

The Educational and Occupational Choice Process:
The Case of Agriculture Students in Pakistan

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Abstract

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The development of the agriculture sector is crucial to the socio-economic prosperity of Pakistan. Despite its significance, the enrolment trends in agriculture sciences and research and development in this sector have not gained substantial attention. The specific objective of this research is to draw conclusions and make recommendations through which enrolment in agriculture sciences can be facilitated, retention of agriculture graduates can be ensured and barriers in the choice process can be removed. This has been achieved through investigating the choice process of agriculture students by answering the first research questions that seek to identify stages of the choice process. Expanding the understating of the choices and the choice process, the study answers the second research question exploring the influence of various factors on the choices as well as the choice process of agriculture students in Pakistan.

This qualitative study was conducted in two different cities of Pakistan where various cohorts of students at different stages of their academic and professional life were interviewed. The thematic analysis of the interview data presents a ‘multi-stage’ educational and occupational choice process detailing the definitions, characteristics, sequences and components of the stages. The outcome of the process is postulated based on the experiences of the earlier stages. The significance of practising ‘choice’ intensifies as unplanned choosers are more likely to drift away from the agriculture profession as compared to planned choosers. Furthermore, the role of locality, gender, social prestige associated with various professions and nature of parental support emerged as choice facilitators or barriers in the choice process of agriculture students.

Thus, key recommendations arise for the policy makers in the education sector and in agriculture universities and establishments. Particular focus is required for establishing career guidance facilities, disseminating information at different levels, making small changes in the structure of the education system and addressing misconceptions about agriculture sciences and professions in this field.

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List of Abbreviations and Terms

1. ASTI	Agriculture Science and Technology Indicators
2. B.A	Bachelor of Arts
3. BBA	Bachelor in Business Administration
4. BISE	Board of Intermediate and Secondary Education
5. B.Sc.	Bachelor of Science
6. CGPA	Comprehensive Grade Point Average
7. F. A	Foundation of Arts
8. F.Sc.	Foundation of Science
9. FTE	Full Time Equivalent
10. FT	Food Technology
11. FY	Financial Year
12. GDP	Gross Domestic Produce
13. GRE	Graduate Record Examination
14. HEC	Higher Education Commission
15. HSE	Higher Secondary Education
16. HSSC	Higher Secondary School Certificate
17. ICS	Intermediate in Computer Sciences
18. M.A	Master of Arts
19. MBBS	Bachelor in Medicine, Bachelor in Surgery
20. M.Phil	Master of Philosophy
21. M.Sc.	Master of Science
22. NARC	National Agriculture Research Council
23. PARC	Pakistan Agriculture Research Council
24. PBG	Plant Breeding & Genetics
25. PhD	Philosophiae Doctor
26. PMAS-AAUR	Pir Mehr Ali Shah- Arid Agriculture University Rawalpindi
27. SSC	Secondary School Certificate
28. UAF	University of Agriculture Faisalabad
29. ...	Section of interview conversation edited for presentation

Chapter 1

INTRODUCTION TO THE STUDY

Introduction

This thesis explores the educational and occupational choices of agriculture students in Pakistan and analyses various personal and social experiences shaping their choice process. The intention is to investigate young people's educational and career goals and the process that shapes their choices. As professional qualifications largely determine the long-term career pathways, this study focuses on young people studying agriculture at the professional level and investigates how these students choose to study agriculture sciences and develop aspirations to build their career in the agriculture sector. Since the aim of the research is to explore their choice process, an attempt has been made to capture the trajectories from one stage to another. To include the details of these transitions and changing patterns of views, opinions and experiences of students; the study sample was designed to include students at different academic levels ranging from those who have not yet made their decisions to those who have completed their education and are in the job market.

This chapter gives a brief introduction to the research. Firstly, it briefly describes the research setting and explains the importance of agriculture for Pakistan. It then describes the education system in Pakistan highlighting the significant decision points for students and how these affect their future choices. It also describes the eligibility criteria for studying agriculture which will facilitate the reader to comprehend the sampling design and follow the arguments presented in the analysis. The chapter then

presents evidence highlighting weak enrolment trends in agriculture sciences and the shortage of agriculture researchers which substantiate the research problem. In the last section of the chapter I communicate the motivation behind the study, research objectives and questions, and the structure of the thesis.

1.1 The Research Setting

Pakistan is widely acknowledged as an agricultural economy. The country covers an area of 796,095 sq. km. with a vast variety of agro-ecological zones¹. Fertile land, suitable environmental conditions and a world famous irrigation network allow for substantial agricultural production in the country. Agriculture plays a key role in the economic growth of the country and contributed 71% to the GDP growth during 2008-09. It had an average share of 24% in the GDP during the financial years from 2005-2010. It is also the largest employment-generating sector, contributing up to 45% of the industry-wise employment share. Occupationally, the skilled agriculture and fishery workers formed the largest group (38%) among the employed labour force in 2009-10. Approximately 63% of the population residing in rural areas directly or indirectly earn their livelihood from agriculture (Economic Survey of Pakistan, 2010-11).

Despite its evident importance, the agriculture sector has been facing a decline in Pakistan². Diverse sub-sectors of agriculture persist to produce less than many countries with a comparable resource base (Iqbal and Ahmed, 2005). Since 1991, the output of the crop sector has declined from 65% to 48%, whereas the agriculture sector has to ensure adequate food supply for a population that is growing at a steady annual growth

¹ See Appendix 1.1

² E.g. the share of agriculture in the GDP shrank to 20.9% in 2010-11 (Pakistan Economic Survey, 2010-11)

rate of 2.05% (Pakistan Economic Survey, 2010-11). In reality, the country is unable to fulfil its domestic food demands and imported agriculture products worth over \$3.0 billion in the financial year 2006/07 (Government of Pakistan, 2009).

Regardless of the country's rich agriculture resources and the abundant agriculture labour force, costly agriculture imports highlight the lack of expertise in managing local demands. Moreover, agriculture workers from 68% of the countries around the world are producing more than the average worker of Pakistan, thereby confirming lack of technical skills and modern knowledge in the sector (Rehman et al. 2009). Even the livestock sector is contributing more than the crop sector in the GDP, indicating great room for improvement in the farming sector of the country (Ministry of Finance, 2006). Though agriculture's share to the GDP declined over the past few decades, its significance has not diminished due to its close connection with other sectors of the economy. Historically, "periods of high/low agricultural growth have generally coincided with periods of robust/poor performance of the national economy" (Ali, 2000 cited in Iqbal and Ahmed, 2005: 1). It is argued that a vigorous, sustainable agriculture growth rate (more than 5%) will ensure overall socio-economic development of the country (Naqvi et al. 1992, 1994).

Easterly (2001: 33) highlighted that "Agriculture growth may also have run into diminishing returns as irrigated land and human capital did not grow at the same rate as the other factors of production". Economic development in a low-income country like Pakistan can be substantiated by raising its agricultural productivity, research, extension and information (Boris, 2002). Considering these facts, the need for supplying

professionally trained agriculture graduates and scientists to the agriculture labour force becomes more imperative (Rehman et al. 2009).

Like many countries around the globe, the economic output of Pakistan is highly responsive to the skilled labour force produced by the higher education establishments, and the returns of higher education enrolment on the economic growth of the country are visibly constructive (Aziz et al. 2008). Research studies from developing countries also propose that investing in human resource development is vital for effective utilization of national resources and socio-economic development of the state (Azizi, 2004; Belay, 2000). With the advancement of science and technology in the recent era, the face of agriculture has changed and it demands a competent and professionally trained human resource. Thus, the agriculture development policy makers need to focus on providing adequately trained and empowered human resources (Asadi et al. 2011).

The targets of capacity building in agriculture research and development (R&D) are planned to be achieved through the addition of agriculture scientists in the sector (Beintema et al. 2007). Understandably, therefore, HEC's "Medium Term Development Framework" (Higher Education Commission Pakistan, 2005) highlighted the necessity of increased agricultural research in order to boost agricultural productivity. The framework stressed the need to speed up agriculture production through programmes on genetic engineering, biotechnology and tissue culture, etc. Such developments are seen as a potential source of substantial advancement in the agricultural productivity of the country (Zafar and Malik, 2003).

1.2 Education System in Pakistan

Since the focus of my research is the educational and occupational choice process of agriculture students, an introduction to the formal education system will facilitate the comprehension of the rationale behind the sampling methodologies of the study and the discussions made in the analysis. Thus, this section will give a brief overview of the education system in Pakistan.

Formal education in Pakistan is provided through both the private and public sectors. In the private sector, there is a variety of schools e.g. expensive English-medium schools, inspired by and functioning according to contemporary Western education (delivering O and A level curriculum), or schools run by non-government organisations (NGOs). In the public sector, there is yet again diversity, ranging from English-medium ('Model') schools in big cities to Urdu-medium public schools and 'Tat' schools in villages, which are deficient in basic facilities³ and some offer education in the regional language. Moreover, there is another network of charitable institutions called '*Madrasas*', which is based on religious ideology and delivers religious education accompanied by basic level contemporary education. Students who '*Hifz Quran-e-Pak*' (learn by heart the religious book of Muslims) are exempted from primary education and are allowed entry into the formal education system at the middle level. However, these institutions have only a minor share in the education, ranging from 1% to 2.6% (Cockcroft et al. 2009; McClure, 2009).

The school system in Pakistan consists of five levels: pre-primary, primary, middle, secondary and higher secondary. The National Education EFA Action Plan Policy

³ e.g. many schools are without shelter and do not have any school furniture, leaving students to sit on the ground under tree cover for classes.

(1998-2010) recognised the pre-primary⁴ level as an important part of the socialisation process, and recommended its formal functioning in primary schools for children between the ages of 3 and 5 years. This level is followed by primary education extending over five years (classes I-V), for children aged 5 to 9 years. The middle comprises of three years of education (classes VI-VII) for 10 to 12 year olds. This level is provided by both primary and secondary schools. Afterwards, students progress towards secondary or high school education of two years (classes IX and X). Predominantly, students aged between 13-14 years attend this level. At the end of the tenth grade, students take exams conducted by the Boards of Intermediate and Secondary Education (BISE) in order to attain the Secondary School Certificate (SSC) a.k.a. '*Matric*' or '*Matriculation*'. The school education ends at the higher secondary level, also called Intermediate, consisting of classes XI and XII. This level is predominantly offered by various colleges across the country. Students successfully completing this level secure the Higher Secondary School Certificate (HSSC).

Students who wish to pursue education after the intermediate level move on to higher education. The duration of higher education varies according to different professional and technical disciplines. Bachelor of Sciences (B.Sc.) and Bachelor of Arts (B.A) comprises of two years of education in almost all academic establishments. Many other professional colleges and institutes offer Bachelor with Honours degrees (B.A. Hons. or B.Sc. Hons.) extending over three to four academic years, in order to align with international undergraduate standards. Further, students enrol in the post-graduate qualifications (M.A. or M.Sc.) for two academic years. This level is followed by the M. Phil. and then PhD degrees (Shah, 2003: 3-4).

⁴ Also known as kinder garden

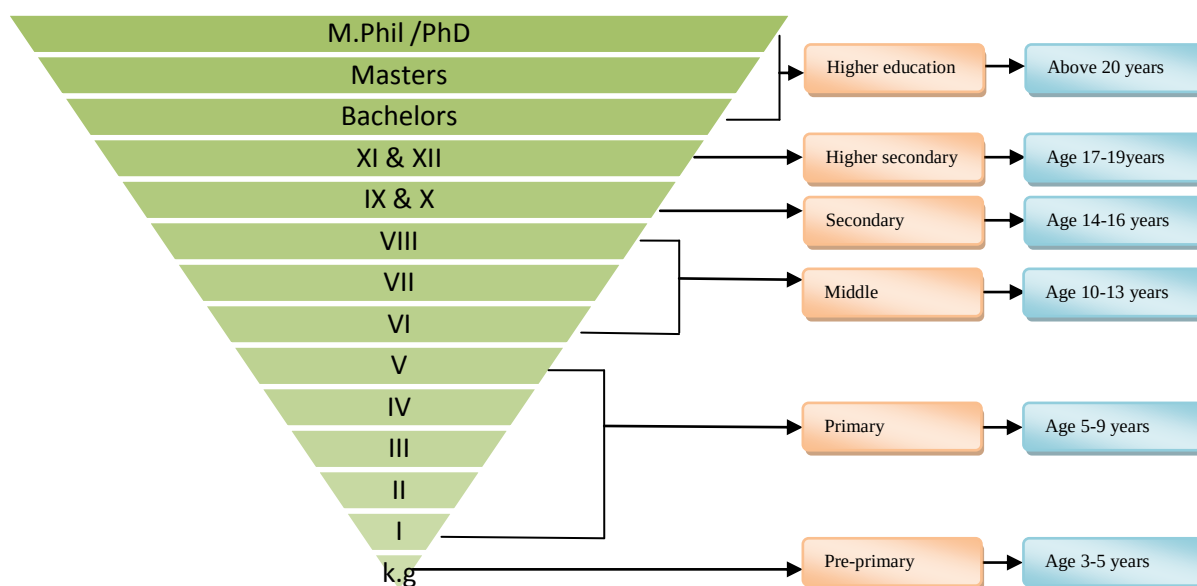


Figure 1.1: Structure of the Education System in Pakistan

1.3 Choices within the Education System

There are various educational choices given to students at different academic stages, and these choices in turn impact on the long-term educational and occupational paths⁵. It is therefore essential to give a brief orientation of the decision-making points in students' academic lives and how they shape their future educational and occupational choices.

1.3.1 Choice about Medium of Instruction

Since education in Pakistan is not delivered in one language, it is necessary to describe students' choices about the medium of instruction prior to academic points where students have to make subject choices. For many students, the medium of instruction influences their educational and ultimately occupational choices later in their lives. Earlier, the medium of instruction at almost all school levels was Urdu. However, with the passage of time and demands for a competitive education system, many schools and

⁵ See Appendix 1.2

colleges started offering education in English. However, students still have a choice of studying in English or Urdu medium institutions⁶. Schools offering education in English are mostly located in urban or suburban areas. On the other hand, schools in small villages and rural areas do not have adequate teaching staff and facilities to provide education in English. Consequently, for such students, there is no choice but to study in Urdu. At the HSSC level, science subjects⁷ are taught in English only because students who opt for these subjects mostly aim to join professional colleges where there is only one medium of instruction, English. In the Humanities group, exams are conducted in both languages until the graduation level. Predominantly, higher education at the university level is delivered in English.

1.3.2 Choices at the Secondary Level

The first choice regarding subject selection has to be made at the Secondary level (grade IX) among a huge variety of courses. However, the combination and availability of elective courses is subject to the school's teaching facilities and teaching staff. Therefore, many schools combine various subjects into groups and offer students a choice among these. Besides choosing among different academic modules, students at this level can also opt for vocational education. Thus, matriculation is an important stage in the educational and vocational path of the students.

During secondary education, students have to study eight modules. Five modules are compulsory (English, Urdu, Mathematics, Pakistan Studies and Islamiyat or Religious Studies), while three are elective. Students are supposed to choose from two groups of study, namely Science and Humanities. Within each of these two groups, schools offer a

⁶ Some schools and colleges offer education in both mediums.

⁷ Pre-Medical and Pre-Engineering

further choice of various subject combinations. The Science group comprises of Physics, Chemistry, and a third option of Biology or Computer Sciences (rural schools that are deficient in computer labs offer Electricity⁸ instead).

