to measure.

The literature reviewed for this thesis pointed to a sizeable interest in the effects of downsizing on groups and individuals (see Shaw and Barrett-Power, 1997, and Kozlowski et al., 1993, for reviews). The thrust of this research appears to focus on the effects of downsizing as it is occurring, or shortly after it has occurred, on a workforce including those laid-off and those who survive with the organisation in some capacity. Researchers do not appear to have looked at the specific question of how involuntary job loss affects work-related attitudes when those affected re-join the workforce. This study has hinted at some intriguing differences in commitment among people who have, at one time, been laid-off and the research reviewed by Fineman (1983) and Winefield (1995) offers a sound starting point for more detailed work on this large section of the workforce.

In view of the attention given to professionalism as a desirable trait (see chapter 4), the research literature seems to need a fresh measure of the construct. It is apparent from this research that the most widely used scale (Hall, 1968; Snizek, 1972) is not without its limitations (Bartol, 1979; Kennedy and Ramsey, 1995; Morrow and Goetz, 1988). In particular, some subscales tend to show marginal data reliability and the correlations between some of the subscales is low. The argument that the new employee relations climate has affected the nature and form of commitment may well apply to professionalism. Such changes as have occurred need to be incorporated into a fresh evaluation of the construct.

## 10.7 SUMMARY

This chapter has drawn together the conclusions of the study and the contribution made to understanding commitment in organisations. In the past 30 years, few conceptual breakthroughs have occurred in the commitment domain beyond the realisation of multiple constituencies which led to the recognition of profiles of commitment (Becker, 1992; Becker and Billings, 1993; Coopey and Hartley, 1991; Reichers, 1985, 1986). Given the weight of literature that assumes that commitment is central to successful human resource management, it is overdue that researchers should revisit some common-sense linkages, for example, that commitment and performance appear to be highly related. When empirical research consistently points in another direction, then researchers must ask fundamental questions about their approaches to the topic and they must challenge the way its component parts are conceptualised. Such is the case with commitment, and it is time to look at it in a new light. The next breakthrough will occur when the essence of organisational commitment is substantially reinterpreted and a new operationalisation is produced that is acceptable to researchers and practitioners. This study has shown that the reassessment should involve a review of the inter-relationships among a set of concepts including pro-social behaviours, innovation, effort and attitudes towards the organisation with the intention of bringing about redefinitions of the fundamental meaning of these concepts. This study has begun that process through the creation of a behavioural commitment scale and further construct validation is necessary.

Having spent about 6 years on a quest to find the meaning of commitment, I have not shed my initial conviction that, in a post-modern, post-industrial age commitment in organisations is a life-force that is crucial for the success of strategic initiatives in turbulent business environments. This study has made its contribution, but the commitment arena is so vast that it is impossible to see all the players at one time. Short of a major study involving research teams, multiple methods and longitudinal studies, our understanding of the plot will continue to be fragmentary. After the journey undertaken for this thesis, I am reminded of the words of T. S. Eliot

We shall not cease from exploration
And the end of all our exploring
Will be to arrive where we started
And know the place for the first time.

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# APPENDIX A. REFLECTIONS AND SELF ASSESSMENT

## REFLECTIONS ON THE RESEARCH PROCESS

In this appendix I move away from commitment to consider some general points about research and my professional development. One learning point that I take from this thesis concerns the overall design employed. It is clear to me now that when a set of variables is operationalised and combined in the manner of the main quantitative survey, it is clearly necessary to include variables only in response to substantive *a priori* theorising. Apart from the fact that this is a component of good practice, there is an obvious practical benefit - interpretive research has the advantage that the researcher enters into it facing the prospect of finding multiple stories to develop. Yet the positivist researcher armed with hypothetico-deductive method seeks to substantiate one story in particular. If some aspect of the survey should go awry, for example, an instrument shows unacceptably low reliability, then the researcher has limited freedom of movement to develop the story without embarking upon another study.

Another disadvantage of positivist, quantitative methods now clear to me is that the focal variables in a study of this kind can only represent a small part of the total network of variables that could be operating and which could be linked together through theory. Despite these limitations, I remain an advocate of this general methodology due to what I consider to be some equally limiting characteristics of interpretive research, namely the problems of convincingly dealing with reliability and validity. The choice of research design should, as always, be made in the light of the ways that research questions are phrased and take account of the resources available to the researcher.

I have also come to believe that researchers need to balance the integrity and rigour of their methods with the utility of the topics that they investigate. In the early stages of this study I was, on reflection, overly concerned with a perceived need to make extensive use highly complex methods of analysis. I can now see how the study of management, and other

disciplines, can be advanced so long as researchers use realistic but also strong and robust research designs on interesting and worthwhile problems. The techniques of factor analysis and multiple regression, for instance, have been known for almost 100 years, and so there can be no longer any special plaudit for those who master them, particularly given the availability of *Windows* software packages. These analytical techniques need to take their place as servant, not master, of the research process.

Do I offer the findings of this research as a contribution to knowledge? The answer has to be yes, but with the recognition that knowledge is not an unequivocal, objective entity. It is, instead, socially constructed and shaped by history (Feyerabend, 1975; Kuhn, 1970). In the case of commitment, these are represented in the tradition of research in the field and the assumptions surrounding what has previously been accepted as knowledge. I was also attracted to the idea of 'falsification' when testing propositions (attributed to Popper, see Hollis, 1994, p.72). Some of my propositions were falsified as it is now possible to see that they did not hold-up in this study with its unique sample and its particular analytical methods. Other propositions were not falsified despite being robustly tested. Perhaps the next researcher to investigate the meaning of commitment and its nomological net will falsify my propositions, but that is always a possibility that faces the deductive researcher. Thus, in so far as this research is accepted by a community, such as those who read *Human Relations* or the *Journal of Occupational and Organizational Psychology*, or who attend management conferences, then it becomes, at least for a while, a contribution to understanding and to discourse and thus a contribution to knowledge.

It is also apparent to me that, in social research, the analytical and explanatory power of both qualitative and quantitative methods falls some distance short of the power needed to provide unequivocal explanations of social phenomena. I can now see that this is essentially the position taken by Schmidt (1992) who felt that inadequate research methods were holding back the development of psychological theory. I imagine this is also true of the natural world, where physicists strive to understand the ultimate structure of matter but do not yet possess the equipment to capture and study all of the theorised sub-atomic particles in the way they would like to. The social research community should not be too

disenchanted with this situation because, so long as researchers pose theory-driven or theory-generating questions, use sound and reliable ways of collecting data and analyse the data using sophisticated techniques then much worthwhile work can be done.

## WHAT MAKES THIS A Ph.D?

I have been looking forward to writing this section of the thesis, often wondering what could be said to give the work a final flourish. Throughout the course of the study I found it hard to get a clear picture of the requirements of, and assessment criteria for, the degree of Doctor of Philosophy and this gave rise to some sporadic self-doubt about the nature of the work that I was producing. Was it enough or was it too much? I always took the opportunity to ask other Ph.D. candidates how they dealt with this dilemma and this proved to be therapeutic as I quickly realised that I was not alone with my fears. Over time, these soundings led me to believe that the work I was doing was at least comparable in level and style that others were achieving. I then had the good fortune to attend a conference on graduate education in the summer of 1997 and was intrigued to attend a paper in which two experienced Ph.D supervisors presented their ideas for assessment criteria for a Ph.D. (Green and Shaw, 1997). Their ideas were well-received at the time and are summarised below. Readers are asked to note that not all of their criteria were intended to reflect practice at any particular university or to apply to all theses, rather, they represent

> A comprehensive and holistic solution which could span all subject disciplines [and] research paradigms.

Green and Shaw's (1997) criteria are summarised below (in bold) together with my explanatory comments.

***Ability to set, negotiate and meet own objectives and deadlines..with a high level of autonomy.*** All the objectives and deadlines in this study were set by myself, with the supervisor's approval, from the initial conception and incubation of the initial topic, organising pilot studies, reviewing literature, organising the main survey, analysing results and writing-up.

***Able to communicate effectively..and consistent with research in the chosen cognate area, for the production and defence of an extended academic thesis and for a wide range of presentation and publishing goals and targets.*** I submit that the style of this thesis is consistent with work in the field of organisational psychology and is consistent with the standards required for publication in leading academic journals.

***Able to interact sympathetically and ethically with individuals and groups..with accurate notions of the precise impact of themselves on the setting in which they are operating.*** The initial exploratory study was organised wholly by myself, arranging and conducting interviews in organisations. Negotiation with professional bodies for the postal survey was also initiated by the author and conducted without incident.

***Ability to carry out a complete search, critical review and appraisal of all literature and primary sources of relevance to the research study.*** This is particularly in evidence in chapters 2-5 and chapter 9. I am now conscious, however, that the reviews could have been more tightly focussed around the commitment of scientists and accountants. This would have sharpened my focus on commitment as applied to particular groups and would have minimised some confusion brought about by conflation of ideas arising from studies across diverse groups. The difficulty with doing so is that some findings among studies of non-professionals may be valid when applied to professional groups and so a wholly delimited review may have missed some important concepts. Nevertheless, I feel that some sharpening of the initial phase would have been achieved and this is a learning point that I will take forward into future projects.

***Able to devise and design novel methods and instruments for application in novel***

***situations and/or contexts with a clear and critical perspective on the levels of reliability and validity achieved.*** This has been a major thrust of the thesis and the need for a radical overall of commitment theory was one of my concerns having appraised the literature.

***Knowledge and understanding of theory, methods and strategies in the specific and related field of study.*** The general research design employed here is embedded firmly in the traditions of the discipline. I am, however, conscious that there are alternative methods available that could have been more widely applied, in particular, structural modelling. Given that most of the regression models tested were relatively simple, the general use of MMR is sufficiently powerful and is currently used in emerging reports of studies into moderator effects.

***Analyses problems objectively using critically evaluated novel (or extended) theoretical perspectives.*** The boundary of commitment theory has been extended by the critical approach taken to existing commitment theory and by conducting this survey on samples of British professionals.

***Applies knowledge, theory, methodology and strategies in rational and valid ways, demonstrating experimental rigour in identifying solutions to complex and significant problems.*** Chapters 5 to 8, in particular, provide evidence for this criterion.

***Critically evaluates outcomes and relates them to existing knowledge structure, theoretical perspectives and methodologies suggesting further topics for research.*** Evidenced in Chapters 9 and 10.

***Displays originality and/or novelty in most of the following; the topic/focus of study, development and application of new methods or instruments, application of existing instruments to new or original contexts, development of new knowledge or theoretical insights, new attempts to question and re-examine earlier work, opens up new areas for fundamental and significant research.*** I contend that the topic of study was tackled from a critical perspective, that a new measurement instrument was devised, that existing

instruments were applied in novel combinations, that a fresh theoretical insight has emerged, that earlier work has been critically re-assessed and that new areas for research have been proposed.

An additional criterion[1] is that the volume of the work achieved should be what a 'diligent' person working alone is capable of achieving in three years full time. Given that this thesis was undertaken by part-time study and completed and written-up in a little under six years, I contend that the volume of work achieves the threshold required.

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[1]Private communication from Professor David Gilbertson, December, 1998.

## PUBLICATIONS BY THE AUTHOR

Publications by the author in the field of industrial and organisational psychology, and which are based on empirical research, are listed below.

Swailes, S. (1999). The Reconceptualisation and Measurement of Organisational Commitment. Working Paper delivered to the *British Academy of Management Conference*, Manchester, September.

Swailes, S. and McIntyre-Bhatty, T. Limitations of Cronbach's Alpha: Ipsative Scales and Informatic Replacement. *Educational and Psychological Measurement*, accepted for review, July 1999.

Swailes, S. and Senior, B. (1999). The Dimensionality of Honey and Mumford's Learning Styles Questionnaire. *International Journal of Selection and Assessment*, 7, 1, 1-11.

Dawes, J. and Swailes, S. (1999). Retention sans frontieres: issues for financial retailers. *International Journal of Bank Marketing*, 17, 1, 36-43.

Senior, B. and Swailes, S. (1998). A Comparison of the Belbin SPI and Observers' Assessment Sheet as Measures of Individual Team Roles. *International Journal of Selection and Assessment*, 6, 1, 1-8.

Swailes, S. (1997). Monetarists, Environmentalists and Achievers: job satisfaction in local government. *Local Government Policy Making*, 23, 4, 32-38.

Swailes, S. and Senior, B. (1996). Looks Good, Feels Good but.. *Proceedings of the British Academy of Management Conference*, Aston University, September. (Refereed Paper).

Swailes, S. (1995). Organisational Commitment: Do Organisations Deserve It? Working Paper delivered to the *British Academy of Management Conference*, University of Sheffield, September.

Knibbs, J. and Swailes, S. (1992). Implementing Performance Review and Career Planning: Part 1. *Management Decision*, 30, 1, 49-53.

Knibbs, J. and Swailes, S. (1992). Implementing Performance Review and Career Planning: Part 2. *Management Decision*, 30, 2, 30-34.

# APPENDIX B. THE HISTORICAL DEVELOPMENT OF THE PROFESSIONS

## Historical Context

The professions have played a crucial role in the development of British society and the organisation of work since pre-industrial times (Earle, 1989) and the earliest professions are generally accepted to be the high-status groups representing Divinity, Medicine and Law (Elliott, 1972, p.14; Reader, 1966, p.1). In the early years of the industrial revolution, new professions were forming to build upon the growing specialist knowledge areas of chemistry, engineering and accountancy amongst others. (Pollard, 1965, p.107). These embryonic professions were quick to form professional organisations as the civil, mining and railway engineers had done by the early nineteenth century.

The development and organisation of the professions appear to be primarily Anglo-American having less significance to other developed economies (Child et al., 1983; 1986). In Britain and America, occupations have mounted their own campaigns for recognition and protection whereas in Europe the state has been more active in organisation of training and employment (Friedson, 1994, p.18). The contribution of the professions to economic development is unclear as Child et al. (1983) linked the characteristically British approach to manufacturing organisation to poor economic performance through a weakening of the technical competence of line managers arising from the tendency to group technical specialists away from production. McCormick (1985; 1986) has challenged this view, however, arguing that a more influential problem is the provision of education and training to the workforce in general.

Structurally, three broad types of profession can now be identified (King, 1996). The independent/liberal professions include doctors, lawyers and architects who organise themselves in a collegiate fashion such that they are ultimately answerable to a professional body, for example, the General Medical Council, in the event of malpractice or misconduct. Their knowledge base is universally applicable and entry to the profession is carefully regulated. The independent practice partnership typifies the organisational form

in which independent/liberal professionals carry out their work although many are employed elsewhere, for example, in the National Health Service. Second, there are the 'organisational professions', comparable to the more recently developed 'occupational professionals' (Elliott, 1972, p.32) which include general managers and administrators who typically work for public or private sector organisations. Their knowledge base is localised and political in contrast to the systematic and highly structured knowledge base used by the independent/liberal professions. While professional bodies exist for these groups, such as the Institute of Management, membership of such bodies is not a requirement to practice in the profession and nor would the professional body be involved in regulating a member in the event of malpractice. Indeed, in the case of management, most managers are not members of a professional body. The third group comprises accountants and research and development scientists, among others, who constitute a class of knowledge workers who depend upon a highly structured knowledge base and who rely upon membership of an appropriate professional body in order to gain status and to enable successful job mobility. Membership of a professional body is important for knowledge workers as expulsion from the professional body would make it difficult for an individual to hold a senior position in the field. They normally work in, and for, a manufacturing or service organisation, as opposed to a professional practice. .

**Understanding Some Key Terms**

For clarity throughout this thesis, a distinction is made between the terms, profession, professionalisation and professionalism. The earliest writers on the professions generally saw a profession as having a set of well defined characteristics and it follows that professions would have a tangible form and presence. Parsons (1954, p.38) saw 'superior technical competence' as one of the defining characteristics of professional status which brings about the professional's authority over others. Hall (1969, p.74) saw the attributes of a profession as: a developing knowledge base; a training and education process; a code of behaviour and ethics; and norms concerning membership of a professional body. Turner and Hodge (1970, p.26) also recognised the importance of a knowledge base to professions

and the organisation of the profession. They also identified related dimensions concerning the occupation's degree of monopoly over its activities and the amount of external recognition given to it. The higher the monopoly and the recognition then the nearer the occupation is to being a profession in their view. Harries-Jenkins (1970, p.58) proposed six dimensions for professions including ideology which embraces individual personality, involvement, and a sense of group identity. Torres (1991, p.56) also considered professionals to display an ideology (set of values) shared by members concerning behaviour and ethics. Friedson (1973, p.31) believed that professional ideology is grounded in commitment to the value of the work undertaken and it is the ideology of professionalism at the level of the individual, rather than the profession, with which this thesis is concerned.

The recurring characteristics in the descriptions of professions are: a developing knowledge base; a training and education process; a code of behaviour and ethics; norms concerning membership of a professional body; the occupation's degree of monopoly over its activities; and, the amount of external recognition given to it. For the high-status professions, these characteristics are well-developed but the idea that a group would somehow achieve professional status when these characteristics were achieved was recognised some time ago as being illusory. Both Harries-Jenkins (1970, p.55) and Volmer and Mills (1966, p.vii) suggested that it is better to acknowledge, for a given occupational group, that certain characteristics of the ideal type profession may be present to a greater or lesser extent and view occupations upon a professional continuum rather than with a professional-nonprofessional dichotomy. However, even though attempts to list the traits exhibited by highly developed professional groups can be considered illusory (Macdonald, 1995, p.3), the traits nevertheless provide a useful metric with which to assess potential sample groups for the degree of professionalisation that they have achieved.

This traditional and largely objective view of professions as having a set of characteristics raises the question of how can the extent of professionalisation of an occupational group be determined? Torres (1991, p.56) developed a schema that fits with other views of professions by postulating a two dimensional matrix for classifying occupations. The two

dimensions were complexity of knowledge and perceived criticality of knowledge to social welfare (Torres, 1991, p.48). The four quadrants were labelled; professional, scientific, free-market and technical. Professions were those occupations, for instance, doctors and lawyers, plotting high on both axes and 'Scientific' occupations scored high on complexity of knowledge but low-moderate on perceived criticality of knowledge. While this is a useful schema for classifying occupations it is by no means flawless. Torres sees the doctor as professional and the zoologist as scientific (1991, p.50). While the surgeon has an immediate impact on criticality for the patient, the scientist, perhaps a biochemist, works on longer term problems of concern to society rather than the immediate problems facing individuals. In the long run, the biochemist's research could have major impacts on societal welfare through the development and marketing of new drugs. The surgeon and scientist are more investigative and concerned with developing a body of knowledge. In contrast, accountants and lawyers tend to interpret knowledge in repetitive situations. Using Torres' schema, an accountant is arguably nearer a technician than a professional as is the teacher for whom the complexity of knowledge used is moderate compared to the surgeon or scientist. Furthermore, is the knowledge used by accountants and lawyers high in terms of perceived criticality to social welfare? The fact that their services are required by Statute is strongly indicative that it is, yet in many instances their services are used for the commercial gain of organisations through the self-interested pursuit of profit or other gain. It does not necessarily follow that the whole of society benefits from the achievement of these pursuits as the strategies used to achieve them can involve the laying-off of employees and despoiling of the green environment. Another problem is Torres' use of uni-dimensional axes. While complexity of knowledge, a recurring theme in the identity of any profession, is easy to conceptualise and use to compare different occupations, the criticality of the knowledge to social welfare is more problematic. This axis is better seen as multi-dimensional as it could embody indicators such as; the amount of societal regulation, benefits to individuals in the short-term, benefits to individuals in the long-term, benefits to organisations (excluding provision of statutory services) and societal support (for example, government, private and charitable funding for research).

The process by which an occupational group adopts the trappings of professional (professionalisation) has also been viewed as a professional 'project' (Friedson, 1973, p.22; MacDonald, 1995; Wilensky, 1970). Professionalisation can also be used to describe the extent to which a group has achieved professional structures and status, that is, their degree of professionalisation. The process of organisation that takes an occupational group from one state, without the characteristics of professionalisation, to another having professional characteristics involves the management of a body of useful and complex knowledge used for the benefit of serving a market. Holders of the knowledge organise in such a way that the knowledge is controlled and disseminated in a way that leads to control over the market. The Weberian concept of social closure is tied in with the study of occupations seeking professional status, since closure brings about the profession's control over the delivery of services and is the successful outcome of a professional project (MacDonald, 1995, p.32). At an extreme, professions achieve closure through achieving a monopoly on their services. Medical practitioners are registered and licensed for the practice of medicine, for instance. The professions that have achieved closure by registration represent occupations that could inflict bodily harm upon their clients, including medicine and pharmacy, or where significant financial loss could occur, as with solicitors and patent agents (MacDonald, 1985). Other occupations have sought registration only to be denied by parliament, engineering and accounting among them  Despite the presence of established professional bodies, these occupations were impeded by the heterogeneity, as opposed to homogeneity of client needs, the reality that a wide range of practices of varying skill and knowledge content are used in society and some discontinuities in the national level of organisation in those professions (MacDonald, 1985).

The term 'professionalism' is also used to refer to the degree of professionalisation that an occupational group has achieved. Crompton (1990, p.152) for instance, referred to professionalism

> 'As a process, a form of occupational development in which occupations strategically acquired professional traits on their way to becoming full professions'.

For the purposes of this study, however, the term professionalism is used to describe Hall's professional ideology which can be assessed and measured at the level of the individual professional. Professionalism, according to Hall (1968, p.78), is 'the ideology found...in the process of professionalisation', and an important observation for this research is that

> 'Structural and attitudinal aspects of professionalisation do not necessarily vary together.. established professions may have weakly developed professional attitudes while weakly developed professions can have strong attitudes'. (Hall, 1968, p.103).

Hall suggested that this could be explained via the socialization processes involved in training programmes and the societal importance of the work.

One of the features of commitment research among professionals is that researchers have used lose definitions of what constitutes a profession. Having chosen a group to study, a broad assumption is made that all members of the group studied display equal levels of professional identification and professionalism. Dentists, nurses, social workers, general practitioners, industrial salespersons and teachers are among the many groups conveniently tagged as professionals for the purposes of academic research. The status of some of these groups as professions is debatable but more germane is the implicit assumption in such studies is that all subjects in the sample display the same professional attitudes and behaviours which are assumed to be constant while other variables are studied. Although this concerned Ritzer (1972, p.53) and Kerr et al. (1977, p.342) relatively few studies have examined professionalism at the individual level as a possible explanation of relationships between variables (e.g. Bartol, 1979). This is perhaps explained through Ritzer's (1973, p.60) concern that sociologists have ignored the question of what differentiates professionals from nonprofessionals. There is also the possibility that subjects not considered professionals may engage in professional behaviours (Welsch and LaVan, 1981, p.1082).

Among the earliest attempts to measure professionalism was Hall (1968) who considered that the construct consisted of five components; use of the professional organisation as a major referent, belief in public service, belief in self-regulation, a sense of calling (professional commitment) and a feeling of autonomy. Kerr et al. (1977) and Beneviste (1987) each proposed six characteristics of professionalism with the main difference to Hall's scheme being the possession of advanced education or training leading to the application of skills or knowledge. Blau (1988) suggested that each of the six dimensions identified by Kerr et al. (1977) needed to be present in 'true' professionals. If one or more dimension is absent then Blau considered the individual to be following a vocation rather than a profession. Hence studies of professionals could usefully examine respondents' self-perceptions of their own professionalism rather than assume that highly developed professional attitudes and behaviours occur simply on the grounds of occupational grouping and some conceptual and empirical work on professionalism scales exists (Bartol, 1979; Hall, 1968; Haywood-Farmer and Stuart, 1990; Kennedy and Ramsey, 1995; Lachman and Aranya, 1986; Snizek, 1972). An important question remains for the choice of sample, however, namely, what is the minimum level of professional characteristics below which a measure of professional ideology would be no longer useful? This might be viewed as a threshold of training and practice development for context specific skills that needs to be achieved before a professional can be considered mature.