A variety of courses is offered in the Humanities group and students can choose any combination of subjects offered by their schools. The nature of choice made at this stage is more critical for students who opt for the Humanities group as they become ineligible for studying science subjects in HSE. If any student (who studied humanities in matriculation) changes his/her mind and wishes to study Science in future, s/he cannot do so due to the eligibility conditions at the higher secondary level. However, students who enrol in the Science group at this level can opt for any subject in HSE and have no obligation to remain with their former group of subject studied. Subject choices made at this level therefore partially serve as a terminal to their future educational and occupational choices.

1.3.3 Choices at the Higher Secondary Level

After successful completion of secondary education, students who wish to pursue their studies have to make a choice yet again. At higher secondary level, students have to study seven subjects; four are compulsory (English, Urdu, Pakistan Studies and Islamiyat or Religious Studies) and three are optional. The choices at the higher secondary level are comparatively wider and more relevant to the future career. There are five groups, from which students have to choose one. These groups are Pre-Medical, Pre-Engineering, Commerce, General Science and Humanities. Students also have subject choices within some of the groups. For example, within General Science group,

⁸ 'Electricity' is the literal translation of the course title 'Bijli' in Urdu.

students have a choice of studying Computer Sciences (also known as ICS), or Statistics, Mathematics and Economics, etc. Choices at this level are limited for those who have studied humanities at the matriculation level. Such students can opt for few options within either General Science or Humanities and are ineligible for Pre-Medical and Pre-Engineering.

The educational choices made at this level determine future educational and occupational pathways. For those who wish to join medicine, it is mandatory for them to study Pre-Medical; similarly, those who wish to join Engineering must study Pre-Engineering. At the graduation level, science students can study humanities. Students from the humanities group can only continue their education in their prior field of study. Eventually, students who studied humanities at the intermediate level automatically become ineligible to study sciences at the graduation or degree level.

Although the education system and choices offered by the BISE, colleges, and universities appear rigid, there is a little relaxation offered to those who wish to shift their field of study after higher secondary education. Those who have studied Pre-Medical (Physics, Chemistry and Biology) during HSSC and who wish to join an Engineering University can take an additional paper of Mathematics, namely Additional Math in the next academic year and proceed with this newly chosen subject. Similarly, students belonging to the Pre-Engineering group (Physics, Chemistry and Mathematics) can take an additional paper of Biology in the next academic year in order to shift to biological sciences. However, this results in a gap of one academic year between HSSC and degree education as they have to study an extra year for the additional subject.

1.3.4 Choices at the Bachelor Level

At degree level, it is most likely for students to continue their HSSC field of study and choose a particular subject in which they are interested. However, if a student decides to change his or her educational and occupational path or does not succeed in getting admission in their preferred field of study, college or university, he or she might opt for a different discipline at under graduate level. Nonetheless, choices at degree level must be made wisely while keeping in mind the future academic and vocational paths as one can only proceed with their post-graduate studies in the same discipline.

Since the focus of the current research is on agriculture students, this section will only discuss how students filter through the earlier levels of education and reach an agriculture university. In order to be admitted in Agriculture Sciences, it is mandatory for the students to have studied Biology at the intermediate level. Almost all agriculture universities and departments of Agriculture Sciences across the country have this pre-requisite (an exception is that of Pir Mehr Ali Shah- Arid Agriculture University Rawalpindi⁹, as this university also enrolls students who have studied pre-engineering and have adjusted their degree programme considering the educational background of such students). Students who have studied humanities are not eligible to apply to agriculture sciences. However, students who have studied Pre-Engineering, and successfully passed an additional Biology course, become eligible for studying Agriculture at degree level.

Another route for entering Agriculture Sciences has been introduced in 2009 by the University of Agriculture Faisalabad. The University has revived its 20-year-old

⁹ Will be referred as PMAS-AAUR from hereafter.

intermediate programme (HSSC in Pre-Agriculture) for students belonging to rural areas. However, only those students who have studied Science during matriculation are eligible to take admission in F.Sc. Pre-Agriculture. Thus, students who have studied Pre-Medical or Pre-Agriculture can study agriculture, and students who have studied Humanities or General Science at the HSE level cannot join agriculture universities.

1.3.5 Choices within Agriculture Sciences Degree

Agriculture colleges and universities have been established across the country for the development of human resources within agriculture. There are currently five state universities providing degree level education in Agriculture Sciences across Pakistan. Two are operating in Punjab (University of Agriculture Faisalabad and PMAS-Arid Agriculture University Rawalpindi), one in Khyber Pakhtunkhwa (Khyber Pakhtunkhwa Agricultural University, Peshawar), one in Sindh (Sindh Agriculture University, Tandojam), and one in Baluchistan (Lasbela University of Agriculture, Water and Marine Sciences). Besides these, there are a number of agriculture colleges affiliated with these universities and several departments in non-agriculture universities providing education in various agriculture specializations across the country.

Since the research was conducted in Punjab, Pakistan, both of the agriculture universities in the province served as the sampling sites. These universities offer a four-year bachelor programme in Agriculture Sciences, namely B.Sc. Hons. Agriculture consisting of eight semesters (excluding optional summer semesters). During the first four semesters, students are taught compulsory modules at an introductory level. Students start their specialisation at the beginning of the third academic year, which for the most part channels the future career pathways. Prior to the fifth semester, students

are required to submit their preferences for the major field of study out of (almost) fifteen majors offered by the universities¹⁰. Once students submit their preferences, the departments formulate their merit lists according to the Cumulative Grade Point Average (C.G.P.A) of the interested candidates. Thus, majors preferred by the majority of high achievers results in high merit. Furthermore, since the teaching facilities and capacities of various departments are limited, not all candidates succeed in studying the major of their first preference.

In the last semester¹¹ of the bachelor degree, students are required to undertake an internship in their specific field, in any industry, research institute or project. The progress of the last semester is subject to performance in the internship and external evaluation. Most universities, through their professional ties with research institutes and industries, allocate students to relevant internships. However, some universities and departments also allow students to search for internships on their own in their area of interest. This offers both professional grooming and a test of their academic skills and knowledge. Only agriculture graduates who wish to pursue their education can take admission in M.Sc. Hons. Agriculture, which also leads to a PhD. The post-graduate period of study is extended over two years (four semesters) in the major studied during the Bachelor degree. The last semester of the post-graduate course consists of research work, at the end of which students are required to submit their dissertation.

1.4 Contextualising the State of Agriculture Sciences in Pakistan

Pakistan has come a long way in higher education since its establishment. With the gradual increase in the number of academic establishments in Pakistan over the years,

¹⁰ See Appendix 1.3

¹¹ Semester duration is six months.

the late 1990s and the onset of 2000s witnessed significant expansion of higher education. Moreover, following the upgrading of the University Grants Commission and the organisation of the Higher Education Commission (HEC) in 2002, the country has experienced significant developments in higher education as well as in research and development in various key sectors of education. Besides these developments, the proportion of qualified young people is not in line with the current international trends. The participation rate of young people (aged 17 to 23 years) in higher education is merely 3%, whereas the world average stands at 16.2%. In many European countries, 34% of the youth fully undertakes tertiary education. Even India has more than twice the gross enrolment in tertiary education compared to Pakistan (Qazi et al. 2010: 3). Compared to other countries of similar income levels, tertiary enrolment in Pakistan is ‘abnormally small’ (Easterly, 2001: 7).

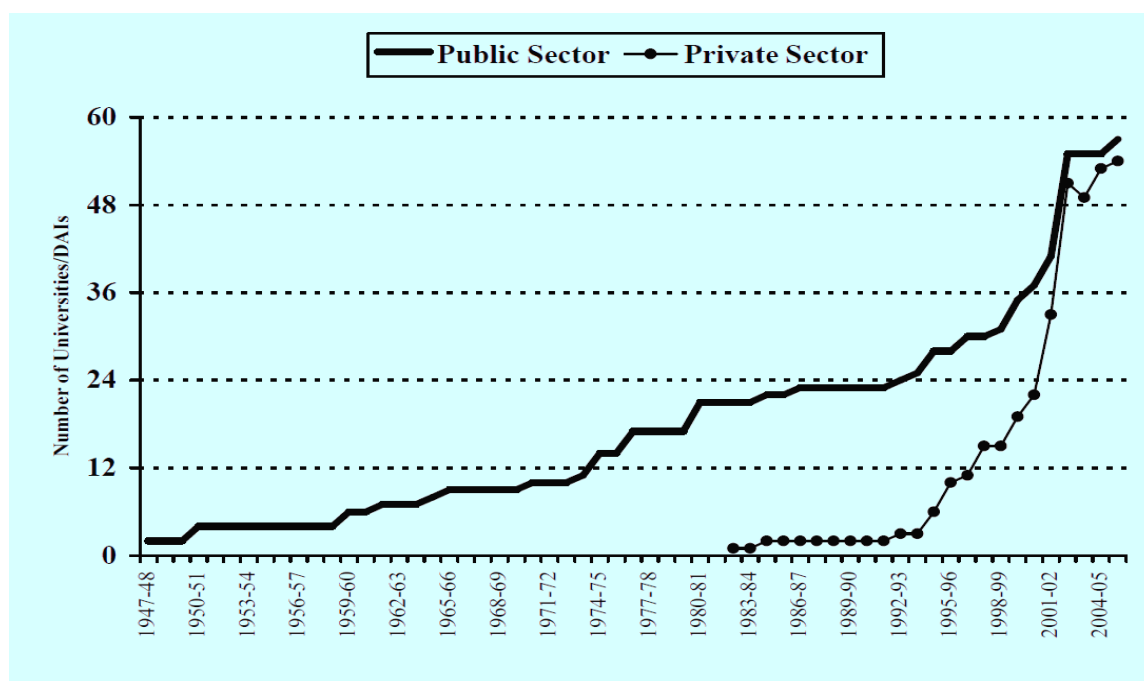


Figure 1.2: Growth of Universities/DAI's in Pakistan (1947-2005)

Adapted From: Statistical Booklet of Higher Education 2005, Higher Education Commission Pakistan (p. 1)

As Figure 1.2 shows, the country commenced its journey 64 years ago, with only a handful of universities and degree awarding institutions (DAIs). The share of the private sector in the education system did not appear until the 1980s and grew at a slow pace for ten years. However, it started to flourish at the beginning of the 1990s and consequently the number of private universities and DAIs doubled by the year 2005. The growth of the private sector in recent years has been much more dramatic when compared to the growth of the public sector. The expansion of the higher education sector continued even after 2005. By 2010, the number of universities and DAIs exceeded the 250 count across the country (HEC, 2010).

The growth of universities and DAIs (Figure 1.2) led to the increased enrolment ratio in higher education shown in Figure 1.3. The cumulative enrolment in higher education in all sectors (distance learning, public and private) has witnessed steady growth throughout these nine years. The total enrolment increased almost threefold during this period. The private sector is catering to the smallest segment, while the majority of students are enrolled in distance learning programmes. It is imperative to highlight that agriculture education is not provided by the private sector or distance learning education. The increase therefore in the enrolment in both of these sectors does not affect the enrolment pattern of agriculture students.

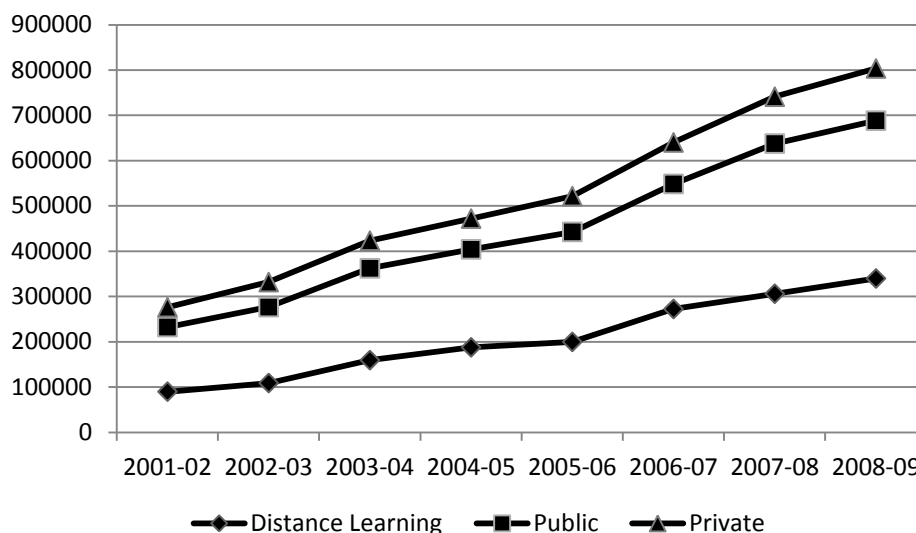


Figure 1.3: Aggregate Enrolment in Higher Education by Sector

Source: Economic Survey of Pakistan 2009-10 (p. 154)

Figure 1.3 exhibits a threefold increase in gross enrolment in higher education from 2001-2009. The enrolment in the public sector also reflects a similar growth trend, leading one to assume that enrolment in Agriculture Sciences would have also followed the general trend. The reality is different however. In Figure 1.4, the gross enrolment in agriculture universities during the same time is presented. Although the number of students studying agriculture increased and almost doubled during the period of these nine years, the growth pattern of agriculture enrolment was much weaker than the overall enrolment pattern in higher education. This indicates that with the passage of time, there has been an increase in the number of students preferring to study disciplines other than agriculture. The number of students studying Agriculture Sciences therefore remains smaller in comparison to many other professional disciplines.

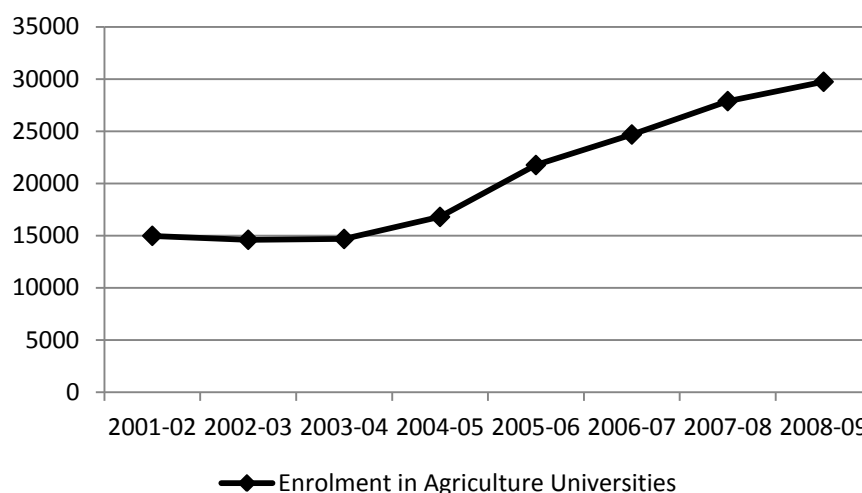


Figure 1.4: Aggregate Enrolment in Agriculture Universities 2001-09

Source: HEC Support to Agriculture, Statistics Division HEC.

There is an evident problem in the enrolment trend of Agriculture Sciences and Figure 1.5 provides evidence through the most recent discipline-specific enrolment in degree programmes. The degree programme that caters to the majority of the young population is the graduation programme of B.A or B.Sc¹². The second highest enrolment is in Social Sciences. One of the main reasons is that B.A and Social Science programmes are offered by distance learning education (and as Figure 1.3 shows, the greatest numbers of students are enrolled in distance learning education programmes).

Among professional degrees, students in Agriculture and Veterinary Sciences do not account for even one-third of the enrolment in Medical or Engineering. Furthermore, Business Education, which is a comparatively new discipline to Agriculture Sciences in Pakistan, has attracted more than three times the students who apply for Agriculture Sciences. Even Arts and Humanities courses (excluding Social Sciences) have higher enrolment than agriculture. The recent enrolment figures are not encouraging for the

¹² See page 6.

agriculture sector by any means. It seems as if the agriculture sector in Pakistan, despite having the largest share of the labour force in the country, will continue to derive negligible benefits from higher education unlike the new sectors of the economy, such as business and technology.

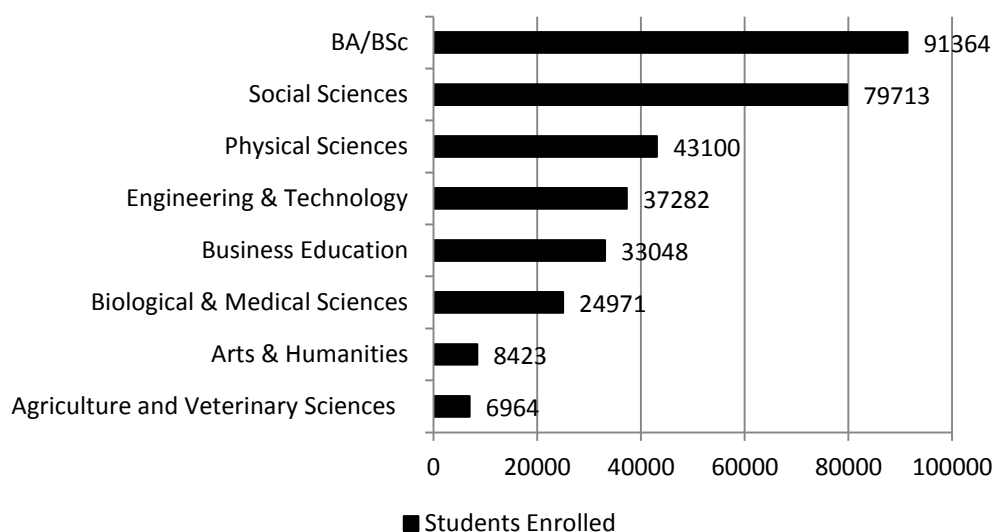


Figure 1.5: Discipline-wise Enrolment at Universities/DAI + Constituent Colleges

Source: Annual Report, HEC 2009-10

Weak enrolment in the agriculture and veterinary sciences at the degree level show that the educational choices of many young people in Pakistan are not directed towards these disciplines and if the current trend continues, then this sector will face a scarcity of qualified agriculture personnel in the future. According to the National Education Census 2005, the agriculture and veterinary sciences together have unsubstantial enrolment. Table 1.1 gives a detailed percentage share of students enrolled in various subjects of higher education, starting from the discipline with the weakest enrolment. The data reveals a striking percentage share of various disciplines. Considering the fact

that the veterinary sector contributes more than 10% in GDP, veterinary sciences still have the lowest number of students. The share of Agriculture Sciences is merely 1.2% of the total number of students enrolled in higher education. Only Nursing and Home Economics have fewer students than Agriculture Sciences, whereas even Fine Arts have more students than Agriculture Sciences. Almost all other professional degrees have greater shares of students than agriculture (students in Pharmacy are 1.4%, Accountancy 1.8%, Medical 2.5%, Law 2.9%, Information Technology and Education 4.8%, and Engineering 5.6%).

Subject of Higher Education	Percentage Share
Veterinary	0.4
Nursing	1
Home Economics	1
Agriculture	1.2
Fine Arts	1.4
Pharmacy	1.4
Accountancy	1.8
Medical	2.5
Law	2.9
Information Technology	4.8
Education	4.8
Business Administration	5
Engineering	5.6
Science Total	15
Commerce	18.6
Arts Total	32.7
Grand Total	100

Table 1.1: Enrolment Share of Various Disciplines in Higher Education

Source: National Education Census 2005

The higher education sector has to pay considerable attention in ensuring its relevance to the state's social and economic needs (Memon, 2010). There is a massive difference between the number of students seeking agriculture education and the employment generated by the agriculture sector. This naturally indicates a skill shortage in the agriculture sector. Moreover, as the demand for agriculture discipline is not high, the private education sector does not invest in this discipline and the government sector alone has to bear the burden of producing agriculture graduates.

The analysis of the secondary data above showed that great majority of the students opt to study professional qualifications other than Agriculture Sciences. However, the student enrolment at the doctorate level in Table 1.2 shows a noticeably different and encouraging trend in Agriculture Sciences. The table shows the number of PhDs produced in seven major disciplines from 1947 to 2009. Compared to the share of 1.2% at Bachelor degree level, the share of Agriculture Sciences at Doctorate level stands at an impressive 13%. In 2009, the number of students enrolled in medical and biological sciences at degree level was over three times that in Agriculture Sciences, whereas in the same academic year the number of PhDs in medical and biological sciences was slightly greater than PhDs in agriculture. While the number of graduates in engineering was dramatically greater than in agriculture, the number of PhDs in the same academic year in agriculture was more than three times than those of Engineering and Technology. Although, overall Biological and Medical Sciences, Physical Sciences, and Social Sciences generate greater numbers of students at Doctorate level, the consistent developments in the number of doctorate students in agriculture show that there is a greater likelihood that students who study agriculture will continue their studies to Doctorate level.

Discipline/ Year	1947-2002	2005	2006	2007	2008	2009	Total
Agriculture	348	30	72	51	94	125	720
Arts & Humanities	665	29	51	68	112	73	998
Bio. & Med. Sciences	586	83	86	92	118	143	1108
Business Education	14	9	8	6	16	30	83
Engineering & Tech.	21	8	14	23	42	35	143
Physical Sciences	709	69	76	103	121	154	1232
Social Sciences	886	98	99	90	143	135	1451

Table 1.2: Discipline-wise Detail of PhDs in Pakistan since 1947

Source: Higher Education Commission Annual Report 2009-2010 (p. 110)

Although the number of students studying agriculture has been increasing over the time, the demand from the agriculture sector remains unmet. According to Agriculture Science and Technology Indicators (Beintema et al. 2007), the aggregate of full time equivalent (FTE) public agriculture research staff was nearly 3,500, implying that there were only 21 agriculture scientists per million people in 2003 as compared to “44 agricultural scientists per million people during 1988” (John Mellor Associates, 1994 cited in Iqbal and Ahmed, 2005: 16). Pakistan Agriculture Research Council (PARC, 1996) highlighted that “the number of agro-ecological zones, types of agricultural production systems, and 130 commercial crops that the country’s agricultural research deals with, demands for a much greater numbers and more qualified scientific staff to be engaged in agricultural R&D activities” (Iqbal and Ahmed, 2005: 16).

Regardless of the nation’s demands, the number of agriculture researchers in Pakistan’s public sector has grown at a marginal level of 0.4 percent per annum during 1991-2003, meanwhile research agencies in Punjab witnessed a steady decline in agricultural research staff (Beintema et al. 2007: 13-14). Figure 1.6 shows an unimpressive increase

(approximately 7%) in agriculture research staff in the public sector during 1991-2003. The state of the higher education sector is much worse. There were only 265 FTE research staff in the higher education sector in 1991, and this count could not even surpass the 300 mark by 2003. Higher education institutions constitute only 10% of the aggregate agriculture R&D spending and staff in Pakistan (ibid.).

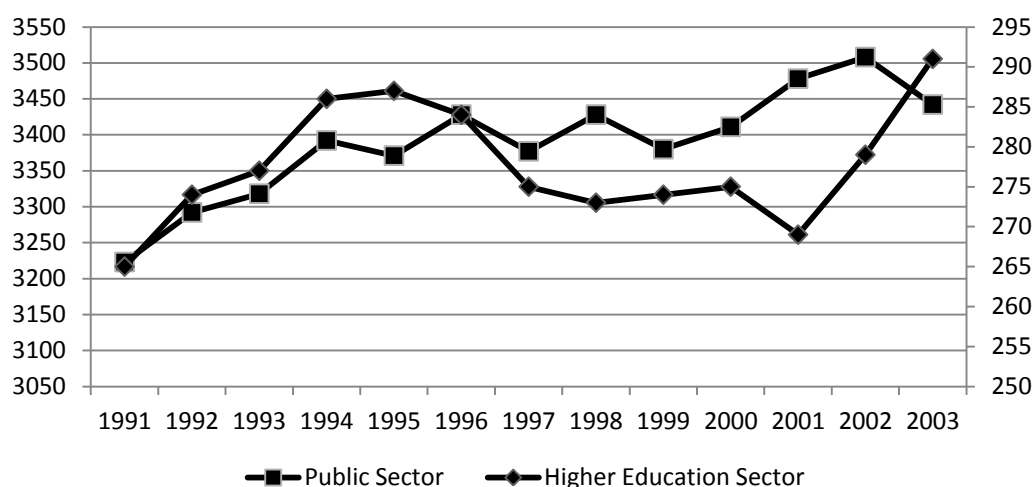


Figure 1.6: Research Staff (Full Time Equivalent) in Public Sector and Higher Education Sector, Pakistan from 1991-2003

Source: Agricultural Science and Technology Indicators

Besides their lower numbers in Pakistan, the level of academic qualifications of agriculture researchers reinforces the need to promote agriculture sciences in the country. Figure 1.7 adapted from Beintema et al. (2007: 16) demonstrates the level of educational qualifications of agriculture research staff by institutional category in 1991 and 2003. The figures show that the majority of the research staff is postgraduate. Besides the significant increase of PhDs in agriculture sciences, the percentage share of PhD scientists among the total research staff remained less than 20% in more than a decade. As can be seen from Figure 1.7, the level of graduate research staff has

considerably increased in PARC and remained stable in National Agriculture Research Council. However, the higher education sector had a lower number of graduates and a higher number of postgraduates and PhDs in 2003 as compared to 1991. The provincial agencies had comparatively fewer qualified staff than federal agencies and the higher education sector.

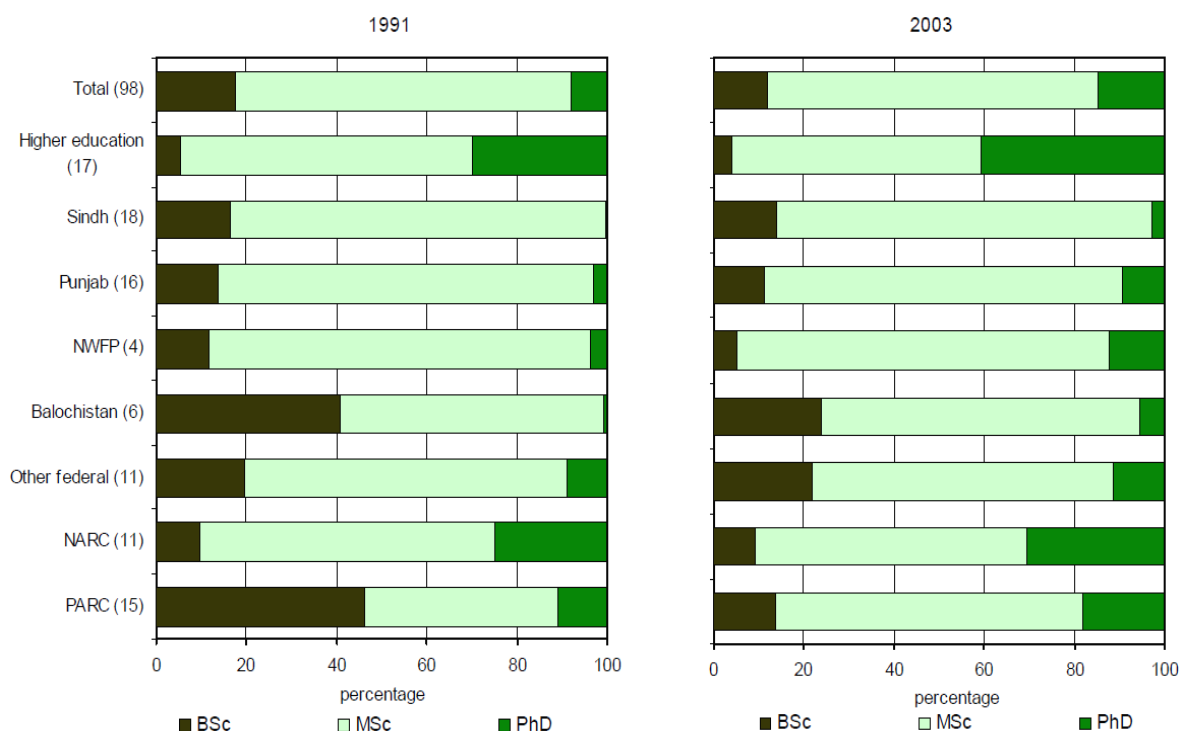


Figure 1.7: Educational Qualifications of Research Staff by Institutional Category: *Figures in parentheses indicate the number of agencies in each category. Adapted from: Beintema et al. (2007:16)*

Although the qualification levels of agriculture researchers have increased according to Figure 1.7, Pakistan still has a long way to go in developing adequate human resources in Agriculture Sciences. The qualification levels of Pakistan's agriculture research staff are comparatively lower than that of many countries in the Asia-Pacific region. For instance, the percentage share of researchers trained to PhD level in Pakistan (15%) is

lower than in India, Nepal, Bangladesh and Sri Lanka (Stads and Shrestha, 2006; Beintema and Kabir, 2006). Additionally, the share of the higher education sector in the total FTE public agriculture research staff has been the lowest (from 1990s to 2003), when compared to India, Iran and Bangladesh (ASTI). Furthermore, the distribution of highly qualified researchers is also uneven, as the majority are concentrated in academic establishments and only one third employed in federal institutions, thereby leaving provincial research institutions deficient in highly qualified staff (FAO-GoP, 2002 in Iqbal and Ahmed, 2005).

With reference to the shortage of senior agriculture research staff, the last decade has been considerably challenging for agriculture establishments. The majority of the researchers trained under the foreign funded Agriculture Research Projects in the 1990's could not be replaced at the time of their retirement because of the government's lack of interest in developing a new system of human resource development (Khushk et al. 2004; Sheikh and Afzal, 2004). Beintema et al. (2007:17) found that "in some provinces key positions, such as breeders for the country's four principal crops (wheat, cotton, rice, and sugarcane)" were vacant at the time of data collection due to the shortage of eligible and competent candidates. The National Agricultural Research System (NARS) has insufficient staff with little research capacity. In the context of financial and resource constraints, this 'unmotivated scientific manpower' cannot meet future expectations in such circumstances (Iqbal and Ahmed, 2005: 19).

The shortfall of suitable agriculture research staff is further intensified due to the "continuous brain drain from the system" (ibid.: 16). Researchers at government research agencies are not offered ample promotional opportunities, attractive salary

packages and benefits. Furthermore, the promotions are based on seniority rather than merit, leading to misallocated expertise in various departments (Beintema et al. 2007). Unfortunately, even the highly qualified agriculture scientists are not offered adequate financial incentives or career growth opportunities in Pakistan (FAO-GOP, 2002).

The enrolment trends in Agriculture Sciences clearly indicated that it is preferred less by students as compared to other disciplines in Pakistan. Furthermore, the dismal growth in the number of agriculture researchers and qualified professionals in agriculture research and development sector indicates that those who do join this field are heading for opportunities outside the agriculture research sector or even outside Pakistan (Beintema et al. 2007). This implies that the agriculture sector remains deficient in reaping the benefits of a professionally trained and educated human resource.

Considering the importance of agriculture for Pakistan, the recruitment trends and retention trends of agriculture scientists imply that there is an evident problem that needs immediate attention. If more students are not attracted towards agriculture sciences, their occupational choices are not directed towards agriculture production and R&D, and their retention is not ensured, it will lead to serious implications on the growth and development of the agriculture sector of Pakistan.