The discussion in chapter 4 relied upon the premise that occupational groups undertake a professional project and, at a point in time, will therefore be at a particular stage of professionalisation. Implicit in this view is an ultimate end point, perhaps exemplified by the several characteristics of high-status professions. This traditional view is being accompanied now by a more fluid view in which professionalisation is, 'a shifting rather than a concrete phenomenon' (Hanlon, 1998, p.45). By the late 1960s, sociologists had rounded on the idea of the functionalist view of professions which involved a search for distinctive traits very much in keeping with how the professions wanted to be seen, (Greenwood, 1957, Merton, 1982). Furthermore, the role played by professions was being questioned as Crompton (1990, p.153) observed, the professions, 'were seen to be occupations on the make' who had used their knowledge base and structure to maintain

# APPENDIX C JOB ACTIVITIES OF SAMPLE RESPONDENTS

This appendix provides an illustration of a typical job role that might be undertaken by members working in the sectors surveyed in this research. While the illustrations are highly generalised, they serve to portray the scope and content of the work and help to contextualise the research study. In each case, information was provided by a member of the relevant professional body with experience of the sector concerned.

## CIMA

The typical CIMA member in the pharmaceutical industry will be involved in the preparation of budgets for particular product areas (product costing), long term forecasts for areas within a corporate plan, and annual budgeting. They are likely to produce monthly operating statements that compare actual and expected financial performance in a product area. They are also involved in pricing for particular markets, the pricing of new products, and the costing of capital expenditure.

The typical member is likely to manage a group of staff who, between them, monitor wages, salaries, purchases and the sales ledger, and would report to a financial controller or director. They will work closely with production managers who are likely to be chemical engineers or pharmacists. Contact with other staff is also necessary to enable the costing of research and development, for example, determining which costs can be attributed to the profit and loss account and which can be attributed to the balance sheet.

## CIPFA

Most CIPFA members are employed in local government and are typically involved in the financing of social services, education, leisure and housing. The core job level would be that of Principal Accountant with a salary in the region of £30,000 p.a. and requires an

understanding of both legislation and public sector financing. Many CIPFA members, however, move into senior management roles with strategic responsibility at management team level. Much of their responsibility is 'middle level' budgetary control, for example, overseeing the accounts for an area such as social services. Most of their work would be within their organisation, often liaising with people at similar levels in the service area for which they have responsibility, e.g. education, and with their counterparts in other councils. People who achieve CIPFA qualifications tend to stay in the public sector although they may move around within it, perhaps from the National Health Service to local government. They normally have line management responsibilities, perhaps for around six staff, who look after the budget for a particular service area. The Principal Accountant supervising such a group would normally report to a member of the senior management team who, in-turn, may report to a county treasurer.

## ROYAL SOCIETY OF CHEMISTRY

Chemists in the pharmaceutical sector are likely to be either engaged in research and development (R+D) or involved in the running of production plant. Those involved in R+D are less likely to be involved with top management and may spend considerable amounts of time working individually on focused research projects. Multi-disciplinary team work, however, is widely used. and there is now a strong emphasis on working with internal and external customer groups at various stages of project development. Project are typically aimed at developing new chemicals for the treatment of human and animal conditions and for agricultural uses. Many chemists are post-doctoral researchers with highly specialised knowledge of analytical equipment and techniques or are specialists in the chemistry of particular biological systems. The first major step into management is often as a project leader or section leader, managing the activities of other highly qualified people. Other early management roles include the extensive co-ordination of product trials, often on an international scale, when products reach advanced stages of development.

## APPENDIX D EXPLORATORY INTERVIEW SCHEDULE

The following semi-structured interview questions formed the basis of discussions on topic of the commitment of professionals.

- What are the characteristics of a committed person compared to a less committed one?

- What actions has this organisation taken recently that might have positively or negatively influenced employee commitment?

- Is commitment to the organisation itself still something we can expect from employees?

- In order to be seen as committed, do employees (professionals) have to be committed to the organisation itself? What else could their commitment be to at work?

- Is high employee commitment dependent on employees believing the organisation is committed to them, that it supports them?

- Do organisations need employee commitment to be successful? (What do they lose if employees are not committed? What might be lost if a committed person reverts to being less committed?)

- Does it matter why people appear committed at work, e.g. for financial gain, for status gain, because they really believe in the organisation?

- To what extent is commitment about conforming to the way things are done in the organisation? Would an employee be seen as not committed if he/she did things differently to his/her manager?

- How do professionalism and commitment relate to each other, if at all? Does being a professional necessarily involve high commitments to the organisation?

# APPENDIX E SELECTION AND PILOTING OF ATTITUDE SCALES

## REVIEW OF MEASUREMENT SCALES

A review of commitment research by Griffin and Bateman (1986, p.171) noted that 'the methodological foundation of organisational commitment research has been the cross-sectional survey', and (p.172), 'most research has used zero order correlational or multiple regression approaches to demonstrate direct or 'main' effects'. While not intended as compliments due to the inability of cross-sectional research to confirm causality, their remarks point to common practice in organisational research that balances a desire for idealised research designs against practical considerations. An idealised research design would involve a longitudinal study and the use of different ways of measuring the variables concerned.

There are several reasons why piloting of the survey instrumentation is required. First, many of the potential instruments were developed and validated on North American samples and it is important to establish their reliability and validity on a British sample. Second, the new psychological contract may have lowered the reliability of one or more instruments. Third, several instruments exist for some of the variables of interest and it is important to select the most appropriate for this research.

## MEASURES

This section reviews previous attitude scales used in commitment related research as a prelude to selecting the most suitable scales to use in this study.

### Professionalism

Some researchers have classified employees as professionals based on job title (Mathieu

and Hamel, 1989). Such an arbitrary distinction does not measure with sufficient clarity the attitudinal or ideological professionalism shown by an employee or the employee's perceptions of their professionalism. According to Bartol (1979) arbitrary measures may account for some of the disparate research results involving professionals. To overcome this limitation a professionalism scale was used to measure the extent to which an employee identifies with professional attitudes and ideology. Unlike commitment which has several established measures which have been used in studies of commitment as an independent or dependent variable, scales for professionalism are less well developed.

Bartol (1979)

Developed a scale based heavily on Snizek's (1972) re-evaluation of Hall's (1968) 50-item questionnaire. Her scale of 20 items addressed 5 sub-scales; personal autonomy, professional commitment, collegial standards, professional ethics, and professional identification. Intercorrelations between sub-scales were low and split-half reliabilities were above 0.75 for all sub-scales.

Snizek (1972)

Re-examined Hall's (1968) 50-item scale and found half to adequately load onto their theoretical dimension (p.111). Dropping unreliable items did not substantially alter scale reliability. Five sub-scales were retained and the highest loading items together with factor loadings are given below.

Profession as referent - item 1(0.56), 6 (0.58), 16 (0.55), 26 (0.52), 36 (0.54). This sub-scale is the same as Bartol's Professional Identification sub-scale. Belief in public service -item 2(0.68), 7(0.55), 12(0.47), 17(0.70) 47(0.63). This sub-scale is Bartol's professional commitment sub-scale. Self-regulation - item 8(-0.57), 18(-0.45), 33(-0.68), 43(-0.67), 48(-0.60). This sub-scale is Bartol's Collegial Maintenance sub-scale. Sense of Calling - item 9(0.50), 14(0.45), 24(0.42), 39(0.23), 49(0.29). This sub-scale is Bartol's Ethics sub-scale. Autonomy - item 5(0.71), 15(0.64), 40(0.55), 45(0.71), 50(0.66). This sub-scale is Bartol's autonomy sub-scale.

Snizek was concerned (p.112) with the wording of some items concluding that 'Hall's scale would benefit from extensive item content modifications.' Consequently, items selected for inclusion here were evaluated and changes were made to some items in an attempt to improve their precision. The main thrust of the changes dealt with the items' reference point, in particular, to a profession, organisation or society.

Morrow & Goetz (1988)

Used a 24 item scale based on Snizek (1972) having dropped the Autonomy scale item, 'I am my own boss in almost every work-related situation' since the sample (N=325 accountants) maintained high reporting authority. Alpha=0.75 overall. Sub-scale alphas: profession as referent 0.69; belief in service 0.70; self-regulation 0.75; sense of calling 0.49; autonomy 0.66. Intercorrelation with OCQ, 0.28.

O'Reilly, Parlette and Bloom (1980)

Used the 3 highest loading items on each of Hall's five factors using Snizek's (1972) data. No reliability data reported.

Bedian, Pizzolatto, Long and Griffeth (1991)

Used a 17 item scale taken from Bartol (1979) having dropped items that overlapped with Blau's (1985) career commitment measure. Alpha=0.71, mean score was 37.4, s.d.=5.45. Correlation with the 15 item OCQ was 0.37, with intent to remain 0.17, with career commitment 0.50 for N=302 US nursing employees.

Hayward-Farmer & Stuart (1990)

Developed a 23 item, 7-point, Likert scale comprising 6 sub-scales. Most items were taken from measures constructed in the 1960s and early 1970s apart from 6 items of their own device. Not a particularly convincing scale since some items (e.g. 1, 4, 8, 17, 22, 25) are not specific to professionals and could be answered by any employee. The scale partly focuses on external (structural) aspects of professionalism rather than internalised attitudes. Items dealing with attitudes concern sub-scales for knowledge base (6, 10, 15); societal importance (2, 16, 18, 27) and own superiority (5, 9, 14, 19, 20, 31). Alpha ranged from

0.55 to 0.86 for sub-scales.

Cornwall and Grimes (1987)

Used a scale developed by Berger and Grimes (1973) containing 35 professional role orientation items taken from previous studies. Using a 7-point Likert response, reliability coefficients for sub-scales over two time periods were: professional commitment, 0.71, 0.67; commitment to organisational goals, 0.70, 0.77; organisational immobility, 0.69, 0.73; concern for advancement, 0.54, 0.55; and reference group orientation, 0.68, 0.60. Although having acceptable reliability, this scale seems to overlap with the OCQ through commitment to goals and organisational immobility.

Engel (1970)

Studied autonomy as a dimension of professionalism - 'The professional is expected to be autonomous with regard to responsibility, communication and innovation. He assumes responsibility for his client's welfare' (p.15). Engel constructed three sub-scales (not given) concerning: autonomy over work tasks & methods (innovation); autonomy over individual responsibility for thinking and acting without interference; autonomy in communication, ie, being able to participate in decision processes.

Howell & Dorfman (1986)

Administered a test of individual professionalism such that people scoring above a certain score were rated as professional. The 7 item scale contained; years in education, degree of expertise in doing one's job, reliance upon feedback, guidance and interaction with others sharing the same occupational speciality, and, personal need to act autonomously. Alpha=.77 for a sample of 354 hospital employees. (Scale not given in Howell and Dorfmann).

Miner (1980)

Developed a 40 item measure 'The Miner Sentence Completion Scale' Form P. Eight items represented each of 5 sub-scales measuring; acquiring knowledge, accepting status, independent action, providing help and professional commitment. Sub-scale correlations

with total item score ranged from 0.48 to 0.69. Median correlations between sub-scales were 0.16. Although an attractive proposition as a means of reducing acquiesence responding, its use here is discounted for two reasons. Firstly, its inclusion in the survey would most likely deter respondents from completing it due to the amount of effort required to complete 40 sentences. Secondly, its inclusion would have unhelpfully lengthened the survey. Noteworthy perhaps is the sample used to validate the scale; University Management Professors.

While several measures of professionalism have been identified, measures based on Hall's (1968) scales have been adopted by other researchers, offer acceptable reliability and independence from other scales used in this research. As such, a professionalism scale using a shortened version of Hall's 50 items was constructed.

**Professional (Career) Commitment**

Jauch, Glueck & Osborn (1978)

Developed a 6-item scale anchored on 5 Likert points giving split half reliability 0.72. Scale is given in Jauch et al. (1978, p.87)

Aranya and Ferris (1983)

Developed an 8-item scale and changed 'organization' to 'profession' to measure professional commitment. Alphas of 0.96 and 0.95 were obtained with N=722 Israeli accountants and N=810 US accountants. Intercorrelation with measures of organisational commitment was 0.72 and 0.39 for Israeli and US samples respectively.

Morrow and Wirth (1989)

Substituted 'profession' for 'organization' in the OCQ. Alpha=0.89 for N=728 US university faculty. Correlation with OCQ, 0.34.

Despite seemingly good reliability the approach of substituting 'profession' for 'organisation' in the OCQ or similar measure was not followed in this study. Although

intercorrelations are only moderate the similarity between the wording of the two measures does nothing to minimise the dangers of acquiesence responses.

Blau (1988, 1989)

Blau (1985) developed an 8 item career commitment scale that was tested on nurses and found to be operationally distinct from organisational commitment (the OCQ). Note, one item was dropped, 'I spend a significant personal time reading [occupation] related journals and books'. The 7-item scale gave alpha of 0.83 from N=164 US supervisors and 0.84 from N=129 US insurance clerks. Intercorrelations with OCQ were 0.33 and 0.31. His 1989 study on N=174 US bank tellers gave alpha=0.82 consistent with previous studies. Intercorrelation with OCQ was 0.28. Although developed as a career commitment measure, Blau (1988, p.285) suggested that the measure could be used with professional groups so long as key referent words in the items are changed to reflect a particular sample.

Bedian, Kemery & Pizzolatto (1991)

7 items from Blau (1985). Alpha = 0.84 from N=302 hospital employees.

**British Organizational Commitment Questionnaire**

Cook & Wall (1980).

Based on 2 samples, N=390, N=260, of UK blue collar workers coefficient $\alpha$ : for BOCS 0.87, 0.80; for identification scale 0.74, 0.71; for involvement scale 0.87, 0.71; for organisational loyalty 0.82, 0.60. Mean item-whole correlations: for BOCS 0.64, 0.50; for identification 0.57, 0.54; for involvement 0.45, 0.42; for loyalty 0.67, 0.42. Test-retest stability was 0.5 for the full scale after six months and 0.6, 0.35 and 0.53 for the identification, loyalty and involvement subscales respectively. (The BOCS was designed for blue-collar workers with modest educational attainment).

Oliver (1990)

Omits reliability data but gives correlation coefficients with BOCS for the identification, involvement and loyalty sub-scales of 0.77, 0.72, 0.79 respectively. Whole BOCS mean = 51.0, s.d.=7.86. Means and s.d.: for identification 16.9, 3.56; for involvement 18.7, 2.50; for loyalty 15.7, 3.56. N=121 employees in a UK chemical plant with higher than average education levels.

Peccei & Guest (1993)

Coefficient alpha for: identification 0.55; involvement 0.73; loyalty 0.60. (N=218 British Rail employees, mostly manual and clerical). Found the six-item positively worded version 'psychometrically superior to the nine item scale' (p.29). Negatively worded items had low reliabilities. Found that there are three distinct factors measuring distinct aspects of commitment. Test-retest data showed that eight of the nine items were not significantly different after one year (p.20).

Furnham, Brewin and O'Kelly (1994)

Cite alphas of 0.71-0.87, test-retest reliability over 6 months of 0.60 in other work (unspecified). Does not give alpha for the 1994 study except to note that it was not less than 0.60.

**Organizational Commitment Questionnaire**

This is the most widely used measure of affective commitment.

Barge and Schlueter (1988)

Reliability: Cronbach's $\alpha$ 0.82 - 0.93; item analysis 0.36 - 0.72; test-retest reliability 0.53 - 0.75 after 2-4 months on various samples (citing Mowday et al., 1979).

Morrow (1983)

Concludes that OCQ 'provides the strongest reliability data ... it can be strongly recommended' (p.492).

Morrow and McElroy (1986)

Compared the 15-item OCQ with other measures of work commitment and found it was 'relatively independent of other work measures' (p.141).

Griffin and Bateman (1986)

Observed that the OCQ has enjoyed widespread acceptance and use "due in large part to its well documented psychometric properties" (p.170). Noted that Stumpf & Hartman (1984) dropped the intention to quit items from the OCQ as they confound the relationship between commitment and turnover. (Academy of Management Journal, 308-329).

Cook, Hepworth, Wall & Warr (1981)

Alpha noted as 'consistently high' across studies. A study of 154 engineers gave $\alpha$=0.84 but 562 high-tech employees gave $\alpha$=0.54.

Dunham, Grube & Castaneda (1994)

Used various samples of police officers, students and volunteer workers. Alpha for OCQ 0.89 - 0.90 (incl. one sample of 74 professionals and managerial workers).

Shore & Tetrick (1991)

9-item version $\alpha$ = 0.88 (N = 330 mixed employees).

**Continuance Commitment**

McGee & Ford (1987)

Cronbach's $\alpha$ 0.70, N = 350 university faculty.

Meyer & Allen (1984)

Cronbach's $\alpha$ 0.73, 0.74.

Dunham, Grube & Castaneda (1994)

Coefficient $\alpha$: for CCS 0.73-0.81; for CCS High-sac. 0.54 - 0.75; for CCS Low Alt. 0.58 -

0.78. Correlations of CCS; with OCQ were -0.01 - 0.23; with ACS -0.20 - 0.24; with CCS High-sac 0.61 - 0.90; with CCS low-alt. 0.86-0.91.

Hackett, Bycio & Hausdorf (1994)

Suggested items 7 & 8 could be dropped on grounds of 'substantial non-commitment variance' (p.21).

Allen & Meyer (1990)

Coefficient alpha 0.75 (N=256 mixed employees); 0.82 (N=337 mixed employees but likely to contain some professionals).

**Affective Commitment Scale**

Cook (1994)

Used 5 items from the ACS, alpha = 0.61 from N=224 US graduate students.

McGee & Ford (1987)

Cronbach's $\alpha$ 0.88, CCS (low-alt) $\alpha$ 0.72, CCS (High-sac.) 0.70, N=350 University Faculty.

Meyer & Allen (1984)

Cronbach's $\alpha$ 0.88, 0.84.

Dunham, Grube Casteneda (1994)

Alpha 0.74 - 0.87. Correlation with OCQ 0.77 - 0.87 (N =2734 from various samples).

Hackett, Bycio & Hausdorf (1994)

Showed item 8 to have low potential to explain commitment variance and was associated with high error variance relative to other scale items.

Allen & Meyer (1990)

Coefficient alpha 0.87 (N=256 mixed employees); 0.86 (N=337 mixed employees but likely to contain some professionals.

Eisenberger, Fasolo, Davis-La Mastro (1990)

Using 7 of the 8 ACS items plus 2 OCQ items $\alpha$ was between 0.81 - 0.89. The item omitted appears to have been item 4 from Allen & Meyer (1990, p.6) 'I think that I could easily become as attached to another organisation as I am to this one' which is item 8 in Meyer & Allen (1984). (see McGee & Ford, 1987, p.639).

Shore & Tetrick (1991)

Coefficient $\alpha$ 0.78 (N = 330 mixed employees).

**Perceived Organisational Support**

Eisenberger, Fasolo & Davis-La Mastro (1990)

17-item version of SPOS had higher Cronbach's alpha than 9-item version. In various samples:

$\alpha = 0.95$, M = 3.70, sd 1.30 (N = 39 teachers)

$\alpha = 0.94$, M = 4.29, sd = 1.21 (N = 16)

$\alpha = 0.95$, M = 3.86, sd = 1.49 (N = 22 hourly paid workers).

For 9-item version:

$\alpha = 0.80$, M = 4.84, s.d. = 1.04 (N = 18 insurance reps)

$\alpha$=0.76, M=5.35, s.d.=0.91 (N=121 university assistants), $\alpha$=0.74, M=3.69, s.d.=1.09 (N = 21 police officers). (p.53). (M = mean). The 9-item version contained the 9 highest loading items in the original (1986) study.

Shore & Tetrick (1991)

17-item SPOS $\alpha = 0.72$ (N = 330 mixed employees). Mean = 3.44, s.d. = 0.72.

Eisenberger, Huntington, Hutchinson, Sowa (1986)

36-item version $\alpha$= 0.97, item-total correlations ranged from 0.42 - 0.83 with mean of 0.67 (p.503), N=361 from various samples mostly clerical and administrative staff. A 17-item version using items with the highest factor loadings had $\alpha$=0.93 (N=71 teachers).

Miller (1967)

While not using POS explicitly, Miller studied the professional incentive structure which is conceptually similar to POS. He studied scientists and was interested in support for: freedom to publish; attending meetings; research facilities; promotion based on technical competence; improving knowledge and skills. These foci were believed to represent the most sought after incentives by scientists. Two Likert scales were used (p.761),

Professional Climate

- (company) provides us with many opportunities to obtain professional recognition outside the company (4 item, Likert),
- in general, how much time are you provided to work on your own research interests (almost none, very little, some, a great deal).

Company encouragement, the company encourages us to:

- publish the results of our work
- attend professional meetings
- further our professional training by attending lectures and/or classes at academic institutions.

**Social Exchange Ideology**

Eisenberger, Huntington, Hutchinson & Sowa (1986)

$\alpha$=0.80 (N=71 teachers). The five item exchange ideology questionnaire taken from Eisenberger et al. (1986) was used. The use of this questionnaire helps to move commitment research towards those factors 'in the mind of key actors' (Sparrow, 1995, p.12) that influence commitment as these seem potentially much more influential than the

demographic, role and organisational variables usually examined.

**Job Security**

The concept of job security (insecurity) seems among the more straightforward to conceptualise and measure. However, many measures exist and some blurring occurs between security of present job and security with present employer. This research is more concerned with the latter situation - that of becoming unemployed.

Ashford et al. (1989)

Developed an extensive scale measuring different facets of security. Fifty seven items in total used, one sub-scale concerned the 'total job' - 'Assume for the moment that each of the following events could happen to you; how important to you personally is the possibility that:

- you may be laid off permanently;
- your department's future may be uncertain;
- you may be pressurised into early retirement'.

Responses are from 'very important to not important'.

Deery et al. (1994)

Used a 3-item scale (alpha=0.83, N=320 Australian government employees) taken from a 10-item scale given in Oldham et al. (1986). The 3 selected items were not identified but face validity of items suggests 3 for use here:

- I am confident that I will be able to work for this organisation as long as I wish.
- If my job were eliminated I would be offered another job in the same organisation.
- If this organisation was facing economic problems my job would be the first to go.

The ten items are given in Oldham et al. (1986) who found alpha= 0.87, mean score = 5.63, s.d. =0.89, using a 7-point scale.

Jacobsen (1991)

A 3-item, 5 point, scale was used in an Anglo-Dutch study, alpha=0.75. Scale items were:

- How secure do you feel in your present job?;
- I feel sure that my job will continue for a long time;
- I have no worries about the future of my job,

The first two items affect 'subjective likelihood' of losing a job while the third addresses concern about job loss. (In Hartley et al., 1991).

Johnson et al. (1984)

Seven items tapping job security are in their Work Opinion Questionnaire. Five point responses, alpha=0.75 from N=670 low income subjects. Items were (scaled strongly agree to strongly disagree):

- The thought of getting fired really scares me;
- I am worried about the possibility of getting fired;
- Working hard would keep me from getting fired;
- If I get fired I will not know how to tell people;
- If I do a good work my job would be safe;
- I am so worried that I would do almost anything to keep my job;
- I am worried about the disgrace of being fired.

Dooley et al. (1987)

Used 2 items to measure perceived job security:

- whether they expected a change in their employment for the worse
- whether anything had happened recently to make them less secure in the job.

Responses were answered Yes/No. Usefully, they compared perceived job security with objective job security measuring economic data about the sector. The two measures were associated in the expected direction.

Hackman and Oldham (1975)

One sub-scale of their job diagnostic survey contained 2 items measuring job security, 7 point response scale, Spearman-Brown reliability coefficient 0.73 from N=6930 (in Cook et al., 1981).

Roskies and Louis-Guerin (1990)

A depth study of job security as a dependent variable. Measured 5 facets: termination; forced retirement; demotion; deteriorated working conditions and long-term job loss. The level of perceived security was categorised as low, medium or high. Scale items and reliability data not given.

## SCALES SELECTED FOR THE PILOT SURVEY

Although all the commitment measures identified for piloting have shown good reliability in previous research, there is no clear reason to favour one over the other here. Good reliabilities have also previously been observed with the short versions containing only the positively worded items. However, most previous research has been conducted on non-British samples, except for the BOCS, and it is important to establish which of the ACS, BOCS and OCQ is best suited to a study of British professionals. As such, full versions of each scale were piloted. No alternative to the SPOS or Social Exchange Ideology scales were identified and the scales appear to have good reliability. Full versions of the two scales were included in the pilot survey.

The professionalism scale developed from Hall (1968) and condensed by Snižek (1972) offers good reliability and no strong contender to measure professionalism was identified on grounds of reliability, face validity or acceptance by other researchers was found. In the pilot survey, Blau's professional commitment scale was included. Although this taps one of Hall's sub-scales it could be substituted for Hall's professional commitment items if better reliability is indicated.

The measures selected from the literature for piloting were:

- the 15-item version of the OCQ;
- the 8-item version of the ACS;
- the 9-item version of the BOCS;
- the 6-item version of the CCS obtained by dropping items 7 & 8;
- the 17-item version of the SPOS;
- the 5-item Exchange Ideology scale;
- three items (above) from Oldham et al. (1986) were used to construct a job security scale;
- a 25-item professionalism scale derived from the 5 highest loading items on each of Hall's sub-scales;
- the 7-item version of Blau's professional commitment scale.

However, these scales were not taken uncritically. Small but significant modifications to item wording were made where the original wording was deemed unclear or unsuitable for a British sample.

## OTHER VARIABLES OF INTEREST

Surprisingly, little mention was found in the literature of attempts to examine how commitment varies with the number of organisations that an employee has worked for. This has been dubbed 'intercompany change' by Aranya and Jacobsen (1975) and the item: 'Since beginning full time employment, how many different organisations have you worked for?' will be used. However, since it is reasonable for inter-company change to increase with age, the item 'How many times have you <u>voluntarily</u> changed employer in the last ten years' and 'How many times have you <u>involuntarily</u> changed employer in the last 10 years' will be used.

Demographic variables; age, sex, and organisational tenure were obtained. There has never been a strong theoretical basis for sex as a predictor of commitment and research suggests

that sex is not an antecedent (Bruning and Snyder, 1983). Nevertheless, because contrasting findings exist for scientific professionals (Graddick and Farr, 1983) and since workforce composition is changing, for descriptive purposes the sex of survey respondents will be obtained. Age usually shows a small positive link with commitment but there is now a basis for seeing age as a more complex predictor variable. Older respondents will be able to contrast the old and new orders for employee relations and can be expected to have experienced greater dissonance and change to their psychological contract. Younger respondents know only the new order and will have formed their psychological contract within it. There is now a basis for expecting age to negatively correlate with commitment.

Following Gunz and Gunz (1994, p.826) who found that perceived prestige of posts outside the professional's department related strongly to commitment an item similar to, 'The real prestige and rewards in this organisation go to people outside my department' was used.

## PILOT SAMPLE

The survey questionnaire was piloted on a sample of professionals employed as lecturers in a University College. Subjects had varied backgrounds including Accountancy, Law and Computer Science. While essentially a convenience sample its characteristics are sufficiently representative of the intended occupational groups to justify piloting which was undertaken solely to assess the reliability of measures.

Subjects were selected using random number tables applied to an internal telephone directory. Forty two questionnaires were sent and 33 returns were obtained, a response rate of 78%..

Respondents' average age was 45 years (median, 43 years) and 33% cent were female. The average age at which respondents left full-time education was 20.4 years (median, 21 years). Seventy six per cent were qualified to Masters level or above. Just over half had

their highest qualification in Management related subjects and the remainder were qualified in various social and natural science subjects. Seventy per cent identified with teaching as their referent profession.

## RELIABILITY ANALYSIS FROM THE PILOT SURVEY

Data from the pilot questionnaires were entered into SPSS version 6.1. The data matrix was then checked against the original returns, with the help of a colleague, and a small number of corrections were made.

Two measures of reliability exist for scales of the type used here; test-retest and internal consistency. Test-retest data were not collected here for no other reason than practical considerations as it would not have been acceptable to the small sample used. This is a limitation of the pilot as retest stability is an important component of reliability. Kline (1993, p.9) considers that retest data should be obtained after at least 3 months from at least 100 subjects and that correlations between surveys should be at least 0.8. However, this advice seems to have been directed at constructors of new tests rather than users of relatively established measures as is the case here. Indeed, retest stability does not appear to have concerned many previous researchers who have used these measures.

Internal consistency reliability can be assessed in several ways (Norusis, 1994, p.147) and the techniques are well described elsewhere (e.g. Kerlinger, 1964; Kline, 1993; Oppenheim, 1992). Kline (1993, p.10) claims that the best index of internal consistency reliability is coefficient alpha which should never be below 0.7 (p.11) and that around 100 subjects are needed in order to test the internal consistency reliability of attitude questionnaires (p.9). For a previously untested measure this seems a reasonable sample size but, here, we have a stream of previous research in which the measures have been used on diverse samples. These various studies have mostly indicated good reliability and so a smaller pilot sample is justified to explore reliability in this case. If good reliability is observed from a smaller sample, then taken together with previous reliability estimates,

we can be confident that the measures are suitable for further use in this research. Split-half reliability was also determined for some measures.

Another aspect of reliability analysis concerns the response patterns for each item. If an item attracted a high proportion of 'neither agree nor disagree' responses then its contribution to any analysis is limited. Likewise, items that attract responses at the extremes of the scale may be of limited use.

Hence, internal consistency was assessed via the pilot survey using a number of indicators. These were:

- coefficient alpha;
- item-whole correlations; and,
- the response pattern for each scale item.

Before summarising the results of the pilot the following points are worth restating.

1. Alpha will increase with the number of items in a scale.

2. High alphas are required and they should not fall below 0.7 since the standard error of measurement rises as reliability decreases (Kline, 1993, p.13).

3. Alpha is inflated if items are paraphrases of each other. In such a case high reliability would not be an indicator of validity.

Summary reliability data from the pilot survey are presented in Table A1.1 and are discussed below.

## Measures of Organisational Commitment

Alpha for the three affective commitment measures compared favourably with OCQ (0.91), ACS (0.86) and BOCS (0.77). The internal structure of these scales helps to choose between them since the ACS items all appear to tap identification with the goals and values of the organisation whereas the OCQ and BOCS contain sub-scales for identification, loyalty and involvement (willingness to exert effort). The 9-item BOCS contains three 3-item sub-scales and offers symmetry in this respect. Alphas for the sub-scales were $BOCS_{id}$ (0.80), $BOCS_{loy}$(0.44) and $BOCS_{inv}$(0.50).

The 15-item OCQ is not symmetrical since two items seem to tap involvement, five tap loyalty and eight tap a general identification dimension. Alphas for the sub-scales were $OCQ_{id}$ (0.82), $OCQ_{loy}$ (0.80) and $OCQ_{inv}$ (0.55). Thus the alphas for the involvement sub-scales in both the OCQ and BOCS fall below Kline's cut-off of 0.70.

These results suggest that there is little point in retaining the BOCS which had the lowest alpha. Two possibilities present themselves. One, to adopt the ACS and the loyalty scale from the OCQ. Secondly, to adopt the OCQ and use its identification items instead of those in the ACS. The first option was adopted.

Alpha for the CCS was 0.75, for $CCS_{hs}$ 0.76 and for $CCS_{la}$ 0.52. Although the low-alternative subscale showed low reliability the full 6-item version of the CCS was retained for the main survey.

## Perceived Organisational Support

Alpha for the 17-item POS scale was 0.95 and for the nine item version 0.93. Since the full version did not offer any extra reliability the 9-item version was used in the main survey.

## Social Exchange Ideology

Alpha for the social exchange ideology scale was 0.85.

**Professionalism**

Alpha for the full 25-item professionalism scale constructed from Snizek's data was 0.65 and many poor item-total correlations were observed. However, it is best to examine the sub-scales individually.

The 5-item professional commitment scale (PMC) gave alpha of 0.64 together with weak item-total correlations. As such, this scale was discarded in favour of Blau's 7-item professional commitment scale which gave alpha of 0.85 and which was retained for the main survey.

The belief in public service subscale (PMB) showed alpha of 0.83 with generally good item-total correlations. This 5-item sub-scale was used in the main survey.

The professional autonomy subscale (PMA) showed alpha of 0.81. The profession as referent subscale (PMR) showed alpha of 0.75. The sense of calling subscale (PMS) showed alpha of 0.69. For all subscales the item-total correlations were good.

**Job Security**

Alpha for this 3-item scale was 0.75. Analysis of response patterns showed that item JS2 gave the second highest proportion taking the middle response category, 42 per cent. For the other items in the scale the proportion was 18 per cent for JS1 and 33 per cent for JS3. Despite the limitations of item JS2 the full scale was carried forward into the main survey.

**Perceived Prestige and Turnover Expectations**

Other measures used in the pilot (perceived prestige and turnover expectations) were single-item scales for which alpha cannot be determined. The response pattern for perceived prestige showed that 45% of respondents had taken the middle category. This

was the highest level for any item in the survey and, while no norms exist for the safe proportion of responses that can be reached before the scale becomes invalid, 45% seems rather high.

Twenty five per cent of respondents took the middle option on the turnover expectations scale. Despite concerns over the two scales, they were both carried forward into the main survey.

## RESPONSE PATTERNS AND ITEM CORRELATIONS

### Analysis of Response Patterns

Since a scale is supposed to measure low and high attitudes, then extreme scores of 1 or 7 should be obtained. Based on an arbitrary examination of the proportion of respondents taking the extremes for each item, no item signalled concern in this respect. The three items recording the most scores of '1' were: OC4 (46%), PM17B (39%) and TOX1 (28%). The three items recording the most scores of '7' were: OC15 (63%), PC1 (51%) and BC9 (39%). More informative perhaps is the proportion of respondents taking the middle '4' response category. The three items recording the highest proportion of middle responses were: PSG1 (45%), JS2 (42%) and AC1 (39%).

Overall, however, the response patterns were acceptable and in no case was there a cause for serious concern about an item.

### Item-Total Correlations

Item-total correlations in most cases were at least 0.4 and often much higher. The only scale that departed seriously from this level was the 25-item professionalism scale but that is better seen as a composite of five subscales. When the item-total correlations were examined in the context of subscales then acceptable correlations occurred apart from the

professional commitment subscale which was subsequently dropped from the survey.

In summary, acceptable internal consistency reliability was observed for most measures. Alpha was at least 0.7 for measures adopted for the main survey except for the PMS scale for which alpha was 0.69.

**Table E1.1 Summary Reliability Statistics from the Pilot Survey**

| Scale | Items | N | Alpha | Split-half | Adopted in survey |
|---|---|---|---|---|---|
| ACS | 8 | 32 | 0.86 | 0.65 | Y |
| BOCS | 9 | 32 | 0.77 | 0.57 | |
| BOCS-id | 3 | 33 | 0.80 | | |
| BOCS-inv | 3 | 33 | 0.50 | | |
| BOCS-loy | 3 | 32 | 0.44 | | |
| OCQ | 15 | 29 | 0.91 | 0.84 | |
| OCQ-inv | 8 | | 0.82 | | |
| OCQ-inv | 2 | | 0.55 | | |
| OCQ-loy | 5 | | 0.80 | | Y |
| CCS | 6 | 30 | 0.75 | 0.64 | Y |
| CCS-hs | 3 | 33 | 0.76 | | |
| CCS-la | 3 | 30 | 0.52 | | |
| SEI | 5 | 33 | 0.85 | 0.77 | Y |
| POS | 17 | 33 | 0.95 | 0.93 | |
| POS | 9 | 33 | 0.93 | 0.86 | Y |
| PC | 7 | 33 | 0.85 | 0.72 | Y |
| PM | 25 | 33 | 0.65 | 0.44 | |
| PMA | 5 | 33 | 0.81 | | Y |
| PMB | 5 | 33 | 0.83 | | Y |
| PMC | 5 | 33 | 0.64 | | |
| PMR | 5 | 33 | 0.75 | | Y |
| PMS | 5 | 33 | 0.69 | | Y |
| JS | 3 | 32 | 0.75 | 0.57 | Y |

## Respondents' Reaction to the Questionnaire

In addition to statistical reliability assessment, three respondents were asked about their views on the questionnaire and the main findings are given below. Respondents were unable to assess the motives behind the items suggesting that deliberate manipulation of responses was minimal and may not have occurred at all. Item wording was generally clear although some points about specific items were raised. Item two of the continuance commitment scale (CC2HS) was considered too wordy. CC4LA also was not immediately clear and this could explain why a few respondents did not complete all the CCS items. The meaning of the exchange ideology item EI4 was not clear, even after some consideration, and this might have caused some respondents to tick the wrong response category. Where comments were made about items, amendments were made and the reworded items were incorporated in the main survey (Appendix F gives the questionnaire used in the main quantitative survey).

Another source of confusion was the 'organisation' referred to in the commitment items. An assumption behind the design of these instruments seems to be that respondents would identify with the 'global' organisation, the contractual employer. Some respondents made this identification, others identified with the department in which they worked rather than the global organisation. It seems likely that, where the department has a strong identity, perhaps through being a cost-centre or through a high reputation among its customers, the default identification will be with the department. Thus it seems possible that respondents may complete the survey while thinking of the global organisation, a department within it, or a combination of both. In response to this observation, the instructions given to respondents in the main survey carried definitions of these foci to help standardise respondents' interpretations of key terms in the questionnaire. Social exchange ideology also had a temporal element in that, while an employee might show low social exchange ideology, and hence be tolerant of unfair treatment, such unfairness would be not be tolerated indefinitely. A consequence of sustained unfair treatment could be a switch to high social exchange attitudes within a few months. A consequence of high social exchange could be reduced loyalty.

# Appendix F

# The Survey Questionnaire

NENE COLLEGE
ORGANISATION STUDIES RESEARCH GROUP

# PROFESSIONALS IN ORGANISATIONS

This research is being carried out to explore the links between professionals and their employing organisation. Some of the key terms in the questionnaire are explained below so that your understanding is the same as the researcher's.

**The Organisation** - the organisation that employs you and with which you have a contract of employment. It does not refer to your section, division or branch.

**Top Management** - This refers to top management of the organisation that employs you. It does not refer to managers in your section, division or branch unless they are the same.

**Work Group** - This is the group or team of people with whom you work closely, perhaps on a day-to-day basis. If you don't work in a team, then this would be your section or unit.

**Supervisor** - This is your line manager, your immediate boss.

**Profession** - This is the profession that you most closely identify with. Examples are Chemical Engineering, Electrical Engineering and Accountancy.

All responses will be treated in the strictest confidence. No person, group or organisation will be identified in published reports.

The questionnaire contains a series of statements that you are asked to respond to. Some statements are very similar to others - this is deliberate. Please respond to all the statements and return the survey to the researcher using the reply paid envelope provided.

Thank you

Stephen Swailes
Faculty of Management and Business
Nene College
Boughton Green Rd
Northampton, NN2 7AL

## Section 1

This section requests some general information about yourself.

1. How long have you worked for your present employer?

   years___ months __

2. Since beginning full time employment, how many different organisations have you worked for?

   _____

3. How many times have you <u>voluntarily</u> changed employer in the last 10 years?

   _____

4. How many times have you <u>involuntarily</u> changed employer in the last 10 years?

   _____

5. What is the highest academic qualification that you have achieved so far?

   ☐ A Levels or equivalent

   ☐ HNC/HND or equivalent

   ☐ First degree (eg. BA, BSc, BTech.) or equivalent

   ☐ Post-graduate Diploma or equivalent professional qualification

   ☐ Masters degree or equivalent professional qualification

   ☐ Doctorate

6. Please state the professional intitutes or societies that you are a member of and give your grade of membership. (If you are not a member of a professional body please state 'NONE'.

   _____

   _____

   _____

7. Are you in a trades union? Yes ☐ No ☐

8. Please give your age in years .....

9. Are you

male ☐

female ☐

**Thank you for providing those details. Now please complete sections 2 - 6.**

## Section 2

Each of the following statements represent feelings that people might have about the organisation they work for and reasons for staying with an organisation. Please tick the box that best reflects your feelings about each statement using the following response scale;
1=strongly disagree, 2=disagree, 3=slightly disagree, 4=neither agree nor disagree, 5=slightly agree, 6=agree, 7= strongly agree, 8=don't know.)

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| AC1. I would be very happy to spend the rest of my career with this organisation. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| I am confident that I will be able to work for this organisation for as long as I wish. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| I enjoy discussing my organisation with people outside it. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| If my job were eliminated I would be offered another job in the same organisation. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| An employee's work effort should depend partly on how well the organisation deals with his or her desires and concerns. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| I really feel as if this organisation's problems are my own. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Right now, staying with my organisation is a matter of necessity as much as desire. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| I think that I could easily become attached to another organisation as I am to this one. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| An employee who is treated badly by the organisation should lower his or her work effort. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| CC2HS. One of the major reasons I continue to work for this organisation is that leaving would require considerable personal sacrifice - another organisation may not match the overall benefits I have. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| I do not feel like 'part of the family' at my organisation. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| An employee's work effort should not be affected by how well the organisation treats him or her | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| If this organisation was facing economic problems my job would be among the first to go. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| I do not feel 'emotionally attached' to this organisation. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| I feel I have too few options to consider leaving this organisation. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| This organisation has a great deal of personal meaning for me. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| One of the few negative consequences of leaving this organisation would be the scarcity of available alternatives. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |

Please place an X on the line below to show how committed you are to your work group.

Totally Uncommmitted _____ Fully Committed

1 100

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| I do not feel a strong sense of belonging to my organisation. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| It would be very hard for me to leave this organisation right now, even if I wanted to. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| EI5-R. The failure of the organisation to appreciate an employee's contribution should not affect how hard he or she works | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Too much in my life would be disrupted if I decided to leave this organisation now. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| PSG1 The real prestige and rewards in this organisation go to people outside the area I work in. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |

## Section 3

This section seeks your opinions about your relationship with your profession and your organisation. Please respond to the statements using the same response scale : (1=strongly disagree, 2=disagree, 3=slightly disagree, 4=neither agree nor disagree, 5=slightly agree, 6=agree, 7= strongly agree, 8=don't know.)

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| PC1-R. If I could go into a profession other than the one I am in and which paid the same I probably would. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| The organisation strongly considers my goals and values. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| I definitely want to pursue a career in the profession I am in. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Help is available from the organisation when I have a problem. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| There isn't much scope for me to advance in my profession here. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| The organisation really cares about my well-being. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| If I could do it all over again, I would not chose the same profession | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| The organisation is willing to extend itself in order to help me perform my job to the best of my ability. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Even if I did the best job possible, the organisation would fail to notice. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| ADV2. I'm confident that I can progress in my career if I stay here. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| The organisation cares about my general satisfaction at work | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| I like this profession too well to give it up. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| The organisation shows very little concern for me. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| The organisation cares about my opinions. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| I am disappointed that I ever entered my profession | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| The organisation takes pride in my accomplishments at work. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |

Please place an X on the line below to show how committed you are to your supervisor.

Totally Uncommitted _____ Fully Committed

1 100

## Section 4

This section seeks some more specific opinions about your role and your relationship with your profession.

(the response scale is; 1=strongly disagree, 2=disagree, 3=slightly disagree, 4=neither agree nor disagree, 5=slightly agree, 6=agree, 7= strongly agree, 8=don't know.)

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| PM5A I make my own decisions regarding what is to be done in my work. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Other professions are more vital to society than mine. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| I systematically read professional journals. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| PM8S. My fellow professionals have a pretty good idea about each other's competence. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| My own decisions are subject to review. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| PM7B. I think that my profession, more than any other, is essential for society. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| I regularly attend local professional meetings. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| A problem in this profession is that no-one knows what colleagues in other organisations are doing to improve standards. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| I am my own boss in almost every work-related question. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Some other occupations are actually more important to society than mine. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Professional bodies do little for the average member. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| We really have no way of judging each other's competence. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Most of my decisions are reviewed by other people. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| PM47B. If ever an occupation is indispensable it is this one. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Although I would like to, I don't read professional journals too often. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| There is not much opportunity to judge how another professional does his/her work. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |

Please place an X on the line below to show how committed you are to top management.

Totally uncommmitted — Fully Committed

1 — 100

## Section 5

This section asks about the way you approach your work and some more questions about your relationship with the organisation.

| | 1 never | 2 rarely | 3 sometimes | 4 often | 5 very often | 6 continually |
|---|---|---|---|---|---|---|
| CQAT3. Persisting with tasks to make sure customer/client needs are met is important to me. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| I challenge the way things are done. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| CQIT1. I suggest improvements to efficiency and quality. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| I see jobs through to the end even if it sometimes means affecting my social and home life. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| In order to uphold standards of service I take work home. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| I contribute to new ways of working. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| I like to experiment with different systems and practices to improve things at work. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| I work at home over and above my contractual hours. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| I meet the agreed quality levels set for my own work. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |

Please place an X on the line below to show how committed you are to your organisation.

Totally Uncommitted ——————————————————— Fully Committed

1 100

## Section 6

This section seeks your views towards top management, your supervisor and your work group. Refer to the cover page for definitions of the terms if you need to.

(the response scale is; 1=strongly disagree, 2=disagree, 3=slightly disagree, 4=neither agree nor disagree, 5=slightly agree, 6=agree, 7= strongly agree, 8=don't know.)

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| FCSTM1. When someone criticises top management it feels like a personal insult. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| My specific goals fit clearly with the overall aim of the organisation. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| When someone praises my work group it feels like a personal compliment. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| My supervisor's successes are my successes. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| My values and those of the organisation are very similar. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| I am very interested in what others think about my work group | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| When someone praises top management it feels like a personal compliment. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Working here allows me to meet my own personal goals. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| I am very interested in what others think about my supervisor. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| FCSWG3. My work group's successes are my successes. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| I believe in what this organisation is trying to achieve. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| When someone praises my supervisor it feels like a personal compliment. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| I talk-up top management to friends as a good group to work for. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| I am very happy with the direction this organisation is taking. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| What my work group stands for is important to me. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| I am proud of top management. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| When I talk about my supervisor I usually say "we" rather than "him" or "her". | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |

If you would like to add any additional views about professionals and their relationships with organisations, please use the space below:

_____

_____

_____

_____

☐ Please tick the box and provide contact details if you are willing to be interviewed in the next stage of this research.

**Thank you for completing the questionnaire. Please return it to the Researcher in the envelope provided.**

# APPENDIX G PILOT TESTING AND ITEM-LEVEL DATA FOR THE BEHAVIOURAL COMMITMENT SCALE

## Pilot Testing

The items generated from the new scale were tested purely for the purposes of gauging the reliability of scores obtained from a mixed sample of professionals working in higher education. This sample was taken from academic post holders and the professions represented included accountants, human resource specialists and lawyers. Reliability data are given below for the three sub-scales.