1.5 Motivation for the Study

My interest in exploring the educational and occupational choices of students (particularly agriculture students) emerged from my personal observation and curiosity. I did my post-graduate at Department of Sociology at PMAS-AAUR, where for the very

first time I interacted with students studying agriculture. I felt surprised at my own lack of knowledge regarding agriculture sciences. I wondered how and why I never knew about agriculture sciences or universities. I had lived, since my childhood, in the city that had one of the few agriculture universities of the province yet I had never heard from my fellows or teachers about professional education in agriculture. On the other hand, basic knowledge about the educational and occupational choices in other disciplines, e.g. Basic Sciences, Management and Computer Sciences, Medicine and Engineering were widely known.

Furthermore, there is a common misconception in Pakistan that those students who study science at the HSE level will join medicine or engineering related professions, and that only those students who are unable to get admission into any other professional college secure admission in agriculture universities. The noteworthy disparity between the admission merit of agriculture universities and medical or engineering universities supports the notion that high achievers aim towards qualifications and professions other than agriculture.

In response to these observations, the educational and occupational choices of agriculture students emerged as an intriguing phenomenon. How do students choose to study agriculture? Is studying agriculture and developing a career identity as an agriculture scientist undesirable? If so, why? How do social experiences contribute to the academic and career decisions made by students? All of these questions stimulated me to study the educational and occupational choices of students in depth.

1.6 Objectives of the Research

Addressing the issues raised earlier in the chapter, the goals of this research study are as follows:

1. To develop an understanding of the educational and occupational choice process of agriculture students in order to deal with the poor enrolment in agriculture sciences, and the career choices of agriculture graduates outside the agriculture sector in Pakistan.
2. To explore the barriers in the choice process of agriculture students and make suggestions to the stakeholders of higher education on ways to confront those barriers.
3. To contribute an in-depth investigation into the limited knowledge of educational and occupational choices of agriculture students in Pakistan.

1.7 Research Questions

My personal experiences and evidence on limited participation in Agriculture Sciences, the inadequate number and qualification levels of agriculture researchers and the shift of occupational destinations from agriculture to other sectors of the economy, all highlight the crucial problem of the educational and occupational choices of agriculture students in Pakistan. Higher education in Agriculture Sciences has to be promoted, in a systematic manner, by developing a thorough understanding of how students make their educational choices and the way they prioritize their occupational preferences.

Considering the importance of the choices made by agriculture students and motivated by the goals of this research, the study aimed to explore the educational and

occupational choice process of agriculture students in Pakistan through answering the following two questions:

1. What are the evident stages in the educational and occupational choice process of young Pakistani students who decide to study agriculture sciences and pursue a career in the field of agriculture?
2. How do personal and socio-cultural elements influence the educational and occupational choices of agriculture students in Pakistan?

1.8 Significance of the Study

The study is significant in a number of ways and can contribute in the following manner:

1. The research will be able to make some policy recommendations that will help to create a conducive and supportive environment for the youth to choose agriculture as an academic choice leading to a meaningful and productive career.
2. The research will provide agriculture universities and institutes with a comprehensive understanding of students' choice process. This in turn will facilitate higher education institutes to develop meaningful strategies to attract students and design their marketing strategies accordingly.
3. The research will provide insights regarding the issues that impact on the retention of agriculture graduates from the perspective of young people. It will facilitate agriculture research institutes to develop strategies that encourage agriculture graduates to aim for careers in research and development.

Furthermore, in the light of the findings, policies can be formed that help retention of agriculture graduates.

4. Knowledge generated through the qualitative interviews in this study will make a valuable contribution to the existing literature in the area of educational and occupational choices in Pakistan, given that previous studies have predominantly adopted quantitative methods of inquiry and utilized secondary data.

1.9 Structure of the Thesis

Beside this first chapter, the thesis consists of five chapters. Chapter Two presents a review of literature. It first discusses how theorists believe choices are made, and the role of structure and agency in choices. Secondly it discusses the theoretical developments in the arena of educational and occupational choices. It then moves forward to discuss the various sociological models presented by contemporary theorists that explain how students make their educational and occupational choices. The fourth section of the chapter comprises of a review of the role of various factors that influence educational and occupational choices. In doing so, it utilizes the empirical evidence available for the factors that influence young people studying agriculture or pursuing a career in the agriculture sector.

Chapter Three features the methodology of the study. Firstly, it justifies the application of qualitative research methods to address the research problem. It then details the procedures of data collection using semi-structured interviews on various cohorts of students chosen as the sample and the rationale for their selection. Furthermore, it shares the field experiences, during the pilot study as well as during the main research.

It discusses the procedure of transcribing and translation of the interviews, and the steps taken for data management and analysis. Moreover, it discusses the ethical issues of the study.

Chapter Four is the first part of the analysis, presenting an explanation of how students make their educational and occupational choices. It explains the evident stages of the choice process that have emerged from the data, and the interdependence and connections between all stages. It also states how an individual's personal input and their agency, combined with structural forces, shape their choice process. The results are presented via an analogy of a farmer growing a plant. The role of the farmer represents the human agency in the choice process, whereas the role of structure is reflected through various elements influencing different stages of the choice process.

Chapter Five is the second part of the analysis. It explores how various factors influence the choice process. As all students do not uniformly engage in the choice process, the analysis highlights the factors that facilitate or limit students' power to make choices regarding their courses of action. The chapter first explains the role played by residential background and locality. It elaborates on three main ways through which belonging to rural or urban areas shape the educational and occupational choice process of agriculture students. Secondly, it discusses the influence of gender as agriculture sciences are perceived to be more apposite for male students due to the fieldwork involved in the degree. Thus female students approach agriculture sciences differently considering such issues. Thirdly, the prestige value and social image of professions other than agriculture posing a threat to recruitment in agriculture sciences are discussed. Lastly, the role of parental support in the educational and occupational

choice process is discussed as it significantly contributes to shaping, advancing or restraining the choices made by the students.

Chapter Six is the last chapter of the thesis. It summarises the research findings in the light of the research objectives outlined in this chapter. While explaining the stages of the educational and occupational choice process identified by the study, it proposes some policy recommendations for the higher education sector, agriculture universities and institutes of the country. These recommendations can yield fruitful results in attracting greater numbers of quality students, who plan to develop their career identity as agriculture professionals. This in turn will help students to establish a valuable career and will also contribute to the overall socio-economic development of the country. The chapter also features the modest contribution this study has made and its limitations. The chapter then identifies areas for further research and concludes with my brief final remark on the study.

Chapter 2

LITERATURE REVIEW

Introduction

This chapter reviews literature pertaining to the educational and occupational choices of young people and the influences that bear upon those choices. The discussion is mainly based on the existing literature on post-16 choices, given that the focus of the current research is to show how students make choices with respect to studying agriculture at the higher education level. This chapter is divided into four sections. The first section defines choice and how social scientists perceive that choices are made. The second section reviews the theoretical developments in ‘career decision-making’ followed by the third section that analyses the contemporary developments made in modelling the choice process.

Research exploring the academic and vocational choices has attracted great attention and numerous studies have explored the factors that influence students’ choices. The empirical evidence in the arena of educational and occupational choices will be reviewed in order to understand which factors impact on the choices as well as the choice process of the students. Thus the last section will discuss various factors that have profound impact on the education and career choices and will also incorporate findings from the literature on choices made by agriculture students.

2.1 Conceptualising ‘Choice’

Choice is “an act of choosing between two or more possibilities” (Oxford Dictionary). According to Patton (2007), the key elements of a choice process are the decision-

maker and the situation which presents two or more alternative courses of action. The decision-maker should be capable of assigning values to the various alternatives. Where alternatives possess an equal chance of attainment and are more or less similar in their appeal or importance, a simple choice process will be required, whereas the decision-making process is not required at all if there is only one possible or available solution to the situation.

Social scientists have made significant contributions in explaining how individuals make choices regarding varying matters. However, consensus among social scientists has been difficult to achieve due the debateable role of 'structure' and 'agency' (White, 2007). The point of controversy is whether social actors actively engage in and control the choices that shape their lives, or whether the forces in the dominant social structure regulate human behaviour (Patton, 2007a: 3).

The concept of individual choice inherently calls upon the dominance of agency because individual decides which action will yield the most favourable or desirable outcomes. Agency is defined as the social actor's ability for action (Ritzer, 2007), his acquisition of free will and the capacity to behave as one likes (Giddens, 1984) and freedom of action (White, 2007). Those who advocate the power of agency believe that all social phenomenons should be expounded on the basis of agency because only social actors and their actions are real (Ritzer, 2007).

On the other hand, the persistent patterns of behaviour within the social structure have a substantial restraining effect on the freedom of individuals' choices (Walsh, 1998). Personal preference is only one of several variables affecting the way a person chooses

when faced with concrete alternatives (Sofer, 1974). “Structure refers to those factors, such as social class, religion, gender, ethnicity and customs, etc., which seem to limit or influence the opportunities that individuals have” (Patton, 2007a: 3).

In the context of educational and occupational choices, an explanation based on agency’s supremacy would be that the choice to study and pursue a career in agriculture is solely an individual’s decision, based on his or her personal assessments and abilities alone. Conversely, the structural perspective will define how those very same choices concerning higher education and occupation exist and are shaped by the greater social forces outside an individual. It is not plausible to assume that students either make all the choices themselves without any external influence, or that they make no choices and are almost always structurally bound. In order to conceptualise choice on the basis of reality, numerous theorists are actively working to go beyond the idiosyncratic dichotomies of agency vs. structure, micro vs. macro, and voluntaristic vs. deterministic, as these are highly restrictive in developing a holistic perception of social behaviour.

The education-to-employment transition process is based on the combination of individual freedom of action and individual input (agency), and also structural input i.e. social stratification, institutions etc. (White, 2007a; Rudd and Evans, 1998). The term ‘choice’ indicates individual freedom: the ability to consider alternatives and to choose the one that satisfies goals as per the chooser’s perception. However, in reality, choices are not as sovereign as they might feel or appear. Emphasizing the involvement of structural features in individual choices and reinforcing the importance of practising

agency, Hotchkiss and Borow (1996: 306-307) explain how career counselling should be practised:

We most emphatically do not want to convey a message of fatalism. The sociological work does not imply that individuals are helpless against overwhelming inequities and rigidities, but only that very real constraints do operate. We believe that the central tenant of the counselling profession – that individuals must act energetically on their own behalf – is fundamental to responsible practice.

Society and social actions should not be categorised as cause or effect only. In fact, their role is much more intriguing. In order to advance knowledge and to understand choices (e.g. educational and occupational choices), the concept of structure and agency should be utilised to make the realities understandable rather than applied to defend the supremacy of one over the other. The role of each can be better comprehended on the basis of empirical evidence rather than abstract arguments alone. The current research will endeavour to explore, through qualitative research on decision-making, the way both interact in real situations.

2.2 Theoretical Perspectives in Educational and Occupational Decision-Making

How individuals make their educational and career choices has been defined by diverse theoretical standpoints. These theoretical viewpoints have been influenced by the popular theoretical trends, famous among researchers in their time (White, 2007a). One of the core issues instigating the theoretical debate in the latter half of the twentieth century was, yet again, the perceived role of human autonomy (agency) and social structure in individual choices. The following discussion will review the theoretical

developments in the arena of educational and occupational choices, and evaluate their potential for explaining the choice process.

2.2.1 Developmental vs. Opportunity Structure Theories

The developmental models of career progression, often associated with Ginzberg et al. (1951) and Super (1957, 1968), provide psychological explanations of how young people make their career decisions. However, these models advanced explanation of career decision-making in psychology as they broke the “static trait-and-factor theory of occupational choice” (Brown and Brooks, 1996: 3). Focusing on emotions, values and self, Ginzberg et al. (1951) saw occupational choice as a developmental process which takes place during marked periods of an individual’s life and is principally irreversible. Making career decisions was seen as a lifelong process (predominantly completed in early adulthood) for people aiming for contentment. For the majority of people, the process of occupational choice is about making a compromise, where people attempt to adjust their personal interests, abilities and talents with the opportunities they come across (Ginzberg et al. 1951).

One of the well-recognised contributions of the developmental school of thought was the introduction of the ‘self-concept’ while explaining career choices. Self is the core of the human personality and the primary motivating force in human behaviour (Lecky, 1945). It changes with time and social experience, making choice a continuous process (Super, 1953). With the passage of time, people refine their self-concept, and its application to the occupational world eases their adaptation to career choices (Savickas and Lent, 1994).

The developmental models were criticized by fellow sociologists for explaining occupational choices in terms of agency alone and underplaying the role of socio-economic conditions. Career decisions are not all about personal development through age and experience. Social elements like gender, race and social class also significantly intercept individual choices and the decisions about career life (Savickas and Lent, 1994).

In contrast to the notions presented by the developmental theorists, the structuralist model of education decision-making expounds the deterministic role of social structure in shaping educational and occupational choices. Roberts (1977) initiated a debate by magnifying the role of opportunity structures e.g. industrial settings, employment trends and government policies. He believed that the opportunity structures explicitly limit the availability of an array of careers for students to choose from, and restrict occupational choices. Individuals are hardly ever “encouraged to make well-informed, deliberately planned choices...” (Kerckhoff, 1976 cited in Brown and Brooks 1996: 276). Overruling the role of human autonomy, Roberts (1977: 1) concluded that:

Neither school-leavers nor adults typically ‘choose’ occupations in any meaningful sense; they simply take what is available.

2.2.2 Models of Economic Rationality

Unlike the psychological and sociological explanations, the economic models of education and career decision-making tend to explain choices with respect to rational and conscious cost-benefit analysis. Based on the human capital model (Becker, 1975), the economic models of educational and occupational choice focus on individual autonomy, where choices are a careful collection of information, observation,

evaluation of alternatives and potential outcomes (Patton, 2007b; Scott, 1999; Box and Ford, 1967; Simon, 1957). Students evaluate their (educational and labour market) options, assess expected returns, and estimate the required time to realise the returns and the probability of failing (Payne, 2003; Goldthorpe, 1996). The alternative that offers maximum utility is ultimately chosen (Bennett et al. 1992). According to Berends et al. (2009: 36) “individuals act out of self interest; that is, they act only in terms of their personal preferences, and are rational in that they methodologically order all choices from the most to the least desired”. The theory holds the idea of efficacy and wealth maximisation, and overrules those theorists who believe that external elements inevitably determine social action in the structure (Coleman and Fararo, 1992).

The economic models appear irresistible when seeking explanations of how students make their educational and occupational choices especially in a developing country like Pakistan, where families invest a considerable amount of money on the education of young people. The great majority of the people seek education not only to gain knowledge, but also because higher education is seen as highly instrumental and is taken as the means to achieve occupational and professional ends (Payne, 2003). Regardless of its ease of application in the current research, the reliance on rational choice theory is problematic, “because people don’t behave as rationality requires them to” (Elster, 1986: 17). Rather, they “act habitually, normatively or simply irrationally” (Patton, 2007a: 31). Empirical evidence in educational choices confirms that parents and children do not behave in the pattern explained by the rational choice theory (Gorard, 1997; Martin, 1995; Young, 1994). Krieschok (1998) also concluded in his review of literature on decision-making that decisions are not taken following a

completely rational process and the cognitive processing regarding decisions are not always undertaken at a conscious level.

The assumption that students choose those educational and career paths which appear to maximise their preferred future gains is problematic because the resulting benefits of educational and occupational choices actually materialise after a considerably extended time-line. In addition to this, estimating and calculating realistic outcomes of investments is a difficult task to perform (Foskett and Hemsley-Brown, 2001). Young people are neither inclined towards forecasting the expected future economic returns of education nor are they always good at making rational calculations (Foskett et al. 2004: 9).

Characterising choice as a rational and logical process is a challenging task (Davies, 2003). Not only it is troublesome for the social actors to engage in rationality; it is also difficult for the researcher to categorise individual choices as rational or irrational (White, 2007a). Even the supporters of rational choice theory are not consistent about what constitutes rationality (Sullivan, 2002b). If jobs in the agriculture sector (in Pakistan) offer comparatively fewer economic incentives than other professions, then are students choosing to study agriculture making irrational choices? Or, are all of the students who join agriculture universities aware of the long term benefits? Or that they are making well-informed and calculated choices, based on careful cost benefit analysis? The question is can we determine who is making a rational decision by choosing to study agriculture and who is not because rationality “maybe “situated” in different social context based on particular social meanings and arrangements” (Chattoe-Brown, 2009: 206).

Some studies recognise a rational process that is linear or is characterised by some stable features (Choy et al. 2000; McInnis et al. 2000; LeClaire, 1998) whereas others could not find such a rational and stable decision making process (Connor and Dewson, 2001; Perna, 2000; Tyler, 1998; Bloomer and Hodkinson, 1997).

Even when actions appear rational, the underlying desires or motivations might be otherwise, and the ‘rationality’ of the choices may be overshadowed by unconscious desires (Davies, 1991). People also seek non-material goals, like social status and prestige, through their education and profession (Foskett and Hemsley-Brown, 2001). Young people might base their decisions on benefits which are not economic by any means. Some choose particular subjects because they are ‘cool’, prestigious or ‘fashionable’, and such benefits are mostly short-term and powerful enough to push their choices towards a specific direction (Foskett et al. 2003).

The assumption that all agents are well aware of the “full choice sets and correct payoffs” also becomes insubstantial on the face of gossip (Chattoe-Brown, 2009: 205). Moreover, in real life people neither have an equal urge to collect information nor do they have equal access to information or the ability to rationally process and evaluate the alternative courses of actions. According to Foskett and Hemsley-Brown (2001), people might be contented with an option that appears or seems ‘good enough’ for the time being instead of the one which is rationally the best.

Thus, explaining choices as plainly rational actions alone will not present a holistic picture of students’ educational and occupational choices; however, it is believed that if

this approach is amalgamated within research along with other theoretical approaches, it can yield much more fruitful results (Patton, 2007a).

2.2.3 Theory of Cultural Reproduction

The theory of cultural reproduction by Pierre Bourdieu was seen as a “break from the prominent structure-agency dichotomy of the social sciences” (Patton, 2007a: 18). He closely examined the role of the education system in transmitting the culture of ‘dominant classes’, eventually leading to cultural reproduction. The theory explained “the link between the original class membership and the ultimate class membership, and how this link is mediated by the education system” (Sullivan, 2002a: 144). For Bourdieu, the education system in modern societies legitimises the disparities within the social classes. Two core elements of his theory are ‘cultural capital’ and ‘habitus’.

“Habitus refers to the lifestyle, the values, the dispositions and the expectations of particular social groups” (Patton, 2007a: 11). People’s internalisation of habitus shapes their behaviours. It should not be assumed that people do not possess free will; habitus is in fact “the mediating link between objective social structures and individual actions and refers to the embodiment in individual actors of systems of social norms, understandings and patterns of behaviours, which, while not wholly determining action ... do ensure that individuals are more disposed to act in some ways than others” (Painter, 2000: 242).

It follows that a student belonging to an upper-class, highly educated family and social circle, with ample experience in credible educational institutes, will not try to pursue a career in agriculture because it is not part of his habitus and does not appear as

‘reasonable, common sense behaviour’ (Bourdieu, 1994). Since habitus (overtly or covertly) imposes class culture on individuals, the role of individual choice, ability, willingness and agency diminishes (Patton, 2007a: 13).

Bourdieu refers to cultural capital as the “possession of and familiarity with the dominant culture because, via the educational system, it can be translated into wealth and power” (ibid: 10). Students belonging to the higher class are socialised in the dominant culture, and are equipped with certain knowledge and a set of skills assumed during their school life. This cultural capital facilitates their achievements at the higher education level. However, Sullivan (2002a: 146) argues that ‘cultural capital’ has not been clearly constructed and that Bourdieu is not “precise enough about exactly which of the resources associated with the higher-class home constitute cultural capital, and how these resources are converted into educational credentials”. This potentially explains why the concept of cultural capital has been operationalised differently by researchers (White, 2007a).

Beside this, employing the term ‘capital’ to socio-cultural constituents has been criticised because of its possible connotations economic capital. In reality, cultural capital has no resemblance with economic capital. When expended, economic capital shrinks whereas social capital increases or at least does not decrease; where economic resources can be counted and measured vividly, social or cultural capital cannot be directly measured (Blackburn, 2003).

Regardless of the issues of the cultural reproduction theory, recent developments in the explanation of students’ choices have based their analysis on Bourdieu’s theoretical

constructs and have reinforced the classed nature of educational and occupational choices (e.g. Ball et al. 2000; Hemsley-Brown, 1999; Foskett and Hesketh, 1997; Hodgkinson et al. 1996). The approach adopted by these studies for measuring, defining and operationalising social class has been called into question. While judging social class to be significant in the choice process, criticisms of the approach caution researchers to “be clear on what they are measuring if their conclusions are to be considered warranted” (White, 2007: 36).

Social class is not a simple concept to operationalise. Western countries may have a much clearer and more widely acknowledged schema of social class (i.e. working class, service class and intermediate class) compared to Pakistan. In Pakistan, drawing class based conclusions was difficult. This was because of the diverse socio-economic groups and complex class hierarchy in the country. Besides other agreed upon determinants of social class (e.g. wealth, occupation, education, ethnicity), the caste system complicates classification of classes. Alongside the castes based on religion, ancestry or ethnic background, there is a caste system based on agriculture professions, which further complicates drawing class-based conclusions from the accounts of Pakistani students. There exist labourers who work on daily wages or who are employed seasonally, and have scarce economic resources. On the other extreme of the continuum, there exist rich feudal lords who hold empires of agriculture landholdings. In between, there exists a vast variety of agriculture labourers, farmers with variable landholdings and owners of family-sized farms.

Exploring the role of structural features and individual autonomy in the educational and occupational choices of individuals is a difficult and challenging area to research. If any

empirical evidence aims to develop an understanding of students' choices, then a better and more daring choice is to keep the research unconstrained by inflexible theoretical beliefs. Existing research in the area of educational and occupational choices appears to be wedded to the aforementioned theoretical positions, which limits rather than enhances the explanation of the choice process (White, 2007a). The current research therefore focused on an empirical investigation, with the aim of exploring in an open-ended fashion how students make their educational and occupational choices. The investigation took its cues from 'curiosity and surprise', as recommended by Gorard (2002), in order to draw a picture based on reality.

2.3 Models of Educational and Career Decision-Making

Recent models, briefing the process of educational and occupational choice, have attempted to incorporate the realities of the social life (structure), and the dynamics of individual personality and the ability to practice free will (agency). These are categorised as "hybrid models" (Patton, 2007: 7). This section will discuss these recent models of educational and occupational decision making, and will extract pertinent ideas for the current research.

2.3.1 Careership: A Sociological Theory of Career Decision-Making

Hodkinson et al. (1996) developed a model of career decision-making, 'Careership', based on the findings of their longitudinal case study and on the work of Bourdieu. Their model comprised of:

Three completely integrated dimensions... (i) pragmatically rational decision-making, located in the habitus of the person making the decision; (ii) the

interactions with others in the (youth training) field, related to the unequal resources which different 'players' possess; and (iii) the location of decisions within the partly unpredictable pattern of turning-points and routines that make up the life course (Hodkinson and Sparkes, 1997: 29, italics in original).

They asserted that decisions are not merely cognitive: they also involve physical and emotional elements. People base their decisions on incomplete sets of information and tend to be unconcerned with seeking complete information. Furthermore, not everyone considers multiple options. Many people consider only one opportunity rather than comparing one opportunity with others. Unlike what technical rationality proposes, career decisions involve not one individual but several. Moreover, 'serendipity' has its own significant place in the choice process (Hodkinson, 2008).

Hodkinson et al. (1996) believed that choices were not completely irrational because at some stage of decision-making, people evaluate options and their outcomes. Their model suggests that individual choices reflect 'pragmatic rationality', which is constrained by 'horizons of action' i.e. the possibilities of particular courses of action and alternatives, based on the opportunities in the job market, educational opportunities and the individual's personal perception of what is possible, desirable and suitable. These horizons of action are subject to "a person's position, by the nature of the field or fields within which they are positioned as well as the embodied dispositions of the person" (Hodkinson, 2008: 4).

The model is presented as an Euler diagram (see Figure 2.1), consisting of three interlocked dimensions of 'habitus', 'field' and 'turning points'. The overlapping of

these represents the “pragmatically rational career decisions” (Hodkinson et al. 1996: 149). An individual’s power over his own career choices “was strongly affected by their position in the field” and the economic, social and cultural “resources at their disposal” (Hodkinson, 2008: 7). The constant “actions, reactions and interactions” with other stakeholders in the field influence the “positions, dispositions and identities” of individuals, along with the fields in which they participate. The aforementioned continuous process can play two roles in an individual’s career construction. It “can reinforce existing dispositions and career pathways” and it can “contribute towards changing those dispositions and career pathways” (ibid: 9).

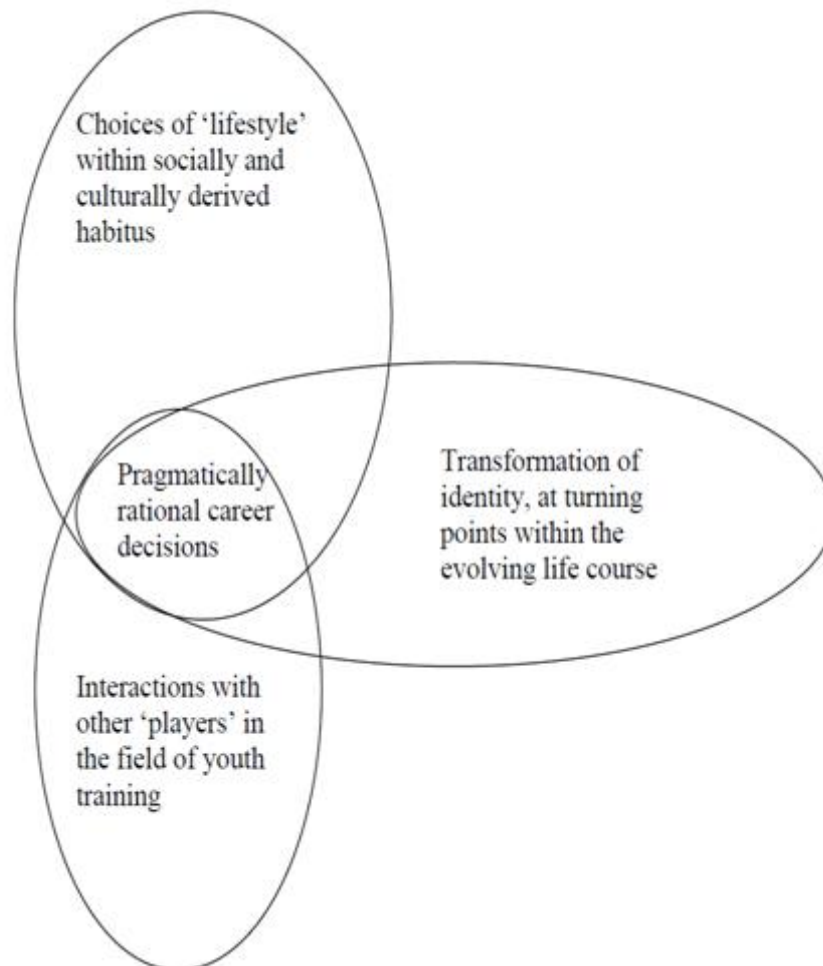


Figure 2.1: Careership: Model of Pragmatic Rationality

Hodkinson et al. (1996: 149)

Compared to ‘habitus’ and ‘field’, the more fruitful constituents of their model are ‘routines and turning points’, which highlight the non-linear nature of career choices. Reviving Strauss's (1962) stance that career decisions are subject to occasional turning points, these elements provide depth to the understanding of educational and occupational choices. The initial elaboration of this third dimension proposed that routines and turning points were interrelated; however, later analysis raised issues about this notion. What appears as routine in an examination of a comparatively shorter timeline (e.g. months) might be a part of the turning point of a life course. Similarly, what feels like a major turning point in a short period might simply be a part of the routine in a longer time period (Hodkinson, 2008).

Considering the wide range of options available to students in the modern education system and the increase in the number of specialisations in various professions, inculcating the notion of turning points and how they impact individual choice can produce valuable insights into the educational and occupational decision-making process. It is worthwhile to investigate the role of turning points, happenstance (Miller, 1983), serendipity or chance in the educational journey of students.

The work of Hodkinson et al. (1996) further inspired researchers in the area of career decision-making (e.g. Hancock, 2006; Reay et al. 2001; Ball et al. 2000). These studies produced encouraging results, confirming the notions of pragmatic rationality, the embodied and positioned nature of choices, and (an obvious assertion) that decisions are always influenced by the interactions with others. These findings strengthen their hypothesis that decisions are never “completely irrational” and that all career decisions are always pragmatically rational (Hodkinson, 2008). This leaves no space, whatsoever,

to explain individuals who act outside of rationality and engage with an option “against their own interest by being contrary, stubborn and rebellious” (White, 2007a: 27).

Hodkinson (2008) disagrees with the developmental stance that choices occur in a series of stages, because the idea that the order of the stages varies among different people under different circumstances undermines the prime meaning of development. The model does not present any series of action adopted to reach a career decision, and is deficient in detailing the paths young people take in their career progression. The model therefore falls short of illuminating the *process* of educational and occupational decision-making, and has been criticised for merely grouping together ‘factors’ that impact on transitions and choices (White, 2007a: 26-27).

2.3.2 The Four C’s Model of Choice and Decision-Making

Foskett and Hemsley-Brown (2001), reflecting on the concept of choice, elaborated that choices are neither made in isolation nor are they disconnected from other experiences of an individual’s life. Educational choices made at any particular point share common themes and links with choices made on other earlier occasions. Thus, any research which concentrates on a particular time span in the educational career of an individual gives a useful but incomplete picture of the overall choice process. Educational choices have a strong connection with preceding choices, and significantly shape forthcoming decisions and subsequent opportunities and possibilities (ibid.). It is therefore argued that “choice is clearly both complex as a process and multi-factorial in terms of the range of influences that bear upon that choice” (Foskett et al. 2004: 9).

The model is compelling for bringing together a wide range of themes, from personal features of the choosers to the structural features influencing in the multi-layered choice process. The components of the Four C's model are briefly reviewed below.

1. Context

Choices take place, and the choosers operate, within a broad context. The context consists of various environments of the chooser's life through which they have lived: their home environment, their living environment (i.e. their geographical location), the environment of the institutions they participate in and the social environment in which they move. Each kind of environment introduces numerous people, processes, socio-cultural attributes and values.

2. Choice Influencers

The implicit role of context does not finish here. It proceeds to influence choices in an 'active explicit' fashion, through choice influencers. The influencers can be people (e.g. parents, siblings, teachers and friends) as well as processes (e.g. media communications). The distinction between the covert role of 'context' and overt role of 'choice influencers' can be understood with reference to the role of family in the choice process. The passive role of the family is to develop the environment within which the child grows up, comprising of various tacit messages, values and general discussions about career and practical life. The family's explicit role surfaces when parents or siblings directly influence the choice process by giving suggestions, ideas, information etc. These choice influencers "act as an important intervening filter on the perceptions of the environment that an individual chooser may have" (Foskett and Hemsley-Brown, 2001: 216).