### G1.1 Reliability of Achievement scale

| | Scale Mean if Item Deleted | Scale Variance if item Deleted | Corrected Item-total correlation | Alpha if item Deleted |
|---|---|---|---|---|
| CQAT1 | 30.9412 | 12.8165 | .0191 | .6999 |
| CQAT2 | 30.7451 | 12.9137 | .0878 | .6702 |
| CQAT3 | 31.1373 | 10.8008 | .3154 | .6192 |
| CQAT4 | 31.1961 | 7.7208 | .7249 | .4366 |
| CQAT5 | 31.1176 | 8.5859 | .4707 | .5579 |
| CQAT6 | 30.9412 | 7.9365 | .5839 | .5002 |

Number of Cases = 51, Number of Items = 6, Alpha = .6425

In view of the low item-total correlation items CQAT1 and CQAT2 were eliminated leading to the following satisfactory scale.

| | Scale Mean if Item Deleted | Scale Variance if Item Deleted | Corrected Item-Total Correlation | Alpha if Item Deleted |
|---|---|---|---|---|
| CQAT3 | 18.3922 | 9.6431 | .3337 | .8105 |
| CQAT4 | 18.4510 | 6.6125 | .7747 | .5910 |
| CQAT5 | 18.3725 | 7.0784 | .5707 | .7082 |
| CQAT6 | 18.1961 | 6.8808 | .6114 | .6839 |

Number of Cases = 51, Number of Items = 4, Alpha = .7652

## Table G1.2 Reliability of the Innovation scale

| | Scale Mean if Item Deleted | Scale Variance if Item Deleted | Corrected Item-Total Correlation | Alpha if Item Deleted |
|---|---|---|---|---|
| CQIT1 | 32.9623 | 22.1909 | .5574 | .5636 |
| CQIT2 | 33.0943 | 22.1255 | .5919 | .5566 |
| CQIT3 | 32.3396 | 24.0363 | .5055 | .5896 |
| CQIT4 | 33.4906 | 22.2932 | .3261 | .6319 |
| CQIT5 | 33.2075 | 25.0522 | .2272 | .6552 |
| CQIT6 | 33.0000 | 23.8077 | .3266 | .6267 |
| CQIT7 | 33.5283 | 23.7925 | .1911 | .6836 |

Number of Cases = 53, Number of Items = 7, Alpha = .6523

In view of the low correlations observed with items CQIT4, CQIT5 and CQIT7 they were eliminated. From inspection of the total item correlation matrix, item CQAT2 correlated strongly with the Innovator items and was thus added to the sub-scale leading to the following more satisfactory scale. Item CQAT2 was recoded CQIT8 in subsequent analysis.

| | Scale Mean if Item Deleted | Scale Variance if Item Deleted | Corrected Item-Total Correlation | Alpha if Item Deleted |
|---|---|---|---|---|
| CQIT1 | 23.8491 | 8.7845 | .5903 | .6403 |
| CQIT2 | 23.9811 | 8.7881 | .6235 | .6261 |
| CQIT3 | 23.2264 | 10.6401 | .4340 | .7036 |
| CQIT6 | 23.8868 | 9.0639 | .4339 | .7196 |
| CQAT2 | 23.0189 | 12.2112 | .4834 | .7109 |

Number of Cases = 53, Number of Items = 5, Alpha = .7295

**Table G1.3 Reliability of the Commitment to Goals scale**

| | Scale Mean if Item Deleted | Scale Variance if Item Deleted | Corrected Item-Total Correlation | Alpha if Item Deleted |
|---|---|---|---|---|
| CQG1 | 21.0377 | 20.5755 | .7700 | .7394 |
| CQG2 | 21.0377 | 20.1909 | .7296 | .7510 |
| CQG3 | 20.3585 | 25.9652 | .4331 | .8343 |
| CQG4 | 19.5660 | 26.7888 | .4803 | .8231 |
| CQG5 | 21.1698 | 19.6437 | .6946 | .7643 |

Number of Cases = 53, Number of Items = 5, Alpha = .8223

**Item-Level Data**

Descriptive statistics for items in a new scale should be reported as they form the basis for further work using the same scale items. Ideally, the mean item scores will tend towards the centre of the possible scoring range (in this case, 4) and the items will show a high level of variance if they are discriminating between respondents (DeVellis, 1991, p.83). For the full sample obtained in the main survey, additional item-level data are shown in Table G2.1

**Table G2.1 Means, variance, minimum and maximum values**

| Variable | Mean | Std Dev | Variance | Min. | Max. | N |
|---|---|---|---|---|---|---|
| CQAT3 | 5.22 | .83 | .69 | 2 | 6 | 623 |
| CQAT4 | 4.29 | 1.20 | 1.43 | 1 | 6 | 624 |
| CQAT5 | 3.68 | 1.47 | 2.17 | 1 | 6 | 623 |
| CQAT6 | 3.70 | 1.57 | 2.46 | 1 | 6 | 622 |
| CQG1 | 4.86 | 1.50 | 2.26 | 1 | 7 | 618 |
| CQG2 | 4.64 | 1.47 | 2.17 | 1 | 7 | 619 |
| CQG3 | 4.74 | 1.40 | 1.96 | 1 | 7 | 620 |
| CQG4 | 5.57 | 1.23 | 1.50 | 1 | 7 | 622 |
| CQG5 | 4.53 | 1.60 | 2.57 | 1 | 7 | 621 |
| CQIT1 | 4.45 | 1.00 | 1.00 | 2 | 6 | 624 |
| CQIT2 | 4.41 | 1.02 | 1.04 | 2 | 6 | 624 |
| CQIT3 | 4.32 | .97 | .94 | 2 | 6 | 624 |
| CQIT6 | 4.04 | 1.08 | 1.16 | 2 | 6 | 624 |
| CQIT8 | 5.11 | .77 | .60 | 2 | 6 | 624 |

The scoring range for the items was 1 to 7 and most of the item means lie slightly above the mid-point. Items CQAT3 and CQIT8 were dropped because they portrayed weak properties regarding internal consistency reliability and their high means and low variances contribute to that decision. Although item CQG4 showed the highest mean score, the item variance was adequate and it attracted scores from across the possible range.

# APPENDIX H. DEALING WITH MULTI-COLLINEARITY AND ERROR VARIANCE IN MULTIPLE MODERATED REGRESSION.

## MULTI-COLLINEARITY

Chapter 8 highlighted the problem of multi-collinearity which is common when specific interaction effects are tested because the interaction term (the product of main effects X and Y) is often highly correlated with X and/or Y. When interaction effects were first tested in this research on the summed scale scores, high levels of multi-collinearity were observed and, in the presence of high multi-collinearity, little confidence can be placed in the significance of betas obtained from a regression equation. The accepted way of overcoming multi-collinearity in tests for interaction effects involves centring each variable by deducting the mean score for a variable from the raw scores. Centring reduces the correlation between the interaction term and the independent variables and linear transformations do not affect the proportion of variance accounted for by an interaction term or its significance (Cohen and Cohen, 1983 p.324). Furthermore, the transformation does not affect indicators of change such as, delta $R^2$ or the corresponding change in F (Cronbach, 1987 p.415) and is advocated by Cronbach and others (Dunlap and Kemery, 1987; Jaccard et al. 1990 p.31; Southwood, 1978; and Stone, 1990).

To illustrate this, consider the interaction effect of perceived support and social exchange on commitment to the work group (WORKGP) which can be represented by the general equation,

$$WORKGP = C + b_1SMPOS + b_2SMEI + b_3XPOS_EI + error$$

in which SMPOS and SMEI are the summed scale scores for perceived organisational support and social exchange respectively and XPOS_EI represents the cross-product of SMPOS and SMEI. Running this equation on uncentred variables gave the regression statistics and diagnostics shown in Table H1.1, key elements of which are emboldened.

## Table H1.1 Moderated Multiple Regression, Uncentred Variables

```
Dependent Variable..   WORKGP
Block Number  1.  Method:  Enter       SMPOS

Step    MultR      Rsq  AdjRsq    F(Eqn)  SigF   RsqCh     FCh SigCh

  1    .3628    .1316    .1302     94.413  .000    .1316    94.413  .000
End Block Number   1   All requested variables entered.

Block Number  2.  Method:  Enter       SMEI

Step    MultR      Rsq  AdjRsq    F(Eqn)  SigF   RsqCh     FCh SigCh

  2    .3818    .1458    .1430     53.081  .000    .0142    10.334  .001
End Block Number   2   All requested variables entered.


Block Number  3.  Method:  Enter       XPOS_EI

Multiple R            .39049
R Square              .15248
Adjusted R Square     .14839
Standard Error      15.14668
DF                  3, 621

      F =       37.24334       Signif F =  .0000

------------- Variables in the Equation
Variable    B       SE B   Beta  Tolerance    VIF        T   Sig T
SMPOS      .159    .168    .107     .105      9.485      .946  .3444
SMEI      1.314    .425   -.379     .0901    11.090    -3.088  .0021
XPOS_EI    .023    .010    .336     .059     16.903     2.214  .0272
Constant) 84.44   6.957                               12.138  .0000

Collinearity Diagnostics

Number  Eigenval      Cond  Variance Proportions
                     Index  Constant    SMPOS      SMEI  XPOS_EI
    1    3.82772     1.000    .00050    .00049    .00056   .00056
    2     .09907     6.216    .00538    .03210    .03866   .00538
    3     .07110     7.337    .04413    .00621    .00899   .05432
    4     .00211    42.586    .94999    .96120    .95180   .93974

Durbin-Watson Test =   1.93457
```

With uncentred variables, eigenvalues of 3.83, .10 and .07 for SMPOS, SMEI and XPOS_EI respectively were observed and the occurrence of eigenvalues approaching zero indicates high multicollinearity. Even so, the interaction term was accepted into the equation (t=2.214, p=.0272) suggesting that an interaction effect is present. Table H1.2

below gives regression statistics for the same data after centring the predictor variables.

**Table H1.2. Moderated Multiple Regression on Centred Variables.**

```
      Dependent Variable..   WORKGP

Block Number  1.  Method:  Enter       CENTPOS

Step   MultR     Rsq  AdjRsq    F(Eqn)  SigF   RsqCh      FCh   SigCh

  1   .3628   .1316   .1302    94.413  .000   .1316    94.413   .000
End Block Number   1   All requested variables entered.


Block Number  2.  Method:  Enter       CENTEI

Step   MultR     Rsq  AdjRsq    F(Eqn)  SigF   RsqCh      FCh   SigCh

  2   .3818   .1458   .1430    53.081  .000   .0142    10.334   .001
End Block Number   2   All requested variables entered.


Block Number  3.  Method:  Enter       XCENPSEI

Multiple R            .39049
R Square              .15248
Adjusted R Square     .14839
Standard Error      15.14668
DF                  3, 621
           F =      37.24334       Signif F =  .0000

-------- Variables in the Equation

Variable        B         SE B      Beta  Tolerance     VIF       T    Sig T

CENTPOS       .501       .055      .337      .970      1.030     9.008  .0000
CENTEI       -.378       .130     -.109    .963218     1.038    -2.910  .0037
XCENPSEI      .023       .010      .083      .970      1.030     2.214  .0272
(Constant)  85.30       .610936                                139.627  .0000

No. of cases = 625

Collinearity Diagnostics

Number  Eigenval      Cond  Variance Proportions
                     Index  Constant  CENTPOS    CENTEI XCENPSEI
    1    1.28851    1.000    .05896   .19732    .22739   .26427
    2    1.03882    1.114    .62499   .13681    .11166   .06710
    3     .86284    1.222    .04347   .66402    .35772   .05672
    4     .80984    1.261    .27258   .00185    .30323   .61191

Durbin-Watson Test =   1.93457
```

After centring the two independent variables before computing the interaction term (cross-product term) and running the regression again, the eigenvalues changed to 1.29, 1.04, .86 indicating that the independent variables were no longer highly correlated. In both equations, $R^2$ was .15248 and the t-statistic for the interaction term was again 2.214 (p=.0272) showing that the explanatory power of the regression equation is not influenced by centring. Consequently, independent variables included in multiple moderated regression were centred prior to conducting the analysis. In this example, the moderated regression equation was,

$$WORKGP = 85.3 + .337SMPOS - .109SMEI + .083POS_EI$$

indicating that perceived support (SMPOS) has a positive influence on commitment to work group, social exchange (SMEI) a negative influence and the interaction term a positive influence.

## QUALITATIVE MODERATORS: TESTS FOR WITHIN SUBJECT-GROUP ERROR VARIANCE

The following tables show calculations in support of section 8.5 dealing with homogeneity of error variance.

**Table H1.3. Ratio of Within Sub-group Error Variance for Men and Women (group 1 = men, group 2 = women).**

| Dependent var.Y | Contin. var. X | Std deviations for Y | | $r_{xy}$ | $r_{xy}$ | Ratio |
|---|---|---|---|---|---|---|
| | | Men | Women | Men | Women | |
| SMACS | SMPOS | 8.97 | 7.61 | .689 | .624 | 1.19 |
| SMNEWOCS | SMPOS | 9.51 | 9.71 | .563 | .484 | 1.17 |
| ORGCOM | SMPOS | 22.97 | 21.59 | .544 | .630 | 1.28 |
| SUPCOM | SMPOS | 23.04 | 25.80 | .361 | .476 | 1.11 |
| TOPMAN | SMPOS | 26.4 | 23.41 | .545 | .647 | 1.56 |
| WORKGRP | SMPOS | 15.52 | 18.67 | .363 | .396 | 1.40 |
| | | | | | | |
| SMACS | SMPRFM | 8.97 | 7.61 | .406 | .349 | 1.32 |
| SMNEWOCS | SMPRFM | 9.51 | 9.71 | .468 | .506 | 1.01 |
| ORGCOM | SMPRFM | 22.97 | 21.59 | .345 | .285 | 1.04 |
| SUPCOM | SMPRFM | 23.04 | 25.80 | .253 | .133 | 1.31 |
| TOPMAN | SMPRFM | 26.4 | 23.41 | .290 | .346 | 1.32 |
| WORKGRP | SMPRFM | 15.52 | 18.67 | .339 | .158 | 1.59 |

**Table H1.4. Ratio of Within Sub-group Error Variance for Union and Non-Union Members (group 1 = non-union, group 2 = union members).**

| Dependent Var. Y | Contin. var. X | Std deviations for Y | | $r_{xy}$ | $r_{xy}$ | Ratio |
|---|---|---|---|---|---|---|
| | | non-union | union | non-union | union | |
| SMACS | SMPOS | 8.43 | 9.56 | .666 | .695 | 1.19 |
| SMNEWOCS | SMPOS | 9.16 | 10.6 | .511 | .616 | 1.12 |
| ORGCOM | SMPOS | 22.84 | 21.95 | .545 | .600 | 1.19 |
| SUPCOM | SMPOS | 23.24 | 25.2 | .374 | .439 | 1.10 |
| TOPMAN | SMPOS | 25.32 | 27.5 | .550 | .608 | 1.07 |
| WORKGRP | SMPOS | 15.92 | 18.06 | .319 | .481 | 1.10 |
| | | | | | | |
| SMACS | SMPRFM | 8.43 | 9.56 | .375 | .435 | 1.21 |
| SMNEWOCS | SMPRFM | 9.16 | 10.6 | .487 | .419 | 1.45 |
| ORGCOM | SMPRFM | 22.84 | 21.95 | .310 | .399 | 1.16 |
| SUPCOM | SMPRFM | 23.24 | 25.2 | .228 | .247 | 1.16 |
| TOPMAN | SMPRFM | 25.32 | 27.5 | .295 | .316 | 1.16 |
| WORKGRP | SMPRFM | 15.92 | 18.06 | .282 | .334 | 1.24 |

**Table H1.5** **Ratio of Within Sub-group Error Variance for Involuntary Job Change (group 1 = zero involuntary change, group 2 = 1 or more involuntary changes).**

| Dependent Var,Y | Contin. var. X | Std deviations for Y | | $r_{xy}$ | $r_{xy}$ | Ratio |
|---|---|---|---|---|---|---|
| | | no invol. change | >= 1 invol. change | no invol. change | >= 1 invol. change | |
| SMACS | SMPOS | 8.73 | 8.29 | .667 | .713 | 1.25 |
| SMNEWOCS | SMPOS | 9.48 | 9.82 | .547 | .537 | 1.09 |
| ORGCOM | SMPOS | 21.87 | 25.70 | .533 | .631 | 1.16 |
| SUPCOM | SMPOS | 23.11 | 26.29 | .357 | .476 | 1.15 |
| TOPMAN | SMPOS | 25.31 | 27.67 | .550 | .591 | 1.11 |
| WORKGRP | SMPOS | 16.19 | 17.12 | .356 | .385 | 1.09 |
| | | | | | | |
| SMACS | SMPRFM | 8.73 | 8.29 | .384 | .479 | 1.23 |
| SMNEWOCS | SMPRFM | 9.48 | 9.82 | .451 | .623 | 1.22 |
| ORGCOM | SMPRFM | 21.87 | 25.70 | .334 | .339 | 1.21 |
| SUPCOM | SMPRFM | 23.11 | 26.29 | .243 | .154 | 1.34 |
| TOPMAN | SMPRFM | 25.31 | 27.67 | .296 | .320 | 1.18 |
| WORKGRP | SMPRFM | 16.19 | 17.12 | .289 | .356 | 1.07 |

# APPENDIX I. STRUCTURAL EQUATION MODELLING OF INTERACTION EFFECTS

By far the most common means of testing for interaction effects in the organisation science literature is with multiple moderated regression. A less common, but more powerful, approach utilises structural equation modelling (see Jaccard and Wan, 1996; Schumaker and Lomax, 1996). The attraction of SEM to researchers lies largely in its ability to handle measurement errors in observed and latent variables (a latent variable, such as commitment, is one that cannot be measured directly). To complement the construct validation study, SEM was applied following a procedure suggested by Schumaker and Lomax (1996, pp.209-221). I emphasise that this is an important methodological component to this thesis as the number of researchers who have utilised SEM when testing for interactions appears to be low (see Moorman et al., 1998). The mechanics of using SEM for this purpose are considerably more complex than MMR and require the researcher to specify a model for each interaction and to undertake a set of manual calculations to provide the input data for each model. Accordingly, SEM was only used to cross-check interactions with SMNEWOCS as the dependent variable.

## Perceived Support and Social Exchange

Consistent with MMR, SEM indicated an interaction effect of support on exchange when tenure was less than two years. The estimated regression path between the latent interaction term and the latent new commitment scale was 0.229 with a critical ratio of 2.59 (a ratio above 1.96 suggests that there is at least a 1 in 20 probability that the path is significantly different from zero). Also consistent with MMR, SEM did not detect support-exchange interactions on SMNEWOCS for the full sample or for union members. These results are taken to indicate that the positive finding for low tenure employees is not simply a statistical artefact and, given its detection by two analytical methods, appears to be a robust finding. SEM was unable to provide a regression estimate when the sample group had experienced one or more involuntary job changes due to a negative variance estimate

on one of the parameters in the model. Variances cannot be negative and this is presumed to be a consequence of the low sample size for this sub-group (Arbuckle, 1997, p.305).

**SEM Procedures for Testing Interactions**

All variables added to measurement models were centred before estimates were made. Suppose two independent variables, X1 and X2, are each measured by three items X1a, X1b, X1c and X2a, X2b and X2c. Suppose also that the two independent variables interact to influence a dependent variable that is measured through two observed variables Y1 and Y2.

Following a procedure suggested by Schumaker and Lomax (1996, pp.210-215) a measurement model is first tested in order to determine the factor loading of observed onto latent variables, latent factor variances and error variances of observed variables. The measurement model in its general form using the illustration above is shown in Figure A?.?

With these estimates obtained, the interaction model is then constructed in which estimates for the factor loadings and error variances of the products of the observed variables are computed. Given that there are three observed variables for each independent variable, there will be 9 (3 x 3) interaction terms for which factor loadings and error variances need to be estimated. The factor loadings are estimated through,

$$\lambda X1a.\lambda X2a,\ \lambda X1a.\lambda X2b.....\lambda X1c.\lambda X2c$$

The formula for computing the error variances of each interaction term is, in the example case of X1a and X2a,

$$(\lambda_{X1a})^2(\text{varX1})(\text{e.v.}\lambda_{X2a}) + (\lambda_{X2a})^2(\text{varX2})(\text{e.v.}\lambda_{X1a})$$

The estimated factor loadings and error variances for each of the nine (in this example) interaction terms are then added to the interaction model shown in Figure A?.?

Remaining to be estimated in the model are the regression paths from the latent interaction term to the dependent variable and the error variance of the interaction term. If a significant regression path is obtained, then this indicates the presence of an interaction effect. There is however a complication arising in that the number of estimated observed variables for the interaction term is the product of the number of items for each variable. In this study, perceived support was measured through 9 items and social exchange by 4 items, and so the latent interaction term would be measured through 36 estimated variables. When the number of indicators for a latent variable is high then estimates become unstable and the number of indicators is best kept below 10. Hence, to assess the support-exchange interaction, 3 items were selected from the perceived support scale and 3 were selected from the social exchange scale. The criteria for selection were, for perceived support, that they contained distinctive wording, and for social exchange the 3 giving the best inter-item correlation were chosen. Thus 9 'observed' variables for the interaction terms were estimated.

Professionalism interactions were more problematic in that the professionalism scale is multidimensional (as opposed to the unidimensional support scale) and was measured via 18 items in 5 scales yielding, potentially, 18 x 4 estimates of factor loadings and error variances when combined with all exchange scale items. The measurement model attempted incorporated all 5 professionalism sub-scales and to overcome the problem of having too many latent variable indicators, total scores for the 5 sub-scales were multiplied by the 4 exchange items to give 20 cross-product terms. The four cross-product terms for each professionalism sub-scale were then summed into one term to represent the interaction between exchange and the professionalism sub-scales. However, interpretable results were not obtained through this procedure and further work is necessary to address the problem of incorporating a multi-dimensional scale into SEM interactions. One approach would be to test each sub-scale independently with exchange as this might identify which of the sub-scales are contributing to the observed interactions.

# APPENDIX J THE PREDICTION OF THE DIMENSIONS OF BEHAVIOURAL COMMITMENT

The following tables contain additional multiple regression statistics showing the prediction of the three dimensions of behavioural commitment: commitment to goals, effort directed at goal achievement, and, innovation. The three sample groups were: management accountants (CIMA), public finance accountants (CIPFA) and members of the Royal Society of Chemistry (RSC). Stepwise regression was used and the significance limit for acceptance of a variable into the regression equation was set at .1.

Variable labels are explained in Tables 7.1 and 7.2 of chapter 7. The variables offered to stepwise regression were

- perceived organisational support (SMPOS)
- commitment to the profession (SMPC)
- professional autonomy (SMPMA)
- use of the profession as referent (SMPMR)
- belief in service to the public (SMPMB)
- belief in self-regulation (SMPMS)
- continuance commitment (SMCC)
- social exchange ideology (SMEI)
- job insecurity (SMJINSEC)
- age (AGE)
- tenure (TENURE)
- scope for advancement (SMADV)
- sex of respondent (SEX, 1=female, 0=male)
- union membership (UNION, 1=member, 0=non-member)
- prior involuntary job change (1=yes, 0=no)

**Table J1 Prediction of Commitment to Goals, CIMA**

| Variable | $R^2$ | $\Delta R^2$ | F(eqn) | sig. F | beta | t | sig. T |
|---|---|---|---|---|---|---|---|
| SMPC | .408 | .408 | 88.9 | .000 | .206 | 3.05 | .003 |
| SMPOS | .448 | .04 | 52.0 | .000 | .591 | 8.75 | .000 |

[df 2, 128].