3. Choosers

The chooser, either the parents or the child himself, while considering the type and level of choice, will engage in various psychological processes under the influence of different people. The choice made by the chooser will continuously be subject to psychological processes, like pathway perception, lifestyle ambitioning, estimating net personal gains, protecting self-image, justifying selection, and choice announcement. However, it is not implied that these will always be rational, sequential or positive. In many cases, “choices are the second best options, or are simply a default residual after other options have been rejected or have simply not been acted upon” (Ibid.: 217).

4. Choice

The ultimate outcome from the combination of the context, choice influencers and chooser will be the choice. Choices are distilled through observations and experiences, family background, culture, life history, and highly personal and individual feelings and emotions (Hemsley-Brown, 1999). Since choice interacts with other components of the model, it changes with any change in any of the elements. As the chooser becomes exposed to new information or change in the context, he might revisit any stages numerous times and thus influence the ultimate choice. The choice is also conditional on the acquisition of necessary achievements by the individual. Furthermore, it should also have “sufficient stability to survive the reconsideration” (Foskett and Hemsley-Brown, 2001: 217).

Foskett and Hemsley-Brown (2001) believe that choices do not operate from the standpoint of technical rationality, because students do not explicitly weigh all the available information and facts and decide afterwards at one vivid, definite option. They

concur Hodkinson et al.'s (1996) findings that choices are based on partial evidence, perception and circumstance rather than any rational, comprehensive and objective search for, and weighing of, evidence (Foskett et al. 2004).

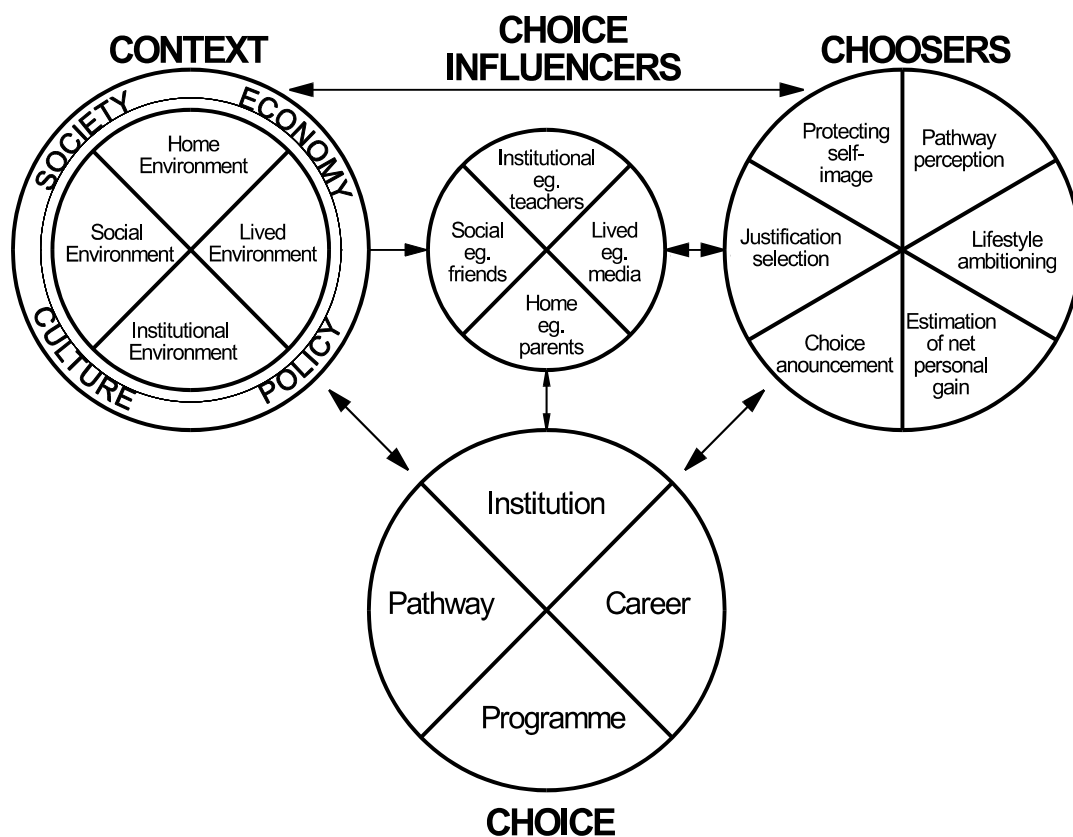


Figure 2.2: The Four C's Model of Choice and Decision-Making in Education and Training

Foskett and Hemsley-Brown (2001: 215)

The idea that all the elements and processes presented in the model occur simultaneously restricts the depth at which educational and occupational choices can be understood. Foskett and Hemsley-Brown (2001) believe that choices are dynamic in nature, are not instantaneous and do not take place in a short time span. Operating from this position, it would mean that a student, from the beginning of the choice process till

the very end, will continuously be subjected to all of the processes detailed in the model. This idea is dubious. For example, a student who belongs to an uneducated family and migrates to a city for secondary or higher secondary education, might be influenced by sources other than his parents, who have little knowledge and understanding of higher education.

The main issue with the model is its weakness in elucidating the course and itinerary of actions that people take in order to make their choices and to reach a particular decision. As Hemsley-Brown (2001: 218) believe:

[T]he choice process may be perceived, therefore, like a journey, where decisions and choices made along the way determine, not individually but through the product of their interaction, the final destination to be reached.

Nevertheless, the model does not account for any routes that people take in their 'journey' in order to reach their 'final destination'. No one can reach any destination, desired or undesired, without following a route, without treading a path and without achieving milestones. Thus the need arises to illuminate the process of educational and occupational choice by identifying the 'stages' of the decision-making process.

A notable contribution in elucidating stages in the choice process has been presented by Hemsley-Brown (1999). She identified two distinguishing stages, namely the 'preliminary search stage' and the 'refined search stage', in the process of college choice. The first stage is characterised by the influence of parents on choices, along with peer pressure. The non-utilitarian factors functioning in the first stage are divided

in two groups. “First, ‘preconceptions’ include social and cultural frames of reference, self-image and group identity. Secondly, ‘psychological defence mechanisms’ include distortion and exaggeration, post-hoc justification, self-deception and self-appeasement” (ibid.: 87). Foskett and Hemsley-Brown (2001: 121) argue that during the early teens, students’ psychology revolves mainly around gaining acceptance within the social peer group and the protection of self-image. Students try to choose those institutions and programmes which they believe are appropriate for people belonging to their circle or peer group. Matching choices with one’s fellow students protects group identity and strengthens self-esteem.

The refined search stage starts when students actively collect information through visiting colleges, attending careers sessions and reading promotional materials such as prospectuses. Those students who consider multiple options attempt to maximise the utility during this stage by carefully assessing and incorporating information about colleges in their choices. This does not imply that students make decisions that are in accordance with technical rationality. Rather choices appear more in line with ‘pragmatic rationality’ since “psychological defence mechanisms and social and cultural influences interfered with the maximisation of utility” (Hemsley-Brown, 1999: 92). Moreover, it is not mandatory that all choosers enter and experience this stage. This stage is not associated with those who decide beforehand to leave education or enter the labour market without training or with those who make choices “without actively investigating any alternatives” (ibid.: 92).

Before entering in the ‘preliminary search stage’, students around their 10th year are already found to have developed ‘preconceptions’ about their further educational

options. These preconceptions serve “as a filter mechanism when assimilating information later in the process” (ibid.: 87), and are strong enough to rule out certain options and encourage focus on others even before students begin a search for information or “before they entered a formal process of decision making” (ibid.: 95). Moreover, those students who make up their mind to follow academic routes possess, on the whole, more information about their course of action before entering the first search stage and are indisposed to search for information about vocational options. Such dispositions indicate that the choice process starts much earlier than in Year 10. The current research accordingly included studying early childhood orientations in order to investigate the educational and occupational choice process of agriculture students.

2.3.3 A New Model of Decision-Making by White

White (2007) developed a model of educational decision-making related to post-compulsory education choices. He conceptualised three types of decisions young people make when faced with educational transitions: inclusive choices, exclusive choices and default choices. Inclusive choices reflect those patterns of decision-making where students purposefully choose a particular course of action among alternatives for attaining desirable consequences (ibid.: 84).

On the contrary, exclusive choices are those which start the other way round i.e. students begin with cancelling or avoiding particular options because of unwanted consequences. All the alternatives are structured as to which options are simply undesired and which can be the most appropriate, out of the remaining ones (ibid.: 86). These forms of choices have been identified in other studies of educational choice (Cleaves, 2005; Bangley et al. 2001) and school choice (Gorard, 1997; Smedley, 1995).

Default choices represent the least amount of engagement in the decision-making process of students. These types of choices are, in fact, not choices according to the conventional definition of choice. Furlong (1992) and Heath's (2002) 'embedded choices' hold similarity with default choices. Furlong's (1992) study showed that for a great majority of the students, it was almost obvious that they will finish school and take up university education. These ideas might be deeply rooted in family traditions or cultural norms. The courses of action are closely related to "the deeply-embedded impressions... developed as a result of experiences in the family and school" (ibid.: 108).

Identifying the various stages of the education decision-making process is another important contribution by White (2007a). While making educational choices, White (2007a: 94) observed that "it was evident that students made more than one decision at each transaction" regarding subjects, qualifications and institutions. He explained that students in years 9 and 11 experience three main stages of decision-making (it is important to remind the reader that the choice stages should not be confused with levels of education):

1. The primary stage
2. The secondary stage
3. The tertiary stage

Although the importance of these 'stages' is relative, the 'primary' stage is the first stage of the choice process and was experienced by all students (of years 9 and 11). Most students act on their 'first' priorities during this stage, and it can be about their

subject choice, institutional choice and vocational choice or simply about avoiding some teachers. According to White (2007: 95), rationales and motives should not be confused with ‘types’ and ‘stage’. Rationales and motives can set the agenda for action. They however do not represent the primary stage.

Since students make choices about a number of issues before reaching a final decision, the ‘secondary’ stage represents student choice about a subsequent matter of concern, e.g. a student who decided to do A-Levels in the primary stage will move towards deciding which subjects to study in the ‘secondary’ stage. Since year 9 inherently presents limited choices, the choice process for students is mostly completed at the secondary stage whereas students studying in year 11 have to decide on multiple issues (qualification, subjects, institutions, etc). They then proceed towards the ‘tertiary’ stage, which involves a third choice to be made in order to arrive at a final decision.

The types of choosers and the stages of the choice process are then merged together to develop models of decision-making for years 9 and 11. Since the year 11 model is an extension of the year 9 model and because the focus of the current research is higher education (post-16 choices), the year 11 model will be discussed. The year 11 model (Figure 2.3) includes all three types of choices along with the three stages of the choice process. At year 11, students tend to make more ‘inclusive’ choices rather than exclusive ones (unlike in year 9), most probably because of “the vast array of available alternatives” (ibid.: 100).

Choice Stage:	Type of Choice:		
	<i>Inclusive</i>	<i>Exclusive</i>	<i>Default</i>
<i>Primary</i>	A	D	G
<i>Secondary</i>	B	E	H
<i>Tertiary</i>	C	F	I
	↓	↓	↓

Figure 2.3: Year 11 Choice Model
White (2007b: 50)

White (2007) further explored the year 11 model and its stages with reference to the choice factors (subject, qualification, institution) expressed by the students. Although not all students follow a uniform and identical sequence of choices, a common pattern emerged from the data: year 11 students most often and primarily choose their subjects, followed by choices about qualification in the secondary stage, and choices about the institution of study at the tertiary stage. Moreover, “subject choices were most frequently supported by ‘vocational’ rationales [and] qualification choices by either ‘vocational’ or ‘higher education’ rationales” (p.151).

Instead of ‘default’ choices, a significant count of ‘inclusive’ and ‘exclusive’ choices showed that the majority of the students were actively involved in their education choice process. The ‘multi-stage’ nature of the choice process is a valuable development in understanding how students make their educational and occupational choices. The stages capture the idea of “transition and progress” (ibid.: 32) and a similar analytical approach has been adopted in the current study.

Notwithstanding this, the stages tend to represent “the ordinal nature of decision-making process” (White, 2007b: 46). The arrows in the model (see Figure 2.3) suggest that educational and occupational decision-making is a one-way process whereas choices are not always linear. There can be ‘turning points’ or shifts in the choices which the model does not capture. Thus, a more comprehensive explanation of how students choose their educational and occupational destinations would be the one which includes the reality of ‘shifts’ in choices along with the conception that decisions are arrived at after going through a number of stages.

Another fine insight presented by the model (unlike the preceding models) is that young people concentrate on some particular issues at any stage of the educational and occupational decision making process. While the other models highlighted the notion that multiple issues occur simultaneously, all the time, in the decision making process, White’s model proposes that different students concentrate on any one (or at least a lower number) of factors at particular stages. Even though contextual factors do have a persistent impact on choices and other factors also have a latent effect on the choice process most of the time, White's multi-stage approach as compared to a multi-layered approach is more apposite in understanding the educational and occupational choice process in detail.

2.3.4 The Issue of Timing

It is crucial to know the time dimensions of the choice process in order to effectively facilitate it or intervene in it. The time when young people start thinking about their higher education, time consumed in their choice process, and the time of finalizing their choices, all hold importance in understanding the choice process. Moreover, time issues

also have implications on data collection and analysis. If young people decide on higher education well before they finish compulsory education, then either the data needs to “be collected in previous years, or accounts of previous choices need to be sought” (White, 2007a: 13).

According to Super (1990: 197), the choice process can be better understood if one considers “the past, from which one has come; the present, in which one currently functions; and the future, toward which one is moving. All three are of indisputable importance, for the past shapes the present and the present is the basis for the future”. The life span vocational choice theory developed by Super has six life and career development stages, starting from the early teens and leading up to the late fifties.

However, empirical evidence on the timing of young people’s decision making is “limited and somewhat mixed” (Payne, 2003: 15). In the contemporary education system, young people are not faced with circumstances requiring a choice until at least year 9. This does not imply that students start thinking about their options at this level. Many students, at an early stage of their educational life, tend to discard at least a few options (Payne, 2003; Ryrie, 1981; Varlaam and Shaw, 1984). According to Foskett and Hemsley-Brown (2001), students start contributing insights (in partnership with their parents) into the choice process at age 11, and by the time they are 16 or 18, they dominate their own educational choices. The two stage choice process presented by Hemsley-Brown (1999) also showed that students had significant and influential preconceptions about their higher education, well before they stepped into the first stage of the choice process (even if they did not firmly decide on their post-16 educational choice).

If considerations about post-16 paths start early, then there is also the possibility that students might also contemplate their occupational future early in their lives because higher education and occupations are closely linked. Payne is of the view that “occupational preferences also start to develop during the early secondary school years” (2003: 16). Although occupational preferences and aspirations may develop from the early years of a student’s life, it should not be implied that the student will also have firm and clear ideas about any particular jobs. Ryrie (1981) confirmed that occupational and actual job choices of students in their compulsory education were very volatile. Taylor (1992: 328, *italics in original*), in his survey of year 11 students found that:

For the majority of young people, firm decisions about careers and jobs were often a matter for the future, although it was clearly a topic of considerable interest at this stage. In terms of long-term employment and goals, only just over half of young people interviewed displayed good to fair knowledge of the entry requirements/qualifications for their chosen job or career....