**Table J2 Prediction of Commitment to Goals, CIPFA**

| Variable | $R^2$ | $\Delta R^2$ | F(eqn) | sig. F | beta | t | sig. T |
|---|---|---|---|---|---|---|---|
| SMPOS | .599 | .599 | 236.1 | .000 | .688 | 13.28 | .000 |
| SMPC | .646 | .047 | 143.2 | .000 | .206 | 4.08 | .000 |
| SMPMA | .662 | .016 | 101.7 | .000 | .132 | 2.72 | .007 |
| SMPMS | .671 | .009 | 79.1 | .000 | -.104 | -2.17 | .032 |
| TENURE | .678 | .007 | 64.9 | .000 | .084 | 1.83 | .069 |

[df 5, 154]

**Table J3 Prediction of Commitment to Goals, RSC**

| Variable | $R^2$ | $\Delta R^2$ | F(eqn) | sig. F | beta | t | sig. T |
|---|---|---|---|---|---|---|---|
| SMPOS | .524 | .524 | 304.1 | .000 | .564 | 11.94 | .000 |
| AGE | .556 | .032 | 172.0 | .000 | .138 | 3.43 | .001 |
| SMPC | .575 | .019 | 123.5 | .000 | .137 | 3.08 | .002 |
| SMJINSEC | .586 | .011 | 96.4 | .000 | -.114 | -2.62 | .010 |
| SMEI | .595 | .009 | 80.0 | .000 | -.103 | -2.65 | .009 |
| SMPMA | .600 | .005 | 67.8 | .000 | .075 | 1.84 | .067 |
| SMPMB | .606 | .006 | 59.0 | .000 | .071 | 1.78 | .076 |

[df 7, 270]

**Table J4 Prediction of Achievement, CIMA**

| Variable | $R^2$ | $\Delta R^2$ | F(eqn) | sig. F | beta | t | sig. T |
|---|---|---|---|---|---|---|---|
| SMPMA | .052 | .052 | 7.1 | .009 | .229 | 2.67 | .009 |

[df 1, 129]

**Table J5 Prediction of Achievement, CIPFA**

| Variable | $R^2$ | $\Delta R^2$ | F(eqn) | sig. F | beta | t | sig. T |
|---|---|---|---|---|---|---|---|
| SMPOS | .096 | .096 | 17.0 | .000 | .252 | 3.20 | .001 |
| SMPMA | .125 | .029 | 12.4 | .000 | .178 | 2.36 | .019 |
| SEX | .148 | .023 | 10.3 | .000 | -.160 | -2.17 | .031 |
| SMPMR | .158 | .010 | 8.4 | .000 | .125 | 1.66 | .099 |

[df 4, 156]

**Table J6 Prediction of Achievement, RSC**

| Variable | $R^2$ | $\Delta R^2$ | F(eqn) | sig. F | beta | t | sig. T |
|---|---|---|---|---|---|---|---|
| SMPMA | .095 | .095 | .000 | 29.2 | .251 | 4.20 | .000 |
| AGE | .111 | .016 | .000 | 17.4 | .136 | 2.37 | .019 |
| SMJINSEC | .127 | .016 | .000 | 13.4 | -.129 | -2.21 | .027 |
| SMEI | .139 | .012 | .000 | 11.1 | -.112 | -2.00 | .047 |

[df 4, 275]

**Table J7 Prediction of Innovation, CIMA**

| Variable | $R^2$ | $\Delta R^2$ | F(eqn) | sig. F | beta | t | sig. T |
|---|---|---|---|---|---|---|---|
| SMPC | .086 | .086 | 12.2 | .001 | .250 | 2.89 | .005 |
| SMCC | .115 | .029 | 8.4 | .000 | -.175 | -2.02 | .045 |
| SMEI | .138 | .023 | 6.9 | .000 | .155 | 1.88 | .062 |

[df 3, 128]

**Table J8 Prediction of Innovation, CIPFA**

| Variable | $R^2$ | $\Delta R^2$ | F(eqn) | sig. F | beta | t | sig. T |
|---|---|---|---|---|---|---|---|
| SMPMA | .074 | .074 | 12.8 | .000 | .201 | 2.59 | .010 |
| SMPMR | .106 | .032 | 9.4 | .000 | .194 | 2.56 | .011 |
| SEX | .129 | .023 | 7.8 | .000 | -.172 | -2.29 | .024 |
| SMJINSEC | .146 | .017 | 6.7 | .000 | -.139 | -1.77 | .078 |

[df 4, 156]

**Table J9 Prediction of Innovation, RSC**

| Variable | $R^2$ | $\Delta R^2$ | F(eqn) | sig. F | beta | t | sig. T |
|---|---|---|---|---|---|---|---|
| SMPMA | .092 | .092 | 28.2 | .000 | .240 | 4.21 | .000 |
| SMCC | .125 | .033 | 19.8 | .000 | -.178 | -3.06 | .002 |
| AGE | .151 | .026 | 16.4 | .000 | .194 | 2.92 | .004 |
| SMPC | .163 | .012 | 13.4 | .000 | .103 | 1.75 | .081 |
| TENURE | .173 | .010 | 11.5 | .000 | -.129 | -2.00 | .047 |
| SMPMB | .182 | .009 | 10.2 | .000 | .100 | 1.76 | .079 |

[df 6, 274]

# APPENDIX K REGRESSION EQUATIONS FOR INTERACTION EFFECTS

This appendix contains additional regression statistics for each test of an interaction when the significance of the interaction term was =< 0.1. The statistics relate to the summary tables of F statistics, i.e. Tables 8.5, 8.7, 8.9, 8.10 and 8.11 in chapter 8.

To facilitate comparisons across the sample and the dependent variables, the beta weights in each MMR equation are summarised in Tables K1-K5. The value of the regression constant and the F value of the interaction term are also given in these tables.

Tables KA to KJ summarise the contribution of each variable (step) when added to each MMR equation. The first row of each table gives the sample group for which the interaction test was conducted, the dependent variable (DV), and the equation degrees of freedom (df). Following the conventions in the literature, data are given for

- $R^2$,
- adjusted $R^2$ (for large samples, this is close to $R^2$),
- the F value for the regression equation at each step,
- the significance of the equation F value at each step,
- beta (standardized partial regression coefficient) for each step,
- the t statistic for each standardized partial regression coefficient, and,
- the significance of the t statistic

The F value for the increase in $R^2$ brought about by adding the interaction term is given underneath each table ($F_{int}$) and can be used to link each table with the interactions summarised in Tables 8.4-8.10 and discussed in chapter 8. The change in $R^2$ generated by a particular step ($\Delta R^2$) can be obtained by deducting the $R^2$ value obtained for the previous step, e.g. $R^2$ at step 3 minus $R^2$ at step 2.

Tables KA1 to KE6 relate to tables 8.5-8.11 (chapter 8) and are arranged first by dependent variables in the following order

SMACS, ORGCOM, SMNEWOCS, SUPCOM, SMFCSSP, WORKGP, SMFCSWG, TOPMAN, SMFCSTM

and within each of the above dependent variables they are arranged by sub-group

All cases, CIMA, CIPFA, RSC, men, women, union, non-union, tenure <2y, IVC=0, IVC=1, IVC>=1, IVC >1, age >50y. (IVC denotes Involuntary Job Change).

Tables KF1-KJ21 give additional regression statistics for the computed interactions on the three dimensions of the behavioural commitment scale.

All predictor variables were centred prior to computing the regression equations except where a qualitative moderator variable was examined, in which case centring was not necessary. The codes used for centred variables, which are given in Tables KA-KJ were as follows.

- CENPOS Perceived Organisational Support
- CENTPC_A Professionalism (commitment to the profession + professional autonomy)
- CENTEI Social Exchange Ideology .
- CENTCC Continuance Commitment
- CENTJINS Job Insecurity

Interaction (cross-product terms) obtained from centred variables were given the prefix 'X' and were

- XCENPSEI Perceived Support and Social Exchange
- XCNEIPCA Professionalism and Social Exchange
- XCNJIPCA Professionalism and Job Insecurity
- XCNCCPCA Professionalism and Continuance Commitment

**Table K1A.** Beta weights (p<.1) for main effects and interaction terms : Perceived Support and Social Exchange Interactions

| | DEPENDANT VARIABLE | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| GROUP | AFFECTIVE COMMITMENT | | | | | RESPONDENT-DEFINED COMMITMENT | | | | | BEHAVIOURAL COMMITMENT | | | | |
| | F | POS | SEI | POS.EI | C | F | POS | SEI | POS.EI | C | F | POS | SEI | POS.EI | C |
| ALL | | | | | | | | | | | | | | | |
| CIMA | | | | | | | | | | | | | | | |
| CIPFA | | | | | | 3.43 | .56 | -.16 | .12 | 76.5 | | | | | |
| RSC | | | | | | | | | | | | | | | |
| MEN | | | | | | | | | | | | | | | |
| WOMEN | | | | | | | | | | | | | | | |
| NON-UNION | | | | | | | | | | | | | | | |
| UNION | | | | | | 6.86 | .56 | -.14 | .19 | 75.5 | | | | | |
| TENURE<2 | | | | | | 3.44 | .46 | NS | .18 | 73.9 | 7.02 | .53 | -.24 | .22 | 52.2 |
| IVC=0 | | | | | | | | | | | | | | | |
| IVC>1 | 3.00 | .81 | NS | .24 | 33.6 | | | | | | 2.75 | .50 | NS | .17 | |
| IVC>=1 | 2.77 | .69 | NS | .12 | 34.5 | | | | | | 3.46 | .51 | NS | .17 | 53.6 |
| AGE>50 | | | | | | 3.09 | 50 | -.28 | .16 | 77.7 | | | | | |
| IVC=1 | 2.75 | .69 | NS | .12 | | | | | | | 2.75 | .50 | NS | .17 | 54.5 |
| Affective Commitment = SMACS. | | | | | | Respondent=Defined Commitment = ORGCOM | | | | | Behavioural Commitment = SMNEWOCS | | | | |

NS = not significant (p<.1)
IVC = Involuntary job change

POS.EI = denotes Interaction term
F = F value for increas in R squared caused by the interaction term.

C = equation constant

**Table K1B.** Beta weights (p<.1) for main effects and interaction terms : Perceived Support and Social Exchange Interactions

| | DEPENDENT VARIABLE | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SUPCOM | | | | | TOPMAN | | | | | WORKGP | | | | |
| Group | F | POS | EI | POS.EI | C | F | POS | EI | POS.EI | C | F | POS | EI | POS.EI | C |
| All | 3.68 | .36 | -.09 | .07 | 73.4 | | | | | | 4.89 | .34 | -.11 | .08 | 85.3 |
| CIMA | | | | | | | | | | | | | | | |
| CIPFA | | | | | | | | | | | | | | | |
| RSC | | | | | | | | | | | | | | | |
| Men | 2.75 | .34 | -.09 | .07 | 74.0 | | | | | | 4.80 | .34 | -.11 | .09 | 86.6 |
| Women | | | | | | | | | | | | | | | |
| Non-Union | | | | | | | | | | | 4.04 | .30 | -.10 | .08 | 85.3 |
| Union | | | | | | | | | | | | | | | |
| tenure<2 | | | | | | | | | | | | | | | |
| IVC=0 | 4.58 | .33 | -.10 | .09 | 73.4 | | | | | | 2.94 | .33 | -.09 | .07 | 85.2 |
| IVC=1 | | | | | | | | | | | 3.20 | .29 | -.31 | .19 | 87.1 |
| IVC>1 | 6.22 | .60 | NS | -.38 | 69.5 | | | | | | | | | | |
| age>50 | | | | | | | | | | | | | | | |
| IVC>=1 | | | | | | | | | | | | | | | |

SUPCOM = Commitment to Supervisor.
IVC = Involuntary job change
F = F value for increase in R squared caused by the interaction term

TOPMAN = Commitment to Top Management.
POS.EI = denotes interaction term.

WORKGP = Commitment to Workgroup
C = Equation Constant
MS = Not significant (p<.1)

**Table K1C.** Beta weights (p<.1) for main effects and interaction terms : Perceived Support and Social Exchange Interactions

| | DEPENDENT VARIABLE | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SMFCSSP | | | | | SMFCSTM | | | | | SMFCSWG | | | | |
| Group | F | POS | EI | POS.EI | C | F | POS | EI | POS.EI | C | F | POS | EI | POS.EI | C |
| All | | | | | | | | | | | | | | | |
| CIMA | | | | | | | | | | | | | | | |
| CIPFA | | | | | | | | | | | | | | | |
| RSC | | | | | | | | | | | | | | | |
| Men | | | | | | | | | | | 2.82 | ..38 | NS | .09 | 23.2 |
| Women | | | | | | | | | | | | | | | |
| Non-Union | 3.16 | .49 | NS | -.07 | 17.0 | | | | | | | | | | |
| Union | | | | | | 4.22 | .62 | NS | .15 | 14.3 | | | | | |
| tenure<2 | | | | | | | | | | | | | | | |
| IVC=0 | | | | | | | | | | | 3.69 | ..38 | NS | .08 | 23.1 |
| IVC=1 | | | | | | | | | | | | | | | |
| IVC>1 | 2.86 | .57 | .30 | -.28 | 18.0 | | | | | | | | | | |
| age>50 | | | | | | | | | | | | | | | |
| IVC>=1 | 4.22 | .50 | NS | -.19 | 17.1 | | | | | | | | | | |

SMFCSSP = Commitment to Supervisor.
SMFCSTM = Commitment to Top Management.
SMFCSWG = Commitment to Work Group
IVC = Involuntary job change
POS.EI = denotes interaction term.
C = Equation Constant
F = F value for increase in R squared caused by the interaction ternm
NS = Not significant (p<.1)
POS.EI = denotes Interaction term

**Table K2A.** Beta weights (p<.1) for main effects and interaction terms: Professionalism and Social Exchange Interactions

| | DEPENDANT VARIABLE | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| GROUP | AFFECTIVE COMMITMENT | | | | | RESPONDENT-DEFINED COMMITMENT | | | | | BEHAVIOURAL COMMITMENT | | | | |
| | F | PFM | SEI | PFM.EI | C | F | PFM | SEI | PFM.EI | C | F | PFM | SEI | PFM.EI | C |
| ALL | 8.76 | .41 | -.08 | .11 | 35.1 | 7.63 | .34 | -.17 | .10 | 74.0 | 6.66 | .50 | -.11 | .09 | 53.3 |
| CIMA | | | | | | | | | | | | | | | |
| CIPFA | 11.93 | .35 | NS | .25 | 34.9 | 15.75 | .38 | -.19 | .27 | 74.9 | 10.17 | .49 | NS | .22 | 52.6 |
| RSC | | | | | | | | | | | | | | | |
| MEN | 5.76 | .43 | -.08 | .10 | 35.6 | 5.19 | .37 | -.17 | .09 | 74.5 | 5.46 | .49 | -.14 | .10 | 53.7 |
| WOMEN | | | | | | | | | | | | | | | |
| NON-UNION | | | | | | | | | | | | | | | |
| UNION | 9.56 | .41 | NS | .25 | 34.6 | 14.6 | .42 | -.21 | .29 | 74.0 | 11.2 | .47 | NS | .26 | 52.2 |
| TENURE<2 | | | | | | | | | | | 4.86 | .57 | -.22 | .19 | 52.7 |
| IVC=0 | 8.94 | .41 | -.08 | .11 | 35.6 | 9.81 | .35 | -.17 | .13 | 74.8 | 4.35 | .47 | -.11 | .08 | 53.5 |
| IVC>1 | | | | | | | | | | | | | | | |
| IVC>=1 | | | | | | | | | | | | | | | |
| AGE>50 | | | | | | | | | | | | | | | |
| IVC=1 | | | | | | | | | | | | | | | |
| Affective Commitment = SMACS. | | | | | | Respondent=Defined Commitment = ORGCOM | | | | | Behavioural Commitment = SMNEWOCS | | | | |

PFM.EI = denotes the interaction term. NS = not significant (p<.1) IVC = Involuntary job change
C = Equation Constant F = F value for increase in R squared caused by the interaction ternm

**Table K2B.** Beta weights (p<.1) for main effects and interaction terms : Professionalism and Social Exchange Interactions

| | DEPENDENT VARIABLE | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SUPCOM | | | | | TOPMAN | | | | | WORKGP | | | | |
| Group | F | PFM | EI | PFM.EI | C | F | PFM | EI | PFM.EI | C | F | PFM | EI | PFM.EI | C |
| All | 4.94 | .19 | -.13 | .08 | 73.2 | 6.77 | .29 | -.16 | .10 | 62.3 | 11.1 | .27 | -.14 | .12 | 85.2 |
| CIMA | | | | | | | | | | | | | | | |
| CIPFA | | | | | | 6.55 | .37 | -.14 | .19 | 66.5 | 5.23 | .27 | -.27 | .17 | 86.3 |
| RSC | | | | | | 3.11 | .34 | -.13 | .09 | 60.0 | | | | | |
| Men | | | | | | 7.77 | .30 | -.16 | .12 | 63.2 | 4.58 | .32 | -.14 | .09 | 86.6 |
| Women | | | | | | | | | | | 6.81 | .23 | -.23 | .22 | 79.7 |
| Non-Union | 2.85 | .18 | -.08 | .08 | 72.7 | 2.97 | .29 | -.14 | .07 | 62.1 | 6.10 | .25 | -.12 | .11 | 85.3 |
| Union | | | | | | 3.45 | .31 | -.17 | .16 | 63.0 | 3.57 | .33 | -.19 | .16 | 85.0 |
| tenure<2 | | | | | | 5.26 | .29 | -.17 | .23 | 65.0 | | | | | |
| IVC=0 | 10.8 | .22 | -.14 | .09 | 73.5 | 5.43 | .29 | -.16 | .10 | 62.9 | 9.80 | .29 | -.12 | .13 | 85.4 |
| IVC=1 | | | | | | | | | | | | | | | |
| IVC>1 | | | | | | | | | | | | | | | |
| age>50 | | | | | | | | | | | | | | | |
| IVC>=1 | | | | | | | | | | | | | | | |

SUPCOM = Commitment to Supervisor.
TOPMAN = Commitment to Top Management.
WORKGP = Commitment to Workgroup
IVC = Involuntary job change
C = Equation Constant
NS = Not Siognificant (p<.1)
F = F value for increase in R squared caused by adding the interation term.
PFM.EI = denotes the interaction term.

**Table K2C** Beta weights (p<.1) for main effects and interaction terms : Professionalism and Social Exchange Interactions

| | DEPENDENT VARIABLE | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SMFCSSP | | | | | SMFCSTM | | | | | SMFCSWG | | | | |
| Group | F | PFM | EI | PFM.EI | C | F | PFM | EI | PFM.EI | C | F | PFM | EI | PFM.EI | C |
| All | | | | | | | | | | | | | | | |
| CIMA | | | | | | | | | | | | | | | |
| CIPFA | 3.19 | .29 | NS | .14 | 17.4 | | | | | | 3.59 | .27 | NS | .15 | 22.6 |
| RSC | | | | | | | | | | | | | | | |
| Men | | | | | | | | | | | | | | | |
| Women | | | | | | | | | | | | | | | |
| Non-Union | | | | | | | | | | | | | | | |
| Union | | | | | | | | | | | | | | | |
| tenure<2 | | | | | | | | | | | | | | | |
| IVC=0 | | | | | | | | | | | | | | | |
| IVC=1 | | | | | | | | | | | | | | | |
| IVC>1 | | | | | | | | | | | | | | | |
| age>50 | | | | | | | | | | | | | | | |
| IVC>=1 | | | | | | | | | | | | | | | |

SMFCSSP = Commitment to Supervisor.
SMFCSTM = Commitment to Top Management.
SMFCSWG = Commitment to Work Group
IVC = Involuntary job change
C = Equation Constant
NS = Not Significant (p<.1)
F = F value for increase in R squared caused by adding the interaction term.
PFM.EI = denotes the interaction term.

**Table K3A.** Beta weights (p<.1) for main effects and interaction terms: Professionalism and Job Insecurity Interactions

| | DEPENDANT VARIABLE | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| GROUP | AFFECTIVE COMMITMENT | | | | | RESPONDENT-DEFINED COMMITMENT | | | | | BEHAVIOURAL COMMITMENT | | | | |
| | F | PFM | JI | PFM.JI | C | F | PFM | JI | PFM.JI | C | F | PFM | JI | PFM.JI | C |
| ALL | | | | | | | | | | | | | | | |
| CIMA | | | | | | | | | | | | | | | |
| CIPFA | | | | | | | | | | | | | | | |
| RSC | | | | | | | | | | | | | | | |
| MEN | 3.15 | .42 | -.20 | -.08 | 35.0 | | | | | | 3.21 | .48 | -.20 | -.08 | 53.3 |
| WOMEN | 3.17 | .44 | -.16 | .16 | 33.1 | | | | | | | | | | |
| NON-UNION | | | | | | | | | | | | | | | |
| UNION | | | | | | | | | | | | | | | |
| TENURE<2 | | | | | | | | | | | | | | | |
| IVC=0 | 2.57 | .41 | -.17 | -.07 | 34.7 | | | | | | 2.87 | .46 | -.18 | -.07 | 52.9 |
| IVC>1 | | | | | | | | | | | | | | | |
| IVC>=1 | 2.71 | .38 | NS | -.18 | 33.9 | | | | | | | | | | |
| AGE>50 | | | | | | 3.45 | .27 | NS | -.23 | 81.8 | 3.08 | .48 | -.27 | -.18 | 54.4 |
| IVC=1 | | | | | | | | | | | | | | | |
| Affective Commitment = SMACS. | | | | | | Respondent=Defined Commitment = ORGCOM | | | | | Behavioural Commitment = SMNEWOCS | | | | |

NS = not significant (p<.1)
IVC = Involuntary job change

PFM.JI = denotes Interaction term
F = F vaue for increas in R squared caused by adding the interaction term.

C = Equation Constant

**Table K3B.** Beta weights (p<.1) for main effects and interaction terms : Professionalism and Job Insecurity Interactions

| | DEPENDENT VARIABLE | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SUPCOM | | | | | TOPMAN | | | | | WORKGP | | | | |
| Group | F | PFM | JI | PFM.JI | C | F | PFM | JI | PFM.JI | C | F | PFM | JI | PFM.JI | C |
| All | | | | | | | | | | | | | | | |
| CIMA | | | | | | | | | | | | | | | |
| CIPFA | | | | | | | | | | | | | | | |
| RSC | | | | | | | | | | | | | | | |
| Men | | | | | | 5.53 | .27 | -.23 | -.12 | 61.7 | | | | | |
| Women | | | | | | 7.87 | .33 | NS | .27 | 58.4 | 3.32 | .24 | NS | .19 | 80.1 |
| Non-Union | | | | | | | | | | | | | | | |
| Union | | | | | | | | | | | | | | | |
| tenure<2 | | | | | | | | | | | | | | | |
| IVC=0 | | | | | | | | | | | | | | | |
| IVC=1 | | | | | | | | | | | | | | | |
| IVC>1 | | | | | | | | | | | | | | | |
| age>50 | | | | | | 8.14 | NS | -.37 | -.31 | 61.5 | | | | | |
| IVC>=1 | | | | | | | | | | | | | | | |

SUPCOM = Commitment to Supervisor.
IVC = Involuntary job change
F = F value for increase in R squared caused by adding the interaction term.
TOPMAN = Commitment to Top Management.
NS = Not Significant (p<.1)
WORKGP = Commitment to Workgroup
C = Equation Constant
PFM.JI = denotes Interaction term

**Table K3C** Beta weights (p<.1) for main effects and interaction terms : Professionalism and Job Insecurity Interactions

| | DEPENDENT VARIABLE | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SMFCSSP | | | | | SMFCSTM | | | | | SMFCSWG | | | | |
| Group | F | PFM | JI | PFM.JI | C | F | PFM | JI | PFM.JI | C | F | PFM | JI | PFM.JI | C |
| All | 2.79 | .27 | -.15 | -.07 | 16.8 | | | | | | | | | | |
| CIMA | | | | | | | | | | | 3.01 | .35 | NS | -.14 | 23.0 |
| CIPFA | | | | | | | | | | | | | | | |
| RSC | | | | | | | | | | | | | | | |
| Men | | | | | | | | | | | | | | | |
| Women | | | | | | 2.72 | .43 | NS | .16 | 13.3 | | | | | |
| Non-Union | | | | | | | | | | | | | | | |
| Union | | | | | | | | | | | | | | | |
| tenure<2 | | | | | | | | | | | | | | | |
| IVC=0 | | | | | | | | | | | | | | | |
| IVC=1 | | | | | | | | | | | | | | | |
| IVC>1 | | | | | | | | | | | | | | | |
| age>50 | | | | | | 9.08 | .33 | -.34 | -.31 | 14.1 | | | | | |
| IVC>=1 | | | | | | | | | | | | | | | |

SMFCSSP = Commitment to Supervisor. SMFCSTM = Commitment to Top Management. SMFCSWG = Commitment to Work Group
NS = Not Significant (p<.1) C = Equation Constant PFM.JI = denotes Interaction term
F = F value for the increase in R squared caused by adding the interaction term.

**Table K5A.** Beta weights (p<.1) for main effects and interaction terms: Professionalism and Continuance Commitment Interactions

| | DEPENDANT VARIABLE | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| GROUP | AFFECTIVE COMMITMENT | | | | | RESPONDENT-DEFINED COMMITMENT | | | | | BEHAVIOURAL COMMITMENT | | | | |
| | F | PFM | CC | PFM.CC | C | F | PFM | CC | PFM.CC | C | F | PFM | CC | PFM.CC | C |
| ALL | | | | | | | | | | | 13.9 | .50 | -.09 | -.13 | 52.8 |
| CIMA | | | | | | | | | | | 5.72 | .39 | NS | -.20 | 54.2 |
| CIPFA | | | | | | | | | | | 7.44 | .48 | NS | -.19 | 51.9 |
| RSC | | | | | | | | | | | 4.30 | .53 | -.14 | -.11 | 53.0 |
| MEN | | | | | | | | | | | 13.1 | .50 | -.13 | -.14 | 53.3 |
| WOMEN | | | | | | | | | | | | | | | |
| NON-UNION | | | | | | | | | | | 5.33 | .50 | -.08 | -.10 | 53.2 |
| UNION | | | | | | 4.71 | .49 | NS | -.19 | 72.4 | 10.05 | .51 | -.15 | -.27 | 51.6 |
| TENURE<2 | | | | | | | | | | | | | | | |
| IVC=0 | | | | | | | | | | | 9.62 | .47 | -.09 | -.12 | 53.0 |
| IVC>1 | | | | | | | | | | | 2.98 | .59 | NS | -.27 | 49.4 |
| IVC>=1 | | | | | | | | | | | 5.28 | .63 | NS | -.18 | 52.4 |
| AGE>50 | 2.83 | .43 | -.23 | -.19 | 37.9 | | | | | | 15.4 | .68 | NS | -.41 | 53.9 |
| IVC=1 | | | | | | | | | | | | | | | |
| Affective Commitment = SMACS. | | | | | | Respondent=Defined Commitment = ORGCOM | | | | | Behavioural Commitment = SMNEWOCS | | | | |

NS = not significant (p<.1)
IVC = Involuntary job change

PFM.CC = denotes Interaction term C = Equation Constant
F = F value for increase in R squared caused by adding the interaction term.