The timing of the educational and occupational choice process is clearly “a difficult topic to research” (White, 2007a: 15). Sometimes, students themselves are unable to identify the right time they started thinking about their higher education or the time they developed their occupational aspirations. The results of Foskett and Hesketh’s (1997) studies confirm this issue. Students gave contradictory responses when asked multiple questions about when they started thinking about their post-16 destinations. In response to one question, 40% of the students expressed that they always had an idea about their post-16 intentions. Responding to another question about their plans after year 11, only 19% of the students answered that they had ‘always known’ what they would do. Only

5% reported that they started thinking about their choices before year 9. This proves that relying completely on students and asking them directly (that too through questionnaires) is not the best option to explore the timing of the decision-making process.

Gorard (1997) believes that the timescale of educational decisions has probably been underestimated. Thus, qualitative narratives of students, detailing their stories of educational and occupational choices, will bear more fruitful results in exploring when students start their choice process, and how long it possibly takes to complete the process.

2.4 Factors Influencing Educational and Occupational Choices

Choices cannot be understood without giving ample attention to the various factors that bear potential influence on choice. “Education decisions result from a complex relationship between different factors” (Davies, 2003: 15). Various factors not only shape choices but also have the potential to limit individual choices. Vroom (1964) was of the opinion that those people who aim towards a career which they find extremely difficult to enter might have experienced a “faulty decision-making process” or had been subject to innumerable influential factors. Anderson (1998: 145) also affirms that:

In couching the issue of occupational behaviour within a choice framework, there is an inherent assumption that all people have to do is choose a particular job or career from a whole array of different options. To operate from this assumption simplifies the issue and implies some kind of deficiency on the part of those who appear to restrict their selection to

specific fields... educational and occupational choice is a complex process that is significantly influenced by environmental variables.

The social class, gender, ethnicity and locality of young individuals are some of the strongest factors affecting career choices (White, 2007; Banks et al. 1992), along with parents, career education and guidance, teachers, school, friends, and labour market effects (Payne, 2003). The issues in operationalising the socio-economic status of respondents and presenting the classed nature of choices, especially in Pakistan, pose significant issues, which has already been discussed (see Section 2.2.4). Furthermore, since career education and guidance is almost invisible in Pakistan, its significance also diminishes in terms of influencing students' choices (all students nevertheless were asked during the interviews if they ever received career guidance in any form during their academic life). These elements and their influence, therefore, have not been discussed.

Furthermore, research on educational and occupational choices has not received much attention in Pakistan. There are only a handful of studies exploring occupational choices in Pakistan (e.g. Aslam et al. 2011; Khan, 2007; Nasir, 2005; Avan et al. 2003; Susan et al. 1994), whereas there are none investigating agriculture students. The literature on educational and occupational choices of agriculture students mainly stems from America. Findings of these studies are incorporated in the review below along with empirical evidence from around the globe.

Various factors influence choices in combination with each other, in varying degrees, at different phases of an individual's life. However, for ease of understanding, these factors are discussed separately below.

2.4.1 Role of Parents

Research on education and career choice has shown, time and again, that parents play an evident role in the choices of young people and their influence transpires in several ways (Payne, 2003). The home environment and family members create a context within which choices are made and family members act as direct 'choice influencers' (Foskett and Hemsley-Brown, 2001). Often advice, suggestion or information coming from parents stimulates the choice process and thus parents act as 'catalysts' which initiate the choice process (Foskett and Hesketh, 1997). Parents are among the most frequent and important source of help and advice (Furlong, 1993) and families are "the key, and often the single most important source of guidance, information and influence" (Taylor, 1992: 319).

Young people develop positive attitudes towards education as a result of their parents' interest and involvement (Furlong, 1993). Carter (1962) elaborates the way in which the process of occupational choice unfolds in the case of some working class children: visits to the father's place of work, conversation at home about wages and hours, the relief that the working day is over, all convey to the children the way in which their parents, siblings and relatives - often the people they admire and rely upon most - regard the world of work. From this, children accumulate a general impression of good and bad jobs, and the work which is appropriate for them. Rosen (1955) found that the majority of young people regard their parents' opinions.

Family also influences career decisions by providing role models (Griggs and Fisher, 1992). Parents can implicitly or explicitly exhibit their influence by being an example, through their pragmatism, and by providing support and encouragement (Swift, 2009). Jones et al. (2004) explained that parents support their children in multiple ways in their education and career. It could be financial support, or allowing them to live with them so that they can save for themselves and such support is a “key element in successful transitions” (ibid.: 222). However, Jones et al. note that in some cases this support might be conditional to fulfilling parental expectations and demands regarding education and career pathways. Such parental pressure can have severe implications, similar to the *laissez-faire* approach incapacitating young people’s potential to develop skills, confidence and maturity to make their own decisions in life (ibid.: 213).

Although parents have a share in the educational decisions at the higher level, it is unlikely that parents will dictate educational and career choices to their children (Payne, 2003; Foskett and Heskeht, 1997). The cultures of the family (James, 2000) and preconceptions originating from the family inevitably limit the range of choices available to and considered by the students (Hemlsey-Brown, 1999; Hodkinson et al. 1996). Expectations of the parents can define the educational tracks of young people (Hodkinson and Sparkes, 1997). Parents try to establish “frames of reference” within which they expect their children to operate in terms of educational choice; however, regardless of the tightness of these frames, they “could be resisted or ignored” (Ball et al. 2000: 144). Parents simply exclude some opportunities as an option, and mark the limits within which children’s choices have to take place (Foskett and Hesketh, 1997).

Moreover, parental involvement or encouragement sometimes appears as parental pressure (Blenkinsop et al. 2006; Jones et al. 2004). It is important to consider that students might under report parental role, pressure and involvement because conceding to parental intervention is perceived by them as reflecting a lack of autonomy over their life and their choices (Foskett and Heskeht, 1997).

Families play a significant role during transit into higher education (Gorard et al. 1998). Empirical evidence proves influence of family members in the choices of agriculture students (Esters and Bowen, 2005; Rocca and Washburn, 2005; Peiter and Morgan, 2004; Cole and Thompson, 1999; Houser and Yoder, 1992). Parents' "influence on youth is enormous, and they are frequently more willing to support students' participation in agriculture than many believe" (Thompson and Russel, 1993: 61). Parents with an agriculture background mostly encourage their children to study agriculture (Donnermeyer and Kreps, 1994; Schuster and Costantino, 1986). Due to the pervasive influence of parents, researchers believe that parents are powerful allies in educational and occupational choices, and thus should also be targeted in order to increase enrolment in agriculture (Rocca and Washburn, 2005; Thompson and Russel, 1993).

2.4.2 Role of Gender

Students' educational and vocational choices have been strongly 'gendered' and correspond with the conventional patterns of the society at large (Banks et al. 1992). Although there has been a considerable (and encouraging) change in female participation in various professions, it cannot be implied that the influence of gender on educational and occupational choices has diminished because students continue to abide by the gendered patterns of educational and occupational behaviour (Hodkinson, 2008;

White, 2007). Recent evidence from research in the United States suggests that the likelihood of pursuing education and a career in agriculture is higher among females when compared to males (Barkley and Parrish, 2005; Peiter and Morgan 2004). However, there remain visible differences among the occupational choices of both genders (Payne, 2003). Females receive direct or indirect messages from their families regarding preferred occupations based on gender criteria (Fouad et al. 2008). Even career guidance and encouragement by teachers to students differs according to gender (Swift, 2009).

Nasir (2005: 76) highlighted the influence of gender on career decisions in Pakistan: “some occupations are labelled as men’s and some are labelled as women’s occupations and stereotype employers just follow the tradition rather than using job requirements. This attitude of the employers restricts the entry of males in so called female’s occupations and entry of females in males dominated occupations”. He concluded that only education can play a role in overcoming gender biases. However, its impact might not be substantial, because of the deeply ‘inherited and maintained’ socio-cultural traditions of society (ibid.: 77).

With regard to agriculture sciences, the problem intensifies due to the gender label on this profession (Mangheni et al. 2010). The impact of gender on educational and occupational choice transpires in a negative manner (Brimrose et al. 2005) and can persist over a long time period (Furlong and Biggart, 1999). The profession is considered more suitable for males due to the perceived requirement of physical strength needed to perform practical and experimental tasks of the subject (Forsythe et al. 2010; Odejide et al. 2006; Krueger and Rieseuberg, 1991).

Barcley and Parrish (2005) found that major selection in agriculture sciences is not influenced by gender whereas there are others who found the contrary (Mangheni et al. 2010; Barkley and Parrish, 2005; Peiter and Morgan 2004). Females appear concentrated in a few majors which correspond with their gender identity (Bell and Fritz, 1992). For example, Baker et al. (2011: 35) found among agriculture students that both genders perceived 'ornamental horticulture' more suitable for females, while males simply avoided it because it involves 'flowers' and appears "kind of girly, in a really girly, girly sense". This indicates that even if more numbers of girls are joining agriculture college, their major selection and occupational choice still follow the conventional stereotypes of masculinity and femininity.

2.4.3 Role of Locality

Foskett and Hemsley-Brown (2001) identified that geographical position of a chooser contributes to the context of the educational decision-making process. Students' lived experiences within their families and communities reflect on their educational and occupational choices (Lumby et al. 2003). White (2007a) also highlighted locality among the most salient influencers on choices. Evidence from Pakistan also suggests that students' choices vary from region to region (Aslam, et al. 2011)

The impact on educational aspirations is one of the ways in which locality exerts influence on educational choices. Research reveals that urban youth have higher educational and career aspirations when compared to rural youth (Schonert-Reichl et al. 1993; McCracken et al. 1991). Rural youth "aspire to lower levels of higher education, express lower levels of self-confidence in completing the degree requirements, and expect to pursue higher education for a shorter time than urban students" (Breen and

Quaglia, 1991: 223). Limited exposure in the rural areas, poverty, the absence of role models, the lack of diversity in career opportunities, and limitations experienced by the geographical and cultural context also hinder higher educational and career aspirations (Haller and Virkler, 1993).

In the case of educational and occupational choices in agriculture sciences, the influence of locality also has encouraging dimensions. Bajema et al. (2002: 69) found that “the percentage of farm students aspiring to study agriculture was over twice that of town students”. Ramdawat and Ganpat (2010) also found similar trends and this has been attributed to rural youth prior knowledge and experience in agriculture (Asadi et al. 2011). Frick et al. (1995) also found that rural high school students had a considerably higher level of knowledge about agriculture related concepts than their urban counterparts. This was mainly because people raised in rural communities inherently have more interaction with farmers and people related with the agriculture sector as compared to their urban fellow students.

Furthermore, social interactions within the rural community also influence career choices (Adedokun and Balschweid, 2008). Rural youth have strong emotional ties with their family and community due to which they choose a career in agriculture or inherit a farm business in order to remain close to family and community (Hektner, 1995). Adedokun and Balschweid (2008) reported that rural students who are content within their rural communities are more inclined to choose careers in agriculture, whereas those who are frustrated with the socio-economic condition of their communities will find non-agriculture careers in order to escape from their communities. Thus,

community factors and local context are potential influencers on the career choices of rural youth.

However, while these close ties with family, friends, community and nature encourage a career choice in agriculture among rural youth, educational and occupational opportunities in bigger and better cities at the same time tempt this youth to break the bond with their communities (Johnson et al. 2005). With respect to choice regarding studying and developing a career in agriculture, the profound connection of locality has to be included while understanding student choices.

2.4.4 Role of Schools and Teachers

School education and school teachers are among the early stakeholders of educational and occupational choices. Education serves as the key to entry into the labour market; the relationship between education and employment is considered vital (Crichton, 1968). Young people mostly look forward to obtaining qualifications which will enable them to enter higher education or get a job (Payne, 2003: 2). Cullingford (2004: 348) notes that students “from an early age, assume that they are at school in order to be prepared for jobs...Schooling is a temporary rite of passage towards the goal of employment”.

The dynamics of the educational choice process starts with the early schooling of children. From that point onwards, schooling plays a crucial role in limiting students’ choices of the most preferable professions, with the passage of time. For example, students who do not take the toughest courses or study in the best schools face difficulties in taking science subjects or a ‘high-level match’ in the later years of their

academic life. The effects of schooling can extend to entry into higher educational institutes and even to the completion of studies. The chances are almost identical to school or college dropouts returning to education and becoming physicians (Rosenbaum, 1976 in Brown and Brooks, 1996).

Similar evidence is available from Pakistan where Nasir (2005: 71) found that people who study at established, private English medium schools are rewarded, “as the odds of having high paying jobs are high for those who graduated from private schools or studied from English medium schools”. Similarly, rural schools and their lower educational standards, when compared to urban schools, appear to increase the vulnerability of rural youth in the long-term economic scenario (Bajema et al. 2002). Aslam et al. (2011) propose that in order to begin to understand the career choices of students, it is mandatory to look into how the educational system influences career choices.

The curriculum of schools also has a direct influence on the educational and occupational choices of students. Ramdwar and Ganpat (2010) found that there was a moderate indication of pursuing a career in agriculture among those who studied agriculture at the school level, whereas those who were not exposed to agriculture related curricular, regardless of their realisation of the importance of agriculture, were not willing to pursue a career in agriculture. Learning experiences in agriculture sciences at the school and high school level have yielded fruitful results in the career choices of students (Dyer et al. 2000). Besides the type of schooling that individuals receive and the formal curricula, the culture, values, attitudes and behaviours within the school also influence students and their choices (Payne, 2003; Foskett et al. 2008).

School teachers and peers all contribute to the context within which educational decisions take place (Foskett and Hemsley-Brown, 2001).

School teachers (other than career counselling staff) influence students' educational and career choices, sometimes intentionally or unintentionally (Ryrie, 1981: 3-4), and sometimes in an informal and implicit rather than formal and explicit way (Foskett and Hemsley-Brown, 2001). Teacher personality also has the power to influence students (Foskett and Hemsley-Brown, 2008) and some students simply choose a subject because they like the teacher who is teaching it (Blenkinsop et al. 2006: 48) or avoid choosing a subject just because they do not like the teacher (White, 2007).

Another important dimension of teachers' roles in the educational and career choices is that they provide, and are considered a good source of, information about higher education, even though "the accuracy and reliability of that knowledge is questionable" (Foskett and Hemsley-Brown, 2001: 206). Teachers can play a significant role during early schooling by disseminating knowledge and information about agriculture and its value (Frick et al. 1995). Although choices about higher education and careers are matured later in an individual's life, the founding role of the school and teachers cannot be separated from the choice process, and therefore needs to be explored.

2.4.5 Role of Friends

Young people spend a considerable time with their peers during their school and play time and thus it is most likely that they will discuss among them their future plans or ideas regarding higher education and career, and eventually influence each other positively or negatively (Swift, 2009). Neiman (1954) in his study found that the

correspondence of ideas of right and wrong between children and their friends is second only to that between children and their parents. Friends can develop attitudes towards education and eventually influence educational decisions (Foskett and Hemsley-Brown, 2001). They can serve as a useful source of relevant and reliable information about educational opportunities (Payne, 2003; Taylor, 1992). At the same time, there are studies which report that friends are not taken as an important source of information (Hesketh and Foskett, 1997) and that when it comes to higher education choice, students rarely discuss choices with their peer group (Brooks, 2003) and their influence is not central in their choices (Blenkinsop et al. 2006).

However, the influence of friends in the educational and occupational choices of agriculture students has been found significant (Peiter and Morgan, 2004; Wildman and Torris, 2001) and in some instances, their influence has outpaced that of close family members (Esters and Bowen, 2005). Baker et al. (2011) found that negative impressions and the lack of awareness about careers in agriculture, among students and their peers, hindered students' occupational choices into agriculture.