**Table K5B.** Beta weights (p<.1) for main effects and interaction terms : Professionalism and Continuance Commitment Interactions

| | DEPENDENT VARIABLE | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SUPCOM | | | | | TOPMAN | | | | | WORKGP | | | | |
| Group | F | PFM | CC | PFM.CC | C | F | PFM | CC | PFM.CC | C | F | PFM | CC | PFM.CC | C |
| All | | | | | | | | | | | | | | | |
| CIMA | | | | | | | | | | | | | | | |
| CIPFA | | | | | | | | | | | | | | | |
| RSC | | | | | | | | | | | | | | | |
| Men | | | | | | 4.37 | .30 | -.14 | -.09 | 62.4 | | | | | |
| Women | | | | | | | | | | | | | | | |
| Non-Union | | | | | | | | | | | | | | | |
| Union | | | | | | 5.33 | .38 | NS | -.21 | 61.6 | | | | | |
| tenure<2 | | | | | | | | | | | | | | | |
| IVC=0 | | | | | | | | | | | | | | | |
| IVC=1 | | | | | | | | | | | | | | | |
| IVC>1 | | | | | | 3.30 | .36 | NS | -.30 | 55.1 | | | | | |
| age>50 | | | | | | 8.50 | .37 | NS | -.35 | 64.4 | | | | | |
| IVC>=1 | | | | | | 3.91 | .28 | -.21 | -.18 | 58.3 | | | | | |

SUPCOM = commitment to supervisor.
IVC = Involuntary job change
F = F value for increase in R squared caused by adding the interaction term.
TOPMAN = Commitment to Top Management.
NS = Not Significant (p<.1)
WORKGP = Commitment to Workgroup
C = Equation Constant
PFM.CC = denotes Interaction term

**Table K5C** Beta weights (p<.1) for main effects and interaction terms : Professionalism and Continuance Commitment Interactions

| | DEPENDENT VARIABLE | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SMFCSSP | | | | | SMFCSTM | | | | | SMFCSWG | | | | |
| Group | F | PFM | CC | PFM.CC | C | F | PFM | CC | PFM.CC | C | F | PFM | CC | PFM.CC | C |
| All | | | | | | | | | | | | | | | |
| CIMA | | | | | | | | | | | 6.81 | .30 | NS | -.20 | 22.4 |
| CIPFA | | | | | | | | | | | | | | | |
| RSC | | | | | | | | | | | | | | | |
| Men | | | | | | | | | | | | | | | |
| Women | | | | | | | | | | | | | | | |
| Non-Union | | | | | | | | | | | | | | | |
| Union | | | | | | 8.26 | .49 | NS | -.25 | 13.5 | | | | | |
| tenure<2 | | | | | | | | | | | | | | | |
| IVC=0 | | | | | | | | | | | | | | | |
| IVC=1 | | | | | | | | | | | | | | | |
| IVC>1 | 5.74 | NS | NS | -.41 | 17.2 | 4.99 | .44 | -.30 | -.33 | 13.5 | | | | | |
| age>50 | 2.82 | .36 | NS | -.20 | 17.1 | 5.85 | .50 | NS | -.28 | 15.2 | 4.28 | .56 | NS | -.24 | 22.9 |
| IVC>=1 | | | | | | | | | | | | | | | |

SMFCSSP = Commitment to Supervisor.
SMFCSTM = Commitment to Top Management.
SMFCSWG = Commitment to Work Group
IVC = Involuntary job change.
NS = Not Significant (p<.1)
C = Equation Constant
F = F value for increase in R squared caused by adding the interaction term.
PFM.CC = denotes Interaction term

## Tables KA1-KA20 Perceived Support and Social Exchange Interaction (Proposition P2)

### Table KA1 Support/Exchange, IVC>=1

| Group: IVC>=1 | | | DV: SMACS | | | df 3, 104 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpos | .509 | .504 | 109.7 | .000 | .69 | 10.1 | .000 |
| Step 2 | centei | .510 | .501 | 54.8 | .000 | -.009 | -.127 | ns |
| Step 3 | xcenpsei | .523 | .509 | 38.0 | .000 | .120 | 1.66 | .099 |

$F_{int}$=2.77

### Table KA2 Support/Exchange, IVC >1

| Group: IVC>1 | | | DV: SMACS | | | df 3,25 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpos | .551 | .534 | 33.1 | .000 | .810 | 6.08 | .000 |
| Step 2 | centei | .564 | .531 | 16.8 | .000 | .222 | 1.54 | ns |
| Step 3 | xcenpsei | .611 | .564 | 13.1 | .000 | .236 | 1.73 | .095 |

$F_{int}$=3.00

### Table KA3 Support/Exchange, Tenure <2 years

| Group: TENURE <2 | | | DV: ORGCOM | | | df 3, 79 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpos | .280 | .271 | 31.5 | .000 | .464 | 4.82 | .000 |
| Step 2 | centei | .298 | .281 | 17.0 | .000 | -.127 | -1.35 | ns |
| Step 3 | xcenpsei | .328 | .302 | 12.8 | .000 | .176 | 1.86 | .067 |

$F_{int}$=3.44

## Table KA4 Support/Exchange, Age > 50 years

| Group: AGE>50 | | | DV: ORGCOM | | | df 3,82 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpos | .221 | .212 | 23.9 | .000 | .502 | 5.41 | .000 |
| Step 2 | centei | .292 | .275 | 17.1 | .000 | -.281 | -3.07 | .003 |
| Step 3 | xcenpsei | .318 | .293 | 12.7 | .000 | .164 | 1.76 | .082 |

$F_{int}$=3.09

## Table KA5 Support/Exchange, Union Members

| Group: UNION MEMBERS | | | DV: ORGCOM | | | df 3,130 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpos | .360 | .355 | 75.1 | .000 | .556 | 8.29 | .000 |
| Step 2 | centei | .408 | .399 | 45.1 | .000 | -.145 | -1.96 | .051 |
| Step 3 | xcenpsei | .438 | .425 | 33.7 | .000 | .190 | 2.62 | .010 |

$F_{int}$= 6.86

## Table KA6 Support/Exchange, Tenure < 2 years

| Group: TENURE <2 | | | DV: SMNEWOCS | | | df 3,75 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpos | .369 | .361 | 45.0 | .000 | .533 | 6.22 | .000 |
| Step 2 | centei | .431 | .416 | 28.7 | .000 | -.245 | -2.92 | .005 |
| Step 3 | xcenpsei | .479 | .458 | 23.0 | .000 | .226 | 2.65 | .010 |

$F_{int}$=7.02

## Table KA7 Support/Exchange, IVC=1

| Group: IVC=1 | | | DV: SMNEWOCS | | | df 3,70 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpos | .271 | .261 | 26.8 | .000 | .499 | 4.92 | .000 |
| Step 2 | centei | .292 | .272 | 14.7 | .000 | -.099 | -.9 | ns |
| Step 3 | xcenpsei | .319 | .290 | 10.9 | .000 | .173 | 1.66 | .102 |

$F_{int}$= 2.75

**Table KA8 Support/Exchange, IVC>=1**

| Group: IVC>=1 | | | DV: SMNEWOCS | | | df 3,97 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpos | .288 | .281 | 40.1 | .000 | .510 | 6.01 | .000 |
| Step 2 | centei | .296 | .281 | 20.6 | .000 | -.035 | -.4 | ns |
| Step 3 | xcenpsei | .320 | .299 | 15.2 | .000 | .166 | 1.86 | .066 |

$F_{int}$=3.46

**Table KA9 Support/Exchange, IVC=0**

| Group: IVC=0 | | | DV: SUPCOM | | | df 3,509 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpos | .128 | .126 | 74.8 | .000 | .333 | 8.00 | .000 |
| Step 2 | centei | .139 | .136 | 41.3 | .000 | -.101 | -2.43 | .015 |
| Step 3 | xcenpsei | .147 | .142 | 29.2 | .000 | .089 | 2.15 | .032 |

$F_{int}$= 4.58

**Table KA10 Support/Exchange, IVC>1**

| Group: IVC>1 | | | DV: SUPCOM | | | df 3,25 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpos | .261 | .234 | 9.57 | .005 | .601 | 4.07 | .000 |
| Step 2 | centei | .401 | .355 | 8.70 | .001 | .239 | 1.49 | ns |
| Step 3 | xcenpsei | .521 | .463 | 9.05 | .000 | -.377 | -2.50 | .019 |

$F_{int}$= 6.22

**Table KA11 Support/Exchange, Non-Union**

| Group: NON-UNION | | | DV: SMFCSSP | | | df 3,472 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpos | .228 | .226 | 139.8 | .000 | .493 | 12.07 | .000 |
| Step 2 | centei | .231 | .228 | 71.0 | .000 | .053 | 1.31 | ns |
| Step 3 | xcenpsei | .236 | .231 | 48.6 | .000 | -.072 | -1.78 | .075 |

$F_{int}$=3.16

## Table KA12 Support/Exchange, IVC >=1

| Group: IVC>=1 | | | DV: SMFCSSP | | | df 3,100 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpos | .226 | .219 | 29.8 | .000 | .495 | 5.68 | .000 |
| Step 2 | centei | .226 | .211 | 14.8 | .000 | -.075 | -.82 | ns |
| Step 3 | xcenpsei | .258 | .235 | 11.6 | .000 | -.189 | -2.05 | .043 |

$F_{int}$ = 4.22

## Table KA13 Support/Exchange, IVC >=1

| Group: IVC > 1 | | | DV: SMFCSSP | | | df 2, 25 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpos | .208 | .179 | 7.1 | .013 | .567 | 3.52 | .002 |
| Step 2 | centei | .366 | .318 | 7.5 | .003 | .305 | 1.75 | .092 |
| Step 3 | xcenpsei | .431 | .363 | 6.3 | .002 | -.278 | -1.69 | .103 |

$F_{int}$ = 2.86

## Table KA14 Support/Exchange, Union Members

| Group: UNION MEMBERS | | | DV: SMFCSTM | | | df 3, 131 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpos | .393 | .388 | 86.0 | .000 | .620 | 9.09 | .000 |
| Step 2 | centei | .394 | .384 | 42.8 | .000 | .03 | .4 | ns |
| Step 3 | xcenpsei | .413 | .399 | 30.7 | .000 | .152 | 2.06 | .042 |

$F_{int}$=4.22

## Table KA15 Support/Exchange, All

| Group: ALL | | | DV: WORKGP | | | df 3, 621 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpos | .132 | .130 | 94.4 | .000 | .338 | 9.01 | .000 |
| Step 2 | centei | .146 | .143 | 53.1 | .000 | -.110 | -2.90 | .004 |
| Step 3 | xcenpsei | .152 | .148 | 37.2 | .000 | .083 | 2.21 | .027 |

$F_{int}$ = 4.89

## Table KA16 Support/Exchange, Men

| Group: MEN | | | DV: WORKGP | | | df 3, 489 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpos | .132 | .130 | 74.7 | .000 | .337 | 7.97 | .000 |
| Step 2 | centei | .146 | .143 | 41.9 | .000 | -.107 | -2.53 | .012 |
| Step 3 | xcenpsei | .155 | .149 | 29.8 | .000 | .093 | 2.19 | .029 |

$F_{int}$= 4.80

## Table KA17 Support/Exchange, Non-Union

| Group: NON-UNION | | | DV: WORKGP | | | df 3, 486 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | cenpos | .102 | .100 | 55.3 | .000 | .298 | 6.90 | .000 |
| Step 2 | centei | .112 | .108 | 30.6 | .000 | -.097 | -2.27 | .024 |
| Step 3 | xcenpsei | .119 | .113 | 21.9 | .000 | .086 | 2.01 | .045 |

$F_{int}$=4.04

## Table KA18 Support/Exchange, IVC=0

| Group: IVC=0 | | | DV: WORKGP | | | df 3, 510 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | cenpos | .128 | .126 | 74.8 | .000 | .337 | 8.07 | .000 |
| Step 2 | centei | .136 | .132 | 40.1 | .000 | -.086 | -2.05 | .041 |
| Step 3 | xcenpsei | .141 | .136 | 27.8 | .000 | .071 | 1.71 | .087 |

$F_{int}$=2.94

## Table KA19 Support/Exchange, IVC=1

| Group: IVC=1 | | | DV: WORKGP | | | df 3,75 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | cenpos | .109 | .097 | 9.4 | .003 | .294 | 2.91 | .005 |
| Step 2 | centei | .251 | .231 | 12.7 | .000 | -.316 | -3.04 | .003 |
| Step 3 | xcenpsei | .282 | .253 | 9.8 | .000 | .190 | 1.79 | .077 |

$F_{int}$=3.20

## Table KA20 Support/Exchange, IVC=0

| Group: IVC=0 | | | DV: SMFCSWG | | | df 3, 502 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | cenpos | .156 | .154 | 92.9 | .000 | .382 | 9.22 | .000 |
| Step 2 | centei | .158 | .154 | 47.0 | .000 | -.035 | -.84 | ns |
| Step 3 | xcenpsei | .164 | .159 | 32.7 | .000 | .079 | 1.93 | .054 |

$F_{int}$=3.69

## Tables KB1-KB28 Professionalism/Social Exchange Interactions (Proposition P3)

### Table KB1 Professionalism/Exchange, All

| Group: All | | | DV: SMACS | | | df 3, 621 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpc_a | .176 | .175 | 133.5 | .000 | .410 | 11.34 | .000 |
| Step 2 | centei | .183 | .181 | 69.7 | .000 | -.078 | -2.15 | .032 |
| Step 3 | xcneipca | .195 | .191 | 50.0 | .000 | .107 | 2.96 | .003 |

$F_{int} = 8.76$

### Table KB2 Professionalism/Exchange, Men

| Group: Men | | | DV: SMACS | | | df 3, 488 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpc_a | .198 | .196 | 120.6 | .000 | .427 | 10.55 | .000 |
| Step 2 | centei | .204 | .201 | 62.7 | .000 | -.075 | -1.87 | .062 |
| Step 3 | xcneipca | .213 | .209 | 44.1 | .000 | .097 | 2.40 | .017 |

$F_{int} = 5.76$

### Table KB3 Professionalism/Exchange, Union Members

| Group: Union Members | | | DV: SMACS | | | df 3, 130 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpc_a | .165 | .159 | 26.1 | .000 | .406 | 5.29 | .000 |
| Step 2 | centei | .182 | .170 | 14.6 | .000 | -.04 | -.57 | ns |
| Step 3 | xcneipca | .238 | .221 | 13.6 | .000 | .252 | 3.10 | .002 |

$F_{int} = 9.56$

## Table KB4 Professionalism/Exchange IVC=0

| Group: IVC=0 | | | DV: SMACS | | | df 3, 510 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpc_a | .173 | .171 | 107.0 | .000 | .411 | 10.29 | .000 |
| Step 2 | centei | .179 | .176 | 55.8 | .000 | -.082 | -2.05 | .040 |
| Step 3 | xcneipca | .193 | .189 | 40.7 | .000 | .119 | 2.99 | .003 |

$F_{int} = 8.94$

## Table KB5 Professionalism/Exchange, All

| Group: All | | | DV: ORGCOM | | | df 3, 611 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpc_a | | | | | .344 | 9.28 | .000 |
| Step 2 | centei | .158 | .156 | 57.5 | .000 | -.165 | -4.47 | .000 |
| Step 3 | xcneipca | .169 | .165 | 41.3 | .000 | .102 | 2.77 | .006 |

$F_{int} = 7.63$

## Table KB6 Professionalism/Exchange, Men

| Group: Men | | | DV: ORGCOM | | | df 3, 481 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpc_a | .154 | .152 | 88.0 | .000 | .370 | 8.96 | .000 |
| Step 2 | centei | .183 | .180 | 54.1 | .000 | -.165 | -4.02 | .000 |
| Step 3 | xcneipca | .192 | .187 | 38.1 | .000 | .094 | 2.27 | .024 |

$F_{int} = 5.19$

## Table KB7 Professionalism/Exchange, Union Members

| Group: Union Members | | | DV: ORGCOM | | | df 3, 129 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpc_a | .183 | .178 | 29.4 | .000 | .417 | 5.85 | .000 |
| Step 2 | centei | .276 | .265 | 24.7 | .000 | -.208 | -2.76 | .007 |
| Step 3 | xcneipca | .349 | .334 | 23.1 | .000 | .288 | 3.82 | .002 |

$F_{int} = 14.61$

## Table KB8 Professionalism/Exchange, IVC=0

| Group: | | | DV: | | | df | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpc_a | .132 | .130 | 76.5 | .000 | .351 | 8.62 | .000 |
| Step 2 | centei | .161 | .158 | 48.1 | .000 | -.173 | -4.25 | .000 |
| Step 3 | xcneipca | .177 | .172 | 35.9 | .000 | .127 | 3.13 | .002 |

$F_{int} = 9.81$

## Table KB9 Professionalism/Exchange, All

| Group: All | | | DV: SMNEWOCS | | | df 3, 601 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpc_a | .254 | .253 | 205.5 | .000 | .495 | 14.20 | .000 |
| Step 2 | centei | .266 | .263 | 108.8 | .000 | -.106 | -3.04 | .002 |
| Step 3 | xcneipca | .274 | .270 | 75.4 | .000 | .090 | 2.57 | .010 |

$F_{int} = 6.66$

## Table KB10 Professionalism/Exchange, Men

| Group: Men | | | DV: SMNEWOCS | | | df 3, 473 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpc_a | .258 | .256 | 164.8 | .000 | .490 | 12.52 | .000 |
| Step 2 | centei | .276 | .273 | 90.5 | .000 | -.135 | -3.47 | .000 |
| Step 3 | xcneipca | .285 | .281 | 63.0 | .000 | .096 | 2.45 | .015 |

$F_{int} = 5.46$

## Table KB11 Professionalism/Exchange, Union Members

| Group: Union Members | | | DV: SMNEWOCS | | | df 3, 128 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpc_a | .200 | .194 | 32.5 | .000 | .474 | 6.25 | .000 |
| Step 2 | centei | .211 | .199 | 17.2 | .000 | -.03 | -.41 | ns |
| Step 3 | xcneipca | .275 | .258 | 16.2 | .000 | .264 | 3.36 | .001 |

$F_{int} = 11.26$

## Table KB12 Professionalism/Exchange, Tenure <2 years

| Group: Tenure < 2 | | | DV: SMNEWOCS | | | df 3, 75 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpc_a | .436 | .429 | 59.5 | .000 | .572 | 6.70 | .000 |
| Step 2 | centei | .477 | .463 | 34.6 | .000 | -.226 | -2.73 | .008 |
| Step 3 | xcneipca | .508 | .489 | 25.8 | .000 | .186 | 2.21 | .030 |

$F_{int} = 4.86$

## Table KB13 Professionalism/Exchange, IVC=0

| Group: IVC=0 | | | DV: SMNEWOCS | | | df 3, 497 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpc_a | .230 | .229 | 149.3 | .000 | .471 | 12.05 | .000 |
| Step 2 | centei | .242 | .239 | 79.5 | .000 | -.111 | -2.84 | .005 |
| Step 3 | xcneipca | .249 | .244 | 54.8 | .000 | .081 | 2.09 | .037 |

$F_{int} = 4.35$

## Table KB14 Professionalism/Exchange, All

| Group: All | | | DV: SUPCOM | | | df 3, 618 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpc_a | .042 | .040 | 26.9 | .000 | .190 | 4.89 | .000 |
| Step 2 | centei | .059 | .056 | 19.6 | .000 | -.130 | -3.33 | .001 |
| Step 3 | xcneipca | .067 | .062 | 14.7 | .000 | .086 | 2.21 | .027 |

$F_{int} = 4.94$

## Table KB15 Professionalism/Exchange, Non-Union

| Group: Non-Union | | | DV: SUPCOM | | | df 3, 483 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpc_a | .036 | .034 | 17.9 | .000 | .179 | 4.01 | .000 |
| Step 2 | centei | .041 | .037 | 10.4 | .000 | -.081 | -1.82 | .069 |
| Step 3 | xcneipca | .047 | .041 | 7.94 | .000 | .075 | 1.69 | .091 |

$F_{int} = 2.85$

## Table KB16 Professionalism/Exchange, IVC=0

| Group: IVC=0 | | | DV: SUPCOM | | | df 3, 508 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpc_a | .055 | .054 | 29.9 | .000 | .225 | 5.26 | .000 |
| Step 2 | centei | .075 | .071 | 20.6 | .000 | -.142 | -3.32 | .001 |
| Step 3 | xcneipca | .084 | .078 | 15.5 | .000 | .094 | 2.21 | .027 |

$F_{int}$ = 10.86

## Table KB17 Professionalism/Exchange, All

| Group: All | | | DV: WORKGP | | | df 3, 620 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpc_a | .085 | .084 | 58.0 | .000 | .276 | 7.31 | .000 |
| Step 2 | centei | .107 | .104 | 37.3 | .000 | -.143 | -3.80 | .000 |
| Step 3 | xcneipca | .123 | .119 | 29.0 | .000 | .126 | 3.33 | .001 |

$F_{int}$ = 11.16

## Table KB18 Professionalism/Exchange, Men

| Group: Men | | | DV: WORKGP | | | df 3, 488 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpc_a | .113 | .111 | 62.5 | .000 | .316 | 7.47 | .000 |
| Step 2 | centei | .134 | .131 | 37.9 | .000 | -.140 | -3.33 | .001 |
| Step 3 | xcneipca | .142 | .137 | 27.0 | .000 | .090 | 2.14 | .033 |

$F_{int}$ = 4.58

## Table KB19 Professionalism/Exchange, Women

| Group: Women | | | DV: WORKGP | | | df 3, 127 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpc_a | .039 | .032 | 5.2 | .023 | .230 | 2.67 | .009 |
| Step 2 | centei | .089 | .075 | 6.25 | .003 | -.231 | -2.77 | .006 |
| Step 3 | xcneipca | .135 | .115 | 6.63 | .000 | .224 | 2.61 | .010 |

$F_{int}$ = 6.81

## Table KB20 Professionalism/Exchange, IVC=0

| Group: IVC=0 | | | DV: WORKGP | | | df 3, 509 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpc_a | .091 | .089 | 50.9 | .000 | .293 | 7.02 | .000 |
| Step 2 | centei | .105 | .101 | 29.8 | .000 | -.121 | -2.91 | .004 |
| Step 3 | xcneipca | .122 | .116 | 23.5 | .000 | .130 | 3.13 | .002 |

$F_{int}$ = 9.80

## Table KB21 Professionalism/Exchange, Union Members

| Group: Union Members | | | DV: WORKGP | | | df 3, 129 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpc_a | .116 | .109 | 17.2 | .000 | .329 | 4.15 | .000 |
| Step 2 | centei | .176 | .163 | 13.9 | .000 | -.192 | -2.29 | .024 |
| Step 3 | xcneipca | .198 | .179 | 10.6 | .000 | .158 | 1.89 | .060 |

$F_{int}$ = 3.57

## Table KB22 Professionalism/Exchange, Non-union

| Group: Non-union | | | DV: WORKGP | | | df 3, 486 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpc_a | .073 | .071 | 38.2 | .000 | .255 | 5.89 | .000 |
| Step 2 | centei | .086 | .082 | 22.9 | .000 | -.123 | -2.85 | .005 |
| Step 3 | xcneipca | .097 | .092 | 17.5 | .000 | .107 | 2.46 | .014 |

$F_{int}$ = 6.10

## Table KB23 Professionalism/Exchange, All

| Group: All | | | DV: TOPMAN | | | df 3, 620 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpc_a | .096 | .094 | 65.6 | .000 | .293 | 7.80 | .000 |
| Step 2 | centei | .121 | .118 | 42.7 | .000 | -.156 | -4.14 | .000 |
| Step 3 | xcneipca | .130 | .126 | 31.0 | .000 | .097 | 2.60 | .009 |

$F_{int}$ = 6.77

## Table KB24 Professionalism/Exchange, Men

| Group: Men | | | DV: TOPMAN | | | df 3, 487 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpc_a | .106 | .104 | 58.0 | .000 | .301 | 7.13 | .000 |
| Step 2 | centei | .134 | .130 | 37.8 | .000 | -.160 | -3.80 | .000 |
| Step 3 | xcneipca | .148 | .142 | 28.1 | .000 | .118 | 2.79 | .006 |

$F_{int} = 7.77$

## Table KB25 Professionalism/Exchange, Union Members

| Group: Union Members | | | DV: TOPMAN | | | df 3, 130 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpc_a | .106 | .099 | 15.6 | .000 | .315 | 3.94 | .000 |
| Step 2 | centei | .155 | .142 | 12.0 | .000 | -.170 | -2.01 | .047 |
| Step 3 | xcneipca | .177 | .158 | 9.30 | .000 | .157 | 1.86 | .065 |

$F_{int} = 3.45$

## Table KB26 Professionalism/Exchange, Non-union

| Group: Non-union | | | DV: TOPMAN | | | df 3, 485 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpc_a | .091 | .089 | 48.8 | .000 | .287 | 6.69 | .000 |
| Step 2 | centei | .111 | .107 | 30.4 | .000 | -.147 | -3.42 | .001 |
| Step 3 | xcneipca | .117 | .111 | 21.3 | .000 | .074 | 1.72 | .086 |

$F_{int} = 2.97$

## Table KB27 Professionalism/Exchange, Tenure < 2 years

| Group: Tenure <2 | | | DV: TOPMAN | | | df 3, 80 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpc_a | .166 | .156 | 16.3 | .000 | .292 | 2.77 | .007 |
| Step 2 | centei | .192 | .172 | 9.6 | .000 | -.165 | -1.65 | .104 |
| Step 3 | xcneipca | .242 | .214 | | | .235 | 2.29 | .024 |

$F_{int} = 5.26$

## Table KB28 Professionalism/Exchange, IVC=0

| Group: IVC=0 | | | DV: TOPMAN | | | df 3, 510 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpc_a | .094 | .092 | 52.1 | .000 | .294 | 7.08 | .000 |
| Step 2 | centei | .118 | .115 | 34.2 | .000 | -.158 | -3.80 | .000 |
| Step 3 | xcneipca | .127 | .122 | 24.8 | .000 | .096 | 2.32 | .020 |

$F_{int} = 5.43$

## Tables KC1-KC15 Professionalism/Job Insecurity Interactions (Proposition, P4)

### Table KC1 Professionalism/Insecurity, Men

| Group: Men | | | DV: SMACS | | | df 3, 353 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpc_a | .235 | .233 | 108.9 | .000 | .420 | 8.72 | .000 |
| Step 2 | centjins | .287 | .264 | 65.0 | .000 | -.206 | -4.25 | .000 |
| Step 3 | xcnjipca | .275 | 269 | 44.6 | .000 | -.081 | -1.77 | .077 |

$F_{int} = 3.15$

### Table KC2 Professionalism/Insecurity, Women

| Group:Women | | | DV: SMACS | | | df 3, 96 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpc_a | .194 | .186 | 23.6 | .000 | .442 | 4.63 | .000 |
| Step 2 | centjins | .225 | .209 | 14.1 | .000 | -.162 | -1.76 | .082 |
| Step 3 | xcnjipca | .250 | .226 | 10.6 | .000 | .164 | 1.78 | .078 |

$F_{int} = 3.17$

### Table KC3 Professionalism/Insecurity, IVC=0

| Group: IVC=0 | | | DV: SMACS | | | df 3, 378 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpc_a | .221 | .219 | 107.7 | .000 | .411 | 8.71 | .000 |
| Step 2 | centjins | .244 | .240 | 61.2 | .000 | -.169 | -3.57 | .000 |
| Step 3 | xcnjipca | .249 | .243 | 41.9 | .000 | -.072 | -1.61 | .108 |

$F_{int} = 2.57$

## Table KC4 Professionalism/Insecurity, IVC >=1

| Group: IVC >=1 | | | DV: SMACS | | | df 3, 70 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpc_a | .203 | .192 | 18.4 | .000 | .376 | 3.50 | .001 |
| Step 2 | centjins | .238 | .217 | 11.1 | .000 | -.138 | -1.22 | ns |
| Step 3 | xcnjipca | .267 | .235 | 8.5 | .000 | .181 | 1.65 | .104 |

$F_{int} = 2.71$

## Table KC5 Professionalism/Insecurity, age >50

| Group: Age > 50 years | | | DV: ORGCOM | | | df 3, 56 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpc_a | .093 | .077 | 5.9 | .018 | .271 | 2.00 | .050 |
| Step 2 | centjins | .110 | .079 | 3.52 | .036 | -.135 | -1.00 | ns |
| Step 3 | xcnjipca | .162 | .117 | 3.6 | .019 | -.229 | -1.86 | .068 |

$F_{int} = 3.45$

## Table KC6 Professionalism/Insecurity, men

| Group: Men | | | DV: SMNEWOCS | | | df 3, 341 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpc_a | .296 | .294 | 144.1 | .000 | .479 | 10.20 | .000 |
| Step 2 | centjins | .328 | .324 | 83.5 | .000 | -.203 | -4.29 | .000 |
| Step 3 | xcnjipca | .334 | .329 | 57.1 | .000 | -.080 | -1.80 | .073 |

$F_{int} = 3.21$

## Table KC7 Professionalism/Insecurity, IVC=0

| Group: IVC=0 | | | DV: SMNEWOCS | | | df 3, 367 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpc_a | .272 | .270 | 137.5 | .000 | .458 | 9.45 | .000 |
| Step 2 | centjins | .300 | .296 | 78.8 | .000 | -.185 | -4.03 | .000 |
| Step 3 | xcnjipca | .305 | .300 | 53.8 | .000 | -.074 | -1.70 | .089 |

$F_{int} = 2.87$

## Table KC8 Professionalism/Insecurity, Age > 50 years

| Group: Age > 50 | | | DV: SMNEWOCS | | | df 3, 56 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpc_a | .329 | .318 | 28.5 | .000 | .476 | 4.26 | .000 |
| Step 2 | centjins | .397 | .376 | 18.8 | .000 | -.279 | -2.51 | .015 |
| Step 3 | xcnjipca | .429 | .399 | 14.0 | .000 | -.180 | -1.77 | .082 |

$F_{int} = 3.08$

## Table KC9 Professionalism/Insecurity, All

| Group: All | | | DV: SMFCSSP | | | df 3, 442 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpc_a | .099 | .097 | 49.0 | .000 | .265 | 5.63 | .000 |
| Step 2 | centjins | .118 | .113 | 29.5 | .000 | -.154 | -3.24 | .001 |
| Step 3 | xcnjipca | .123 | .117 | 20.7 | .000 | -.075 | -1.66 | .097 |

$F_{int} = 2.79$

## Table KC10 Professionalism/Insecurity, Women

| Group: Women | | | DV: WORKGP | | | df 3, 95 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpc_a | .036 | .026 | 3.6 | .060 | .239 | 2.24 | .027 |
| Step 2 | centjins | .037 | .016 | 1.8 | .167 | .002 | .02 | ns |
| Step 3 | xcnjipca | .069 | .040 | 2.3 | .077 | .188 | 1.82 | .071 |

$F_{int} = 3.32$

## Table KC11 Professionalism/Insecurity, Men

| Group: Men | | | DV: TOPMAN | | | df 3, 353 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpc_a | .118 | .115 | 47.3 | .000 | .272 | 5.29 | .000 |
| Step 2 | centjins | .158 | .154 | 33.2 | .000 | -.230 | -4.43 | .000 |
| Step 3 | xcnjipca | .171 | .164 | 24.3 | .000 | -.115 | -2.35 | .019 |

$F_{int} = 5.53$

## Table KC12 Professionalism/Insecurity, Women

| Group: WOMEN | | | DV: TOPMAN | | | df 3, 96 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpc_a | .091 | .082 | 9.8 | .002 | .335 | 3.37 | .001 |
| Step 2 | centjins | .120 | .102 | 6.6 | .002 | -.144 | -1.50 | ns |
| Step 3 | xcnjipca | .187 | .161 | 7.3 | .000 | .269 | 2.80 | .006 |

$F_{int} = 7.87$

## Table KC13 Professionalism/Insecurity, Age > 50 years

| Group: Age > 50 | | | DV: TOPMAN | | | df 3, 57 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpc_a | .088 | .072 | 5.7 | .020 | .175 | 1.44 | ns |
| Step 2 | centjins | .207 | .180 | 7.6 | .001 | -.367 | -3.03 | .004 |
| Step 3 | xcnjipca | .306 | .270 | 8.4 | .000 | -.316 | -2.85 | .006 |

$F_{int} = 8.14$

## Table KC14 Professionalism/Insecurity, Women

| Group: Women | | | DV: SMFCSTM | | | df 3, 93 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpc_a | .168 | .159 | 19.2 | .000 | .433 | 4.31 | .000 |
| Step 2 | centjins | .175 | .158 | 10.0 | .000 | -.067 | -.68 | ns |
| Step 3 | xcnjipca | .199 | .173 | 7.7 | .000 | .160 | 1.65 | .102 |

## Table KC15 Professionalism/Insecurity, Age > 50 years

| Group: Age>50 | | | DV: SMFCSSP | | | df 3, 56 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpc_a | .199 | .185 | 14.4 | .000 | .334 | 2.92 | .005 |
| Step 2 | centjins | .305 | .280 | 12.5 | .000 | -.344 | -3.02 | .004 |
| Step 3 | xcnjipca | .402 | .370 | 12.5 | .000 | -.313 | -3.01 | .004 |

$F_{int} = 9.08$

## Tables KD1-KD21 Professionalism/Continuance Commitment Interactions (Proposition P5)

### Table KD1 Professionalism/Continuance, Age > 50 years

| Group: Age > 50 | | | DV: SMACS | | | df 3, 82 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpc_a | .153 | .143 | 15.2 | .000 | .427 | 3.64 | .000 |
| Step 2 | centcc | .216 | .197 | 11.4 | .000 | -.232 | -2.29 | .024 |
| Step 3 | xcnccpca | .242 | .215 | 8.8 | .000 | -.191 | -1.68 | .096 |

$F_{int} = 2.83$

### Table KD2 Professionalism/Continuance, Union Members

| Group: Union members | | | DV: ORGCOM | | | df 3, 129 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpc_a | .183 | .177 | 29.4 | .000 | .488 | 5.69 | .000 |
| Step 2 | centcc | .183 | .171 | 14.6 | .000 | -.047 | -.57 | ns |
| Step 3 | xcnccpca | .212 | .194 | 11.5 | .000 | -.189 | -2.17 | .032 |

$F_{int} = 4.71$

### Table KD3 Professionalism/Continuance, All

| Group: All | | | DV: SMNEWOCS | | | df 3, 599 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpc_a | .257 | .256 | 207.9 | .000 | .498 | 13.55 | .000 |
| Step 2 | centcc | .266 | .264 | 108.8 | .000 | -.089 | -2.45 | .015 |
| Step 3 | xcnccpca | .283 | .279 | 78.8 | .000 | -.131 | -3.74 | .000 |

$F_{int} = 13.91$

## Table KD4 Professionalism/Continuance, Men

| Group: Men | | | DV: SMNEWOCS | | | df 3, 472 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpc_a | .261 | .259 | 167.3 | .000 | .504 | 12.05 | .000 |
| Step 2 | centcc | .278 | .275 | 90.9 | .000 | -.126 | -3.10 | .002 |
| Step 3 | xcnccpca | .297 | .293 | 66.5 | .000 | -.144 | -3.63 | .000 |

$F_{int}$ = 13.14

## Table KD5 Professionalism/Continuance, Union Members

| Group: Union Members | | | DV: SMNEWOCS | | | df 3, 128 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpc_a | .200 | .194 | 32.5 | .000 | .514 | 6.18 | .000 |
| Step 2 | centcc | .208 | .195 | 16.9 | .000 | -.146 | -1.82 | .071 |
| Step 3 | xcnccpca | .268 | .251 | 15.6 | .000 | -.273 | -3.24 | .001 |

$F_{int}$ = 10.49

## Table KD6 Professionalism/Continuance, Non-union

| Group: Non-union | | | DV: SMNEWOCS | | | df 3, 466 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpc_a | .267 | .266 | 170.5 | .000 | .497 | 12.04 | .000 |
| Step 2 | centcc | .276 | .273 | 89.0 | .000 | -.083 | -2.00 | .046 |
| Step 3 | xcnccpca | .285 | .281 | 62.0 | .000 | -.098 | -2.47 | .014 |

$F_{int}$ = 5.33

## Table KD7 Professionalism/Continuance, IVC=0

| Group: IVC=0 | | | DV: SMNEWOCS | | | df 3, 495 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpc_a | .233 | .232 | 151.4 | .000 | .471 | 11.45 | .000 |
| Step 2 | centcc | .243 | .240 | 79.8 | .000 | -.092 | -2.24 | .025 |
| Step 3 | xcnccpca | .258 | .253 | 57.3 | .000 | -.122 | -3.10 | .002 |

$F_{int}$ = 9.62

## Table KD8 Professionalism/Continuance, IVC >=1

| Group: IVC >=1 | | | DV: SMNEWOCS | | | df 3, 97 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpc_a | .403 | .397 | 66.8 | .000 | .629 | 7.90 | .000 |
| Step 2 | centcc | .414 | .401 | 34.5 | .000 | -.113 | -1.43 | ns |
| Step 3 | xcnccpca | .444 | .427 | 25.8 | .000 | -.176 | -2.39 | .023 |

$F_{int}$ = 5.28

## Table KD9 Professionalism/Continuance, IVC >1

| Group: IVC >1 | | | DV: SMNEWOCS | | | df 3, 23 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpc_a | .376 | .351 | 15.0 | .001 | .594 | 3.80 | .000 |
| Step 2 | centcc | .376 | .323 | 7.2 | .004 | -.02 | -.17 | ns |
| Step 3 | xcnccpca | .447 | .375 | 6.2 | .003 | -.270 | -1.73 | .098 |

$F_{int}$ = 2.98

## Table KD10 Professionalism/Continuance, Age > 50 years

| Group: Age > 50 | | | DV: SMNEWOCS | | | df 3, 80 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpc_a | .217 | .207 | 22.7 | .000 | .684 | 6.16 | .000 |
| Step 2 | centcc | .218 | .198 | 11.3 | .000 | .03 | .37 | ns |
| Step 3 | xcnccpca | .339 | .314 | 13.7 | .000 | -.411 | -3.84 | .000 |

$F_{int}$ = 15.40

## Table KD11 Professionalism/Continuance, IVC > 1

| Group: IVC >1 | | | DV: SMFCSSP | | | df 3, 25 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpc_a | .058 | .024 | 1.6 | .205 | .201 | 1.1 | ns |
| Step 2 | centcc | .062 | -.01 | .86 | .436 | -.093 | -.5 | ns |
| Step 3 | xcnccpca | .230 | .137 | 2.5 | .08 | -.412 | -2.33 | .028 |

$F_{int}$ = 5.74

## Table KD12 Professionalism/Continuance, Age > 50 years

| Group: Age > 50 | | | DV: SMFCSSP | | | df 3, 81 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpc_a | .087 | .076 | 7.9 | .006 | .365 | 2.89 | .005 |
| Step 2 | centcc | .111 | .089 | 5.1 | .008 | -.12 | -1.19 | ns |
| Step 3 | xcnccpca | .141 | .109 | 4.4 | .006 | -.204 | -1.68 | .096 |

$F_{int} = 2.82$

## Table KD13 Professionalism/Continuance, Age > 50 years

| Group: Age > 50 | | | DV: SMFCSWG | | | df 3, 81 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpc_a | .190 | .180 | 19.5 | .000 | .563 | 4.72 | .000 |
| Step 2 | centcc | .190 | .171 | 9.6 | .000 | .02 | .22 | ns |
| Step 3 | xcnccpca | .231 | .202 | 8.1 | .000 | -.238 | -2.07 | .042 |

$F_{int} = 4.28$

## Table KD14 Professionalism/Continuance, Men

| Group: Men | | | DV: TOPMAN | | | df 3, 486 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpc_a | .104 | .102 | 56.4 | .000 | .298 | 6.51 | .000 |
| Step 2 | centcc | .124 | .120 | 34.4 | .000 | -.143 | -3.23 | .001 |
| Step 3 | xcnccpca | .131 | .126 | 24.5 | .000 | -.091 | -2.09 | .038 |

$F_{int} = 4.37$

## Table KD15 Professionalism/Continuance, Union Members

| Group: Union Members | | | DV: TOPMAN | | | df 3, 130 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpc_a | .106 | .099 | 15.6 | .000 | .382 | 4.28 | .000 |
| Step 2 | centcc | .108 | .094 | 7.9 | .001 | -.094 | -1.09 | ns |
| Step 3 | xcnccpca | .143 | .123 | 7.2 | .000 | -.209 | -2.31 | .022 |

$F_{int} = 5.33$

## Table KD16 Professionalism/Continuance, IVC > =1

| Group: IVC >=1 | | | DV: TOPMAN | | | df 3, 103 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpc_a | .094 | .085 | 10.9 | .001 | .277 | 2.90 | .004 |
| Step 2 | centcc | .129 | .112 | 7.7 | .001 | -.208 | -2.20 | .030 |
| Step 3 | xcnccpca | .160 | .136 | 6.5 | .000 | -.182 | -1.98 | .051 |

$F_{int}$ = 3.91

## Table KD17 Professionalism/Continuance, IVC > 1

| Group: IVC > 1 | | | DV: TOPMAN | | | df 3, 25 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig t |
| Step 1 | centpc_a | .174 | .143 | 5.7 | .024 | .364 | 2.18 | .039 |
| Step 2 | centcc | .231 | .172 | 3.9 | .033 | -.269 | -1.6 | ns |
| Step 3 | xcnccpca | .321 | .240 | 3.9 | .020 | -.301 | -1.82 | .081 |

$F_{int}$ = 3.30

## Table KD 18 Professionalism/Continuance, Age > 50 years

| Group: Age > 50 | | | DV: TOPMAN | | | df 3, 82 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpc_a | .049 | .037 | 4.3 | .041 | .366 | 2.96 | .004 |
| Step 2 | centcc | .077 | .054 | 3.4 | .036 | -.121 | -1.1 | ns |
| Step 3 | xcnccpca | .163 | .133 | 5.3 | .002 | -.347 | -2.92 | .005 |

$F_{int}$ = 8.50

## Table KD19 Professionalism/Continuance, Union Members

| Group: Union members | | | DV: SMFCSTM | | | df 3, 130 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpc_a | .166 | .159 | 26.2 | .000 | .488 | 5.72 | .000 |
| Step 2 | centcc | .166 | .153 | 13.0 | .000 | -.060 | -.7 | ns |
| Step 3 | xcnccpca | .216 | .197 | 11.9 | .000 | -.249 | -2.87 | .005 |

$F_{int}$ = 8.26

## Table KD20 Professionalism/Continuance, IVC >1

| Group: IVC > 1 | | | DV: SMFCSTM | | | df 3, 24 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpc_a | .241 | .212 | 8.3 | .008 | .440 | 2.80 | .010 |
| Step 2 | centcc | .312 | .257 | 5.7 | .009 | -.304 | -1.93 | .066 |
| Step 3 | xcnccpca | .418 | .346 | 5.8 | .004 | -.329 | -2.09 | .047 |

$F_{int} = 4.99$

## Table KD21 Professionalism/Continuance, Age > 50 years

| Group: Age > 50 | | | DV: SMFCSTM | | | df 3, 80 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpc_a | .155 | .145 | 15.0 | .000 | .495 | 4.17 | .000 |
| Step 2 | centcc | .189 | .169 | 9.4 | .000 | -.149 | -1.4 | ns |
| Step 3 | xcnccpca | .244 | .216 | 8.6 | .000 | -.277 | -2.42 | .018 |

$F_{int} = 5.85$

## Tables KE1-KE6 Interactions with Qualitative Moderators

## Table KE1 Perceived Support/Union Membership, All

| Group: All | | | DV: SMNEWOCS | | | df 3, 602 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | smpos | .298 | .297 | 256.9 | .000 | .499 | 12.71 | .000 |
| Step 2 | union | .301 | .298 | 129.5 | .000 | -.289 | -2.39 | .017 |
| Step 3 | xposunio | .306 | .302 | 88.3 | .000 | .250 | 2.09 | .037 |

$F_{int} = 4.38$

## Table KE2 Perceived Support/Union Membership, All

| Group: All | | | DV: WORKGP | | | df 3, 622 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | smpos | .132 | .131 | 94.9 | .000 | .317 | 7.37 | .000 |
| Step 2 | union | .132 | .129 | 47.4 | .000 | -.274 | -2.11 | .035 |
| Step 3 | xposunio | .139 | .135 | 33.4 | .000 | .284 | 2.22 | .027 |

$F_{int} = 4.95$

## Table KE3 Perceived Support/Union Membership, IVC >=1

| Group: IVC >=1 | | | DV: WORKGP | | | df 3, 105 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | smpos | .148 | .140 | 18.6 | .000 | .285 | 2.93 | .004 |
| Step 2 | union | .156 | .140 | 9.8 | .000 | -.686 | -2.37 | .019 |
| Step 3 | xposunio | .192 | .169 | 8.3 | .000 | .616 | 2.16 | .033 |

$F_{int} = 4.69$

## Table KE4 Perceived Support and Sex, All

| Group: All | | | DV: WORKGP | | | df 3, 622 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | smpos | .132 | .131 | 94.9 | .000 | .335 | 8.29 | .000 |
| Step 2 | sex | .156 | .154 | 57.7 | .000 | -.394 | -2.67 | .008 |
| Step 3 | xsexpos | .160 | .156 | 39.5 | .000 | .247 | 1.66 | .097 |

$F_{int} = 2.80$

## Table KE5 Perceived Support and Sex, All

| Group: All | | | DV: SUPCOM | | | df 3, 620 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | smpos | .147 | .145 | 107.0 | .000 | .343 | 8.46 | .000 |
| Step 2 | sex | .150 | .147 | 54.6 | .000 | -.392 | -2.64 | .008 |
| Step 3 | xsexpos | .157 | .153 | 38.5 | .000 | .352 | 2.36 | .019 |

$F_{int} = 5.59$

## Table KE6 Perceived Support and IVC, All

| Group: All | | | DV: ORGCOM | | | df 3, 611 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | smpos | .311 | .310 | 276.6 | .000 | .525 | 13.98 | .000 |
| Step 2 | invldumy | .312 | .309 | 138.6 | .000 | -.222 | -1.92 | .055 |
| Step 3 | xinvlpos | .315 | .312 | 93.7 | .000 | .202 | 1.76 | .079 |

$F_{int} = 3.08$

## Table KF1-KF5 Perceived Support/Social Exchange Interactions on the Dimensions of Behavioural Commitment

## Table KF1 Perceived Support/ Exchange, CIMA, Commitment to Goals

| Group: CIMA | | | DV: SMCQG | | | df 3, 129 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpos | .408 | .403 | 90.2 | .000 | .620 | 9.2 | .000 |
| Step 2 | centei | .410 | .401 | 45.1 | .000 | -.018 | -.2 | ns |
| Step 3 | xcenpsei | .422 | .408 | 31.4 | .000 | -.115 | -1.67 | .097 |

F=2.77

## Table KF2 Perceived Support/Exchange, Union members, Commitment to Goals

| Group: Union members | | | DV: SMCQG | | | df 3, 129 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpos | .513 | .510 | 138.1 | .000 | .716 | 11.7 | .000 |
| Step 2 | centei | .516 | .508 | 69.2 | .000 | -.007 | -.1 | ns |
| Step 3 | xcenpsei | .528 | .516 | 48.0 | .000 | .117 | 1.79 | .075 |

F=3.21

## Table KF3 Perceived Support/Exchange, Tenure < 2 years, Commitment to Goals

| Group: Tenure < 2 | | | DV: SMCQG | | | df 3, 75 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpos | .461 | .454 | 65.7 | .000 | .618 | 7.58 | .000 |
| Step 2 | centei | .492 | .479 | 36.8 | .000 | -.173 | -2.17 | .033 |
| Step 3 | xcenpsei | .528 | .510 | 28.0 | .000 | .196 | 2.41 | .018 |

F=6.68

**Table KF4 Perceived Support/Exchange, Tenure < 2 years, Achievement**

| Group: Tenure < 2 | | | DV: SMCQAT | | | df 3, 79 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpos | .014 | .002 | 1.1 | ns | -.008 | -.1 | ns |
| Step 2 | centei | .132 | .110 | 6.1 | .004 | -.335 | -3.25 | .002 |
| Step 3 | xcenpsei | .197 | .167 | 6.5 | .001 | .263 | 2.54 | .013 |

F=6.46

**Table KF5 Perceived Support/Exchange, IVC >=1, Achievement**

| Group: IVC >=1 | | | DV: SMCQAT | | | df 3, 103 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpos | .001 | .000 | .08 | ns | -.02 | -.1 | ns |
| Step 2 | centei | .009 | .000 | .47 | ns | -.02 | -.1 | ns |
| Step 3 | xcenpsei | .067 | .040 | 2.4 | .067 | 2.55 | 2.52 | .013 |

## Tables KG1-KG14 Professionalism/Exchange Interactions on the Dimensions of Behavioural Commitment

### Table KG1 Professionalism/Exchange, All, Commitment to Goals

| Group: All | | | DV: SMCQG | | | df 3, 603 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpc_a | .236 | .235 | 186.7 | .000 | .477 | 13.55 | .000 |
| Step 2 | centei | .250 | .247 | 100.5 | .000 | -.117 | -3.32 | .001 |
| Step 3 | xcneipca | .257 | .253 | 69.4 | .000 | .083 | 2.36 | .019 |

F=5.59

### Table KG2 Professionalism/Exchange, All, Achievement

| Group: All | | | DV: SMCQAT | | | df 3, 611 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpc_a | .064 | .062 | 41.9 | .000 | .244 | 6.25 | .000 |
| Step 2 | centei | .069 | .086 | 22.6 | .000 | -.068 | -1.73 | .083 |
| Step 3 | xcneipca | .075 | .071 | 16.6 | .000 | .081 | 2.07 | .039 |

F=4.31

### Table KG3 Professionalism/Exchange, CIMA, Achievement

| Group: CIMA | | | DV: SMCQAT | | | df 3, 131 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpc_a | .058 | .051 | 8.2 | .005 | .234 | 2.78 | .006 |
| Step 2 | centei | .058 | .044 | 4.1 | .-019 | -.02 | -.2 | ns |
| Step 3 | xcneipca | .084 | .062 | 4.0 | .009 | .164 | 1.90 | .059 |

F=3.62

**Table KG4 Professionalism/Exchange, CIPFA, Commitment to Goals**

| Group: CIPFA | | | DV: SMCQAT | | | df 3, 159 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpc_a | .279 | .275 | 62.3 | .000 | .550 | 8.49 | .000 |
| Step 2 | centei | .295 | .287 | 33.5 | .000 | -.08 | -1.2 | ns |
| Step 3 | xcneipca | .342 | .330 | 27.6 | .000 | .223 | 3.38 | .001 |

F=11.42

**Table KG5 Professionalism/Exchange, CIPFA, Achievement**

| Group: CIPFA | | | DV: SMCQAT | | | df 3, 161 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpc_a | .051 | .045 | 8.8 | .003 | .228 | 3.00 | .003 |
| Step 2 | centei | .059 | .048 | 5.1 | .007 | -.05 | -.7 | ns |
| Step 3 | xcneipca | .077 | .060 | 4.5 | .005 | .138 | 1.77 | .078 |

F=3.14

**Table KG6 Professionalism/Exchange, Men, Commitment to Goals**

| Group: Men | | | DV: SMCQAT | | | df 3, 475 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpc_a | .247 | .246 | 156.7 | .000 | .483 | 12.25 | .000 |
| Step 2 | centei | .262 | .259 | 84.4 | .000 | -.118 | -3.01 | .003 |
| Step 3 | xcneipca | .269 | .264 | 58.3 | .000 | -.084 | 2.15 | .032 |

F=4.66

**Table KG7 Professionalism/Exchange, Men, Achievement**

| Group: Men | | | DV: SMCQAT | | | df 3, 480 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpc_a | .061 | .060 | 31.6 | .000 | .228 | 5.17 | .000 |
| Step 2 | centei | .075 | .071 | 19.5 | .000 | -.112 | -2.56 | .011 |
| Step 3 | xcneipca | .083 | .077 | 14.5 | .000 | .090 | 2.04 | .042 |

F=4.19

**Table KG8 Professionalism/Exchange, Union Members, Commitment to Goals**

| Group: Union members | | | DV: SMCQG | | | df 3, 128 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpc_a | .210 | .204 | 34.7 | .000 | .480 | 6.38 | .000 |
| Step 2 | centei | .232 | .220 | 19.5 | .000 | -.08 | -1.1 | ns |
| Step 3 | xcneipca | .283 | .267 | 16.9 | .000 | .237 | 3.03 | .003 |

F=9.19

**Table KG9 Professionalism/Exchange, Union Members, Achievement**

| Group: Union Members | | | DV: SMCQAT | | | df 3,130 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpc_a | .063 | .055 | 8.8 | .004 | .257 | 3.08 | .002 |
| Step 2 | centei | .063 | .049 | 4.4 | .014 | .05 | .5 | ns |
| Step 3 | xcneipca | .103 | .083 | 5.0 | .003 | .213 | 2.42 | .017 |

F=5.84

**Table KG10 Professioanlism/Exchange, Union Members, Innovation**

| Group: Union Members | | | DV: SMCQIT | | | df 3, 130 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpc_a | .087 | .080 | 12.6 | .000 | .297 | 3.58 | .000 |
| Step 2 | centei | .090 | .076 | 6.5 | .002 | -.04 | -.05 | ns |
| Step 3 | xcneipca | .111 | .090 | 5.4 | .002 | .151 | 1.73 | .087 |

F=2.97

**Table KG11 Professionalism/Exchange, Tenure < 2 years, Commitment to Goals**

| Group: Tenure < 2 | | | DV: SMCQIT | | | df 3, 75 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpc_a | .302 | .293 | 33.3 | .000 | .462 | 4.77 | .000 |
| Step 2 | centei | .327 | .309 | 18.4 | .000 | -.184 | -1.97 | .053 |
| Step 3 | xcneipca | .369 | .344 | 14.7 | .000 | .214 | 2.25 | .028 |

F=5.05

## Table KG12 Professionalism/Exchange, IVC = 0, Commitment to Goals

| Group: IVC=0 | | | DV: SMCQG | | | df 3, 499 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpc_a | .225 | .224 | 145.6 | .000 | .465 | 11.94 | .000 |
| Step 2 | centei | .242 | .239 | 79.7 | .000 | -.131 | -3.36 | .001 |
| Step 3 | xcneipca | .250 | .245 | 55.3 | .000 | .089 | 2.29 | .022 |

F=5.26

## Table KG13 Professionalism/Exchange, IVC > 1, Innovation

| Group: IVC> 1 | | | DV: SMCQIT | | | df 3, 25 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpc_a | .178 | .148 | 5.9 | .023 | .463 | | .010 |
| Step 2 | centei | .212 | .151 | 3.5 | .049 | | .7 | ns |
| Step 3 | xcneipca | .320 | .238 | 3.9 | ..020 | | -2.00 | .057 |

## Table KG14 Professionalism/Exchange, Age > 50, Achievment

| Group: Age > 50 | | | DV: SMCQAT | | | df 3, 81 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpc_a | .045 | .033 | 3.9 | .052 | .281 | 2.63 | .010 |
| Step 2 | centei | .088 | .066 | 4.0 | .022 | -.242 | -2.29 | .025 |
| Step 3 | xcneipca | .129 | .096 | 4.0 | .01 | .206 | 1.93 | .057 |

F=4.02

## Table KH1-KH5 Professionalism/Job Insecurity Interactions on the Dimensions of Behavioural Commitment

## Table KH1 Professionalism/Insecurity, RSC, Commitment to Goals

| Group: RSC | | | DV: SMCQG | | | df 3, 294 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpc_a | .079 | .076 | 25.4 | .000 | .265 | 4.42 | .000 |
| Step 2 | centjins | .093 | .087 | 15.1 | .000 | -.128 | -2.18 | .030 |
| Step 3 | xcnjipca | .104 | .095 | 11.4 | .000 | -.111 | -1.96 | .051 |

F=3.83

## Table KH2 Professionalism/Insecurity, Men, Innovation

| Group: Men | | | DV: SMCQIT | | | df 3, 465 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpc_a | .086 | .084 | 44.0 | .000 | .288 | 6.19 | .000 |
| Step 2 | centjins | .092 | .088 | 23.5 | .000 | -.079 | -1.74 | .083 |
| Step 3 | xcnjipca | .098 | .092 | 16.9 | .000 | -.083 | -1.84 | .066 |

F=3.40

## Table KH3 Professionalism/Insecurity, IVC=0, Innovation

| Group: IVC=0 | | | DV: SMCQIT | | | df 3, 486 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpc_a | .072 | .070 | 38.0 | .000 | .254 | 5.62 | .000 |
| Step 2 | centjins | .077 | .074 | 20.4 | -.000 | -.075 | -1.67 | .095 |
| Step 3 | xcnjipca | .083 | .077 | 14.7 | .000 | -.077 | -1.77 | .078 |

F=3.11

## Table KH4 Professionalism/Insecurity, IVC=0, Achievement

| Group: IVC=0 | | | DV: SMCQAT | | | df 3, 484 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpc_a | .052 | .050 | 26.7 | .000 | .219 | 4.76 | .000 |
| Step 2 | centjins | .055 | .051 | 14.1 | .000 | -.058 | -1.3 | ns |
| Step 3 | xcnjipca | .061 | .055 | 10.5 | .000 | -.079 | -1.79 | .074 |

F= 3.22

## Table KH5 Professionalism/Insecurity, Age > 50, Commitment to Goals

| Group: Age > 50 | | | DV: SMCQG | | | df 3, 78 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpc_a | .206 | .196 | 20.7 | .000 | .427 | 4.36 | .000 |
| Step 2 | centjins | .286 | .268 | 15.9 | .000 | -.280 | -2.94 | .004 |
| Step 3 | xcnjipca | .405 | .382 | 17.7 | .000 | -.356 | -3.95 | .000 |

F=15.60

## Tables KJ1-KJ21 Professionalism/Continuance Commitment Interactions on the Dimensions of Behavioural Commitment

### Table KJ1 Professionalism/Continuance, All, Achievement

| Group: All | | | DV: SMCQAT | | | df 3, 609 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpc_a | .064 | .062 | 41.5 | .000 | .263 | 6.38 | .000 |
| Step 2 | centcc | .064 | .061 | 20.8 | .000 | -.01 | -.2 | ns |
| Step 3 | xcnccpca | .076 | .071 | 16.7 | .000 | -.110 | -2.80 | .005 |

F=7.88

### Table KJ2 Professionalism/Continuance, All, Innovation

| Group: All | | | DV: SMCQIT | | | df 3, 611 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpc_a | .102 | .101 | 69.8 | .000 | .308 | 7.72 | .000 |
| Step 2 | centcc | .114 | .111 | 39.4 | .000 | -.102 | -2.59 | .010 |
| Step 3 | xcnccpca | .134 | .130 | 31.6 | .000 | -.144 | -3.78 | .000 |

F=14.29

### Table KJ3 Professionalim/Continuance, CIMA, Achievement

| Group: CIMA | | | DV: SMCQAT | | | df 3, 131 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpc_a | .058 | .051 | 8.2 | .005 | .173 | 1.84 | .067 |
| Step 2 | centcc | .058 | .044 | 4.1 | .019 | .02 | .2 | ns |
| Step 3 | xcnccpca | .086 | .065 | 4.1 | .008 | -.184 | -1.99 | .049 |

F=3.96

**Table KJ4 Professionalism/Continuance, CIMA, Innovation**

| Group: CIMA | | | DV: SMCQIT | | | df 3, 132 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpc_a | .106 | .099 | 15.8 | .000 | .172 | 1.97 | .051 |
| Step 2 | centcc | .131 | .118 | 9.9 | .000 | -.121 | -1.4 | ns |
| Step 3 | xcnccpca | .198 | .180 | 10.9 | .000 | -.287 | -3.34 | .001 |

F=11.14

**Table KJ5 Professionalism/Continuance, CIPFA, Commitment to Goals**

| Group: CIPFA | | | DV: SMCQG | | | df 3, 159 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpc_a | .279 | .275 | 62.0 | .000 | .521 | 7.58 | .000 |
| Step 2 | centcc | .286 | .277 | 32.0 | .000 | -.115 | -1.66 | .099 |
| Step 3 | xcnccpca | .309 | .296 | 23.6 | .000 | -.155 | -2.29 | .023 |

F=5.25

**Table KJ6 Professionalism/Continuance, CIPFA, Innovation**

| Group: CIPFA | | | DV: SMCQIT | | | df 3, 161 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpc_a | .066 | .060 | 11.5 | .001 | .287 | 3.68 | .000 |
| Step 2 | centcc | .067 | .056 | 5.8 | .004 | .008 | .1 | ns |
| Step 3 | xcnccpca | .097 | .080 | 5.8 | .001 | -.178 | -2.32 | .022 |

F=5.38

**Table KJ7 Professionalism/Continuance, RSC, Achievement**

| Group: RSC | | | DV: SMCQAT | | | df 3, 309 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpc_a | .075 | .072 | 25.0 | .000 | .330 | 5.26 | .000 |
| Step 2 | centcc | .075 | .069 | 12.5 | .000 | .01 | .2 | ns |
| Step 3 | xcnccpca | .089 | .080 | 10.1 | .000 | -.133 | -2.32 | .027 |

F=4.93

**Table KJ8 Professionalism/Continuance, Men, Commitment to Goals**

| Group: Men | | | DV: SMCQG | | | df 3, 474 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpc_a | .251 | .250 | 159.7 | .000 | .491 | 11.53 | .000 |
| Step 2 | centcc | .260 | .257 | 83.6 | .000 | -.095 | -2.29 | .022 |
| Step 3 | xcnccpca | .267 | .262 | 57.6 | .000 | -.086 | -2.12 | .034 |

F=4.53

**Table KJ9 Professionalism/Continuance, Men, Achievement**

| Group: Men | | | DV: SMCQAT | | | df 3, 479 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpc_a | .061 | .059 | 31.2 | .000 | .262 | 5.49 | .000 |
| Step 2 | centcc | .063 | .059 | 16.1 | .002 | -.04 | -.9 | ns |
| Step 3 | xcnccpca | .076 | .070 | 13.1 | .000 | -.116 | -2.56 | .011 |

F=6.57

## Table KJ10 Professionalism/Continuance, Men, Innovation

| Group: Men | | | DV: SMCQIT | | | df 3, 481 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpc_a | .096 | .094 | 51.3 | .000 | .290 | 6.30 | .000 |
| Step 2 | centcc | .119 | .115 | 32.5 | .000 | -.151 | -3.37 | .001 |
| Step 3 | xcnccpca | .132 | .127 | 24.4 | .000 | -.119 | -2.72 | .007 |

F=7.43

## Table KJ11 Professionalsm/Continuance, Women, Innovation

| Group: Women | | | DV: SMCQIT | | | df 3, 125 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpc_a | .133 | .126 | 19.5 | .000 | .314 | 3.70 | .000 |
| Step 2 | centcc | .137 | .119 | 9.7 | .000 | .03 | .4 | ns |
| Step 3 | xcnccpca | .187 | .168 | 9.6 | .000 | -.244 | -2.89 | .005 |

F=8.32

## Table KJ12 Professionalism/Continuance, Union Members, Commitment to Goals

| Group: Union | | | DV: SMCQG | | | df 3, 128 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpc_a | .210 | .204 | 34.7 | .000 | .532 | 6.53 | .000 |
| Step 2 | centcc | .222 | .210 | 18.4 | .000 | -.174 | -2.22 | .028 |
| Step 3 | xcnccpca | .298 | .282 | 18.2 | .000 | -308 | -3.74 | .000 |

F=14.00

## Table KJ13 Professionalism/Continuance, Union Members, Achievement

| Group: Union Members | | | DV: SMCQAT | | | df 3, 130 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpc_a | .062 | .055 | 8.9 | .004 | .314 | 3.42 | .001 |
| Step 2 | centcc | .063 | .048 | 4.4 | .014 | -.02 | -.3 | ns |
| Step 3 | xcnccpca | .090 | .069 | 4.3 | .007 | -.182 | -1.95 | .053 |

F=3.82

## Table KJ14 Professionalism/Continuance, Non-Union, Achievement

| Group: Non-Union | | | DV: SMCQAT | | | df 3, 474 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpc_a | .064 | .062 | 32.4 | .000 | .253 | 5.42 | .000 |
| Step 2 | centcc | .065 | .061 | 16.4 | .000 | -.02 | -.4 | ns |
| Step 3 | xcnccpca | .073 | .067 | 12.5 | .000 | -.094 | -2.10 | .036 |

F=4.42

## Table KJ15 Professionalism/Continuance, Non-Union, Innovation

| Group: Non-Union | | | DV: SMCQIT | | | df 3, 476 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpc_a | .098 | .096 | 52.1 | .000 | .296 | 6.60 | .000 |
| Step 2 | centcc | .110 | .107 | 29.6 | .000 | -.089 | -1.96 | .050 |
| Step 3 | xcnccpca | .137 | .132 | 25.2 | .000 | -166 | -3.85 | .000 |

F=14.86

## Table KJ16 Professionalism/Continuance, IVC=0, Innovation

| Group: IVC=0 | | | DV: SMCQIT | | | df 3, 501 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpc_a | .079 | .077 | 43.2 | .000 | .269 | 6.03 | .000 |
| Step 2 | centcc | .093 | .089 | 25.6 | .000 | -104 | -2.75 | .019 |
| Step 3 | xcnccpca | .115 | .110 | 21.7 | .000 | -.151 | -3.57 | .000 |

F=12.73

## Table KJ17 Professionalism/Continuance, IVC=0, Achievement

| Group:IVC=0 | | | DV: SMCQAT | | | df 3, 499 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpc_a | .053 | .051 | 27.8 | .000 | .242 | 5.28 | .000 |
| Step 2 | centcc | .053 | .049 | 14.0 | .000 | -.007 | -.16 | ns |
| Step 3 | xcnccpca | .067 | .062 | 12.0 | .000 | -.122 | 2.98 | .005 |

F=7.73

## Table KJ18 Professionalism/Continuance, IVC >=1, Commitment to Goals

| Group: IVC >=1 | | | DV: SMCQG | | | df 3, 97 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpc_a | .311 | .304 | 44.6 | .000 | .542 | 6.34 | .000 |
| Step 2 | centcc | .328 | .315 | 23.9 | .000 | -.144 | -1.71 | .091 |
| Step 3 | xcnccpca | .358 | .338 | 18.0 | .000 | -.175 | -2.12 | .036 |

F=4.52

## Table KJ19 Professionalism/Continuance, IVC>1, Commitment to Goals

| Group: IVC > 1 | | | DV: SMCQG | | | df 3, 23 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpc_a | .358 | .332 | 13.9 | .001 | .564 | 3.66 | .001 |
| Step 2 | centcc | .383 | .331 | 7.4 | .003 | -.190 | -1.2 | ns |
| Step 3 | xcnccpca | .460 | .389 | 6.5 | .002 | -.280 | -1.81 | .084 |

F=3.27

## Table KJ20 Professionalism/Continuance, Age > 50, Commitment to Goals

| Group: Age > 50 | | | DV: SMCQG | | | df 3, 81 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpc_a | .220 | .211 | 23.4 | .000 | .691 | 6.52 | .000 |
| Step 2 | centcc | .236 | .217 | 12.6 | .000 | -.06 | -.6 | ns |
| Step 3 | xcnccpca | .392 | .370 | 17.4 | .000 | -.467 | -4.57 | .000 |

F=20.80

## Table KJ21 Professionalism/Continuance, Age > 50, Achievement

| Group: Age > 50 | | | DV: SMCQAT | | | df 3, 80 | | |
|---|---|---|---|---|---|---|---|---|
| | IV | $R^2$ | Adj.$R^2$ | F | sig.F | β | t | sig.t |
| Step 1 | centpc_a | .041 | .030 | 3.5 | .064 | .384 | 2.99 | .004 |
| Step 2 | centcc | .072 | .049 | 3.1 | .049 | .219 | 1.98 | .052 |
| Step 3 | xcnccpca | .114 | .081 | 3.4 | .021 | -.243 | -1.96 | .054 |

F=3.84

## APPENDIX L DEALING WITH TYPE 1 AND TYPE II ERRORS.

Alongside the discussion of the relationships between the new model of commitment and other variables it is necessary to clarify a methodological issue that touches upon the interpretation and acceptance of the results of tests for moderator variables. All inferential statistics rely upon the idea of probability and two types of error confront the researcher when making decisions about the null hypothesis (Grimm, 1993, p.151). In this study, the null hypothesis says that there is no relationship between an interaction term and the dependent variable, that is, beta for the interaction term is zero. A Type I error is committed when a true null hypothesis is rejected, that is, there is no interaction effect in reality but it is erroneously assumed that there is, and a Type II error is committed when a false null hypothesis is accepted, that is, there is an interaction effect in reality but it is rejected.

Looking over Tables 8.5 to 8.11, the presence of a significant F value implies the acceptance of an interaction effect and the rejection of the hull hypothesis. However, recalling that probability theory underlies inferential statistics, it is possible that all such acceptances are Type I errors. That is, in truth, there may be no interactions in the population when I am erroneously implying that there are. Where no F value is shown in the Tables, this implies the absence of an interaction effect. It is possible in all these cases that, in truth, there is an interaction present in the population and that a Type II error has been committed in each case.

The likelihood of all apparent interactions and apparent 'non-interactions' being Type I and Type II errors is however improbable and can be discounted. A difficult question remains, however, are any of the apparent interactions false? We can see that there are some patterns in the Tables of F values, such as interactions extending across a row and representing a sample group, or down a column representing a particular dependent variable. If one of these interactions was a phantom appearing only by chance, then it seems highly unlikely that chance would explain the same interaction appearing in different sample groups or when the same construct is measured in another way.

Furthermore, the number of independent variables in each MMR equation was three except when qualitative moderators were tested in which case it was two. When the number of independent variables in a multiple regression equation is low then the chance of finding significant but false betas decreases (Cohen and Cohen, 1983, p.24) and so the small number of variables entered in each equation helps to minimise the chance of making Type I and Type II errors in this case.

The potential to detect false moderators (Type I errors) is increased when the reliability of the variables in question varies across groups and when the range of values for variables differs across groups (Jaccard et al., 1990, p.73). For the main variables used in the study, reliability and range data are given below in Table L1.1 for four groups. The differences in values are trivial and therefore will not have contributed to false moderator detection.

**Table L1.1 Reliability and Range of Values for Sample Sub-Groups**

| Variable | men | women | union | non-union |
|---|---|---|---|---|
| | Reliability, alpha | | | |
| Social exchange | .72 | .70 | .75 | .71 |
| New commitment scale | .84 | .85 | .88 | .83 |
| Perceived support | .93 | .92 | .93 | .93 |
| Job Insecurity | .60 | .50 | .60 | .59 |
| | Range of Values | | | |
| Social exchange | 4-28 | 5-27 | 4-27 | 4-28 |
| New commitment scale | 30-77 | 27-76 | 27-75 | 30-77 |
| Perceived support | 9-63 | 10-57 | 9-60 | 9-63 |
| Job Insecurity | 3-21 | 3-16 | 3-21 | 3-21 |
| Professionalism | 34-109 | 40-103 | 34-108 | 44-109 |

Lastly, the large sample should act to make Type I and Type II errors less likely. In many of the sub-groups tested, the ratio of the sample size to the number of independent variables was above 40 to 1 as recommended (Cohen and Cohen, 1983, p.125). Despite these arguments, the possibility that a small number of observed interactions are phantoms only present through chance has to be accepted. It is impossible to determine which ones might have been caused in this way and the actual significance level of each interaction (F value) is an important consideration in any such judgements.

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