2.4.6 Labour Market Influence

If the trends in the local labour market determined occupational choices, then a greater number of students at higher education would be studying agriculture in Pakistan, given that the largest sector engaging labour force is agriculture (see Chapter 1). However, this is not the case, because as Payne (2003: 5) suggests, “the relationship between young people’s choices and the local labour market is complex”. The responses and perceptions about the labour market can be variable due to the diversified socio-economic background of an individual’s family and community. She concluded that

“young people’s choices at 16 are shaped partly by the opportunities that they see in the local labour market; including both the industrial structure and the level of demand for labour” (p.49). Foskett and Hemsley-Brown (2001) stress that the economic conditions of the labour market cannot be separated from students’ choices as they constantly overshadow the choice process.

The conceptions of the labour market among young people are developed through interaction with the family, peer group and neighbourhood (Biggart and Furlong, 1996: 254), and thus might not be a realistic picture of what is out there. Many believe that “it was not what you knew but who you knew that mattered, and that getting a job was largely a matter of luck” (Furlong, 1993: 93). Regardless of how such perceptions develop, ideas about the local labour market tend to influence individual choices a great deal. Research suggests that students who belong to rural areas consider their local employment opportunities (as per their perception) while making their occupational decisions (Johnson et al. 2005).

As the evidence in section 1.4 suggests, students show more interest in jobs that are widely perceived rewarding, e.g. working with technology or computers, teaching professions, or engineering, etc. Since none of these seem to have much relationship with agriculture, students do not aspire to a career in agriculture. Moreover, it is also unlikely for students to enrol in agriculture programmes in order to discover whether agriculture covers their interests or to explore what opportunities are available within the agriculture profession (Conroy, 1997). Within the agriculture sector also, young people tend to aspire to high income jobs (Adedokun and Balschweid, 2008) and choose their majors according to their job considerations (Wildman and Torris, 2001). The

nature of work, job availability, job locality and monetary rewards all combine together to influence which major is chosen within agriculture education (Rawls et al. 1994).

2.4.7 Role of Prestige

Many choices are not motivated by 'need' as much as they are by the concern for social standing and prestige (Baker, 1992: 167). Students exclude some options simply because these "jobs come to be seen as lacking in prestige and falling below a level which they find acceptable" (Furlong and Cartmel, 1995: 361-362). Especially in Asian communities, educational and occupational choices are influenced by the perceived probability of attaining social esteem and social position, and parents associate a great degree of pride with the educational achievements and professional identity of their children (Lightbody et al. 1997).

Foskett and Hemsley-Brown (2006) found a profound impact of public images on the decisions to choose certain professions. To what extent these ideas of 'respectable' professions are objective is dubious. Siann et al. (1990 in Lightbody et al. 1997) found people's overwhelming preference for medical professions associated with the desire to be respectable in society was accompanied by lack of familiarity about other options. Susan et al. (1994) also found similar tendencies of 'novelty' of professions in Pakistan and found that public conceptions regarding the image and status of professions were very important in career choices.

There is ample evidence from around the globe on the issue of the disparity of esteem between academic and vocational paths, where the former is seen as more relevant to able and enthusiastic young people and the latter is associated with low achievers who

cannot make their way through competitive higher education (Swift, 2009). Recent evidence suggests that parents have “doubts about the value of subjects” which are perceived as ‘new’. This however applies to only a few ‘new’ subjects rather than all, suggesting that the prime concern is usually the perceived occupational significance (White, 2007a: 150). However, since the current research focuses on a purely academic route leading to a professional career, the concern is whether, within various academic routes, there is a status divide.

Students do not aspire to an agriculture education or profession because “agricultural science has an image problem” (Levine, 2009: 1140). The respondents in Dobbins et al.’s (2002) study explicitly stated that they have been encouraged by people around them for joining professions other than agriculture and never came across any advice to study agriculture. This is mainly because society places higher degrees of prestige on a few professions (Opara et al. 2006; Johnson, 1996). Lack of prestige and preference for agriculture is attributed to the association of agriculture sciences with the farming profession which is seen as tough and tedious (Forsythe et al. 2010). People do not regard agriculture graduates as professionals (Onuekwusi and Ijeoma, 2008).

Frick et al. (1995) suggests that research should investigate the extent to which negative beliefs about agriculture education are due to the perceived image of agriculture sciences and the extent to which agriculture education is considered ‘contemporary’. Even while choosing majors within agriculture, students continue to seek prestige in their future career (Rawls et al. 1994). Furthermore, “the dynamics and implications of favourable beliefs and intentions toward agriculture” are worth exploring in order to develop a deeper understanding of the choice process (Thompson and Earl, 1993: 62).

2.4.8 Role of Information

According to Super (1990), the early years of an individual's life and the information that he or she comes across or acquires in this period perform a vital role in future career development. Information pushes children's curiosity, which in turn develops their interests, triggers them to unearth role models, and leads them to a sense of personal control which is coherent with their stage in life. These are then merged with the acceptance and productive use of external and situational determinants.

Foskett and Hemsley-Brown (2001) suggest that information about the prospects of higher education, subject choices, institutional choices and career choices can come from family, friends, relatives, neighbourhoods, schools, teachers, media or any other potential source. The credibility of information and its potential to influence varies.

Notwithstanding this, Ball and Vincent (1998) give a valuable typology featuring 'hot' and 'cold' sources of knowledge. Hot knowledge refers to information obtained from the 'grapevine' (e.g. family, friends and personal social networks within institutions) and cold knowledge refers to the formal knowledge and information gained from official sources or institutional marketing activities (e.g. prospectus, newspaper ads and websites). Students as well as their parents tend to rely more on information coming from 'hot' sources and consider them as credible insider opinion. Information coming from existing students is perceived as valuable, honest and trustworthy. On the other hand, 'cold' knowledge coming from official marketing of the institutions, prospectuses, brochures, websites, newspaper ads, etc. is not as influential. Empirical evidence also shows that students rely less on career guidance and more on family for

educational and career advice (White, 2007a; Payne, 2003) and that 'hot' knowledge is preferred over 'cold' knowledge (Jean et al. 2010; Hodkinson, 2008).

Despite the sources and types of information, the value of information in educational and occupational choices is indisputable. It is difficult to examine 'how' students make choices when they are unaware of the available options or their position to make choices (Chattoe-Brown, 2009). Awareness of prospects of particular careers directly impacts on the educational plans and career goals of young people (Conroy, 1997). Research on educational and occupational choices of agriculture students reveals that students who have experience in agriculture, have been living or working on the farm, and have exposure to information about the agriculture sector, are more likely to choose to study agriculture (Wildman and Torris, 2001), whereas urban students, despite realising the scientific nature of the agriculture discipline, are unaware of the importance of the agriculture industry and the career opportunities in agriculture (Betts and Newcomb, 1986).

Many students continue to make their career decisions in agriculture without actively engaging in career exploration and without ample knowledge about careers in agriculture (Esters, 2007). The great majority of students remain less familiar with preparation for a career in agriculture: this poses problems in the choice process of agriculture students (Gilmore et al. 2006; Scott and Laverne, 2004) and many freshmen in agriculture colleges enter without adequate information about career opportunities in agriculture (Esters, 2008). It is assumed that students should be made more aware about job opportunities within the agriculture sector and that they should be

mentored through interaction with notable people and leaders in the agriculture profession (Jones and Larke, 2003).

Summary

The literature review has raised a number of key issues pertinent to the current research. The debate about the role of structure and agency, supremacy of either one of them over the other or the combination of them both, does not expand or strengthen the conceptualization of choice. A need arises to use these conceptual tools to understand how different choices are made in similar circumstances or how same choice is made by different agents operating in different circumstances. Developmental and opportunity structure theories were found inadequate due to their strong alliance with agency and structure respectively.

Economic models, such as the rational choice theory, present a different yet agent based explanation of how choices are made. Despite its appeal to explain the educational and occupational choices of agriculture students in Pakistan, the approach was found insufficient in light of literature and empirical evidence. Moreover, breaking from the dichotomy of micro or macro perspective, the theory of cultural reproduction attempted to invoke the combination of both in order to explain how choices are made. However, presenting a classed nature of choices in terms of habitus and cultural capital “hindered rather than helped progress in the area” (White, 2007a: 33). Moreover, in the case of Pakistan, attempting to explain choices objectively in terms of social classes and their cultures was found to be far too unrealistic for the reasons discussed in the chapter.

Various contemporary ‘hybrid models’ of educational and occupational choices and decision-making were also reviewed. Even though the ‘Careership’ model and the ‘Four C’s Model’ have relied heavily on the theoretical assumptions of Bourdieu (which has been criticised for its explanatory power), they both offer some useful insights into understanding educational and occupational choices. The concept of ‘turning points’ by Hodgkinson (1996) and the detailed combination of context, choice influencers, choosers and choice by Fosketh and Hemsley-Brown (2001) present potential ideas to understand choices. However, the problem arises as these models claim to explain the ‘processes’ of decision-making; yet they do not project ‘transition’ and ‘progress’. This gap will be addressed through an in-depth qualitative investigation carried out in this research.

Further vindications presented by Hemsely-Brown (1999) and White (2007) have astutely presented a ‘multi-stage’ rather than ‘multi-layered’ approach of understanding the process of educational and occupational choices (similar to Martin, 1995 and Gorard, 1997 in explaining ‘school choice’). A similar approach has been adopted in the current research, with an attempt to incorporate the notable notions presented by earlier models. The need arises to detail the series of steps taken or stages of the choice process. “The idea of stages is simple enough but although widely used in social sciences, the foundations and formal properties of such systems seem to have received little consideration” (Chattoe-Brown, 2010: 1).

Lastly the influence of various factors on the educational and occupational choices of students cannot be ignored if a holistic understanding is to be developed to answer the questions of ‘how’ and ‘why’ students choose the way they do. Since there is a dearth of empirical evidence available on educational and occupational choices of students in

Pakistan, insights have been gathered from around the world in order to understand how factors influence students' choices and their relevance to the choices made by agriculture students in Pakistan. Furthermore, an obvious gap of qualitative inquiry has been found, since the mainstream methodological position adopted by the majority of these empirical researches has been quantitative.

Thus, the current research has adopted a qualitative approach to address the issues raised in the literature review and appositely address the research questions of this study. The details of the methods of investigation and analysis adopted in this study are discussed in the next chapter.

Chapter 3

RESEARCH METHODS

Introduction

This chapter sets out the methods and strategies adopted in the current research to attain the aims of the research. It starts by justifying the application of qualitative research methods for exploring the educational and occupational choice process of students in Pakistan, followed by details of the methods of data collection, access to study sites and sampling techniques. Challenges faced during the fieldwork and counter strategies are discussed thereafter. Furthermore, the methods of data management and analysis are also delineated in the chapter along with a discussion of the ethical issues pertinent to the current research.

3.1 Rationale for Employing Qualitative Research Methods

The decision to apply particular methods of inquiry is determined by the nature of the research problem, the issue under investigation and the type of evidence required to address that issue (Silverman, 2005: 6). A qualitative approach is ideal to study individuals' perception, interpretation and creation of the world they live in (Blaikie, 2000; Harding and Gantley, 1998). Since this study aimed to investigate students' choices based on their experiences, preferences, thoughts, feelings, values and judgments which ultimately shape their academic and vocational choices, qualitative methods were deemed more appropriate in order to understand the influence of such unobservable features (Wellington, 2000: 71).

Qualitative methods focus on the issues of “how and why” (Power, 2002: 87) and help to comprehend the way respondents understand their world within the natural setting of things (Secker et al. 1995; Oiler, 1993). They provide the opportunities to study the choice process and comprehension of the influences of various factors that bear upon those choices. Maxwell et al. (1996: 276) believe that “Qualitative research is necessary if we are to start to understand better the reasons for students’ choices”.

Accounts of student histories and life courses are rich in information holding the potential to identify the stages of students’ educational and occupational choice process. The in-depth interviews could reveal ‘how’ and ‘why’ various personal and social variables integrate together and influence individual choices. “There may be no better way to answer the question of how people got, from where they began, to where they are now in life than through their life stories” (Atkinson, 1998: 20). The process that led to the decisions needs to be studied using the accounts of the individuals concerned (White, 2007b). In addition to that, detailed information regarding the perceived barriers and challenges faced by students while making their choices could be generated only by ‘a set of in-depth interviews’ (Colombo, 2011: 31).

Various studies indicated that educational choices of young people are formulated at different times of their life (Foskett and Hemsley-Brown, 2001; Foskett and Hesketh, 1996; Hemsley-Brown, 1996). An examination of the stages of the choice process and the transition of choices throughout the course of one’s life could have been ideally achieved through a longitudinal study that followed respondents’ academic and vocational life. However, time and resource limitations constrained my capacity to conduct a longitudinal study. As discussed above, a plausible and promising alternative

was to conduct in-depth qualitative interviews that entailed interrogating the depth of choices. Furthermore, thematic analysis of interview data enabled the explanation of the educational and occupational choices of the students based on the themes emerging from the data itself.

The student choice of agriculture as a subject of study and profession was best sought through listening to the stories of students, right from their early academic and vocational aspirations to the changes of direction their choices took, and their final selection. Researchers investigating the educational and occupational choices of agriculture students have advocated applying qualitative research methods (Arnold and Place, 2010; Esters and Bowen, 2005; Scott, 2004; Sutphin and Stewart, 1995; Bell and Fritz, 1994). Moreover, research studies which have shed light on the occupational choices of students in Pakistan have pre-dominantly adopted the quantitative research approach using secondary data (Aslam et al. 2011; Khan, 2007; Nasir, 2005; Avan et al. 2003; Susan et al. 1994). Thus, a qualitative investigation proposed a new evidence base to develop a deeper understanding of the academic and vocational choices of agriculture students in Pakistan based on their insights and accounts.

3.2 The Sample

The respondents in this study were recruited through purposive sampling, which is also known as theoretical sampling. The intention was to choose participants who could be potential contributors on the basis of the aims of the study and emerging themes (Miles and Huberman, 1994; Strauss and Corbin, 1990; Guba and Lincoln, 1985; Hammersley, 1985; Glaser and Strauss, 1967). The aim was to “discover, understand and gain insights” and thus a sample was designed “from which the most can be learned”

(Merriam, 2009: 77). A purposive sample was designed comprising of various cohorts of students at different stages of their academic and professional life because the “issues of central importance to the purpose of the inquiry” (Patton, 2002: 230) were capturing the transitions in the choice process and role of various factors as choice facilitators and barriers at different stages.

One of the most common types of purposive sampling, which have also been utilized in the current research, is maximum variation (Merriam, 2009). The strength of maximum variation sampling strategy is that “any common patterns that emerge from great variation are of particular interest and value in capturing the core experiences and central, shared dimensions of a setting or phenomenon” (Patton, 2002: 234). An effort has been made to identify cases that offered rich, voluminous and relevant data, which would prove vital for answering the research questions (ibid: 46).

This approach ensures that the theory is comprehensive, complete, saturated, and accounts for negative cases and instances (Morse, 1999b; Miles and Huberman, 1994). As the research progressed, based on the analysis of the initial interviews, I searched for cases that allowed encompassing the spectrum of positions and perspectives in relation to the choice process and attempted to answer questions that would either authenticate or challenge the findings (Kuzel 1992; Guba and Lincoln, 1989; Guba and Lincoln, 1985; Glaser and Strauss, 1967).

3.2.1 Sample Cohorts and Rationale for Selection

Recruiting students at one point in time was not perceived as the best approach. To broaden the scope of investigation, a strategy that enabled interviewing people at

various points in their academic and professional life was adopted. As Esters (2008) recommended, the sample included agriculture students from upper level of degree education and expanded to graduates who were working in various professional fields after completing their education. This allowed a better understanding of how students differ and how their viewpoint and choice process progress over time. This also enabled overcoming the issue of ‘recency’ in qualitative research. Since students had to recall their past experiences, choices and influences on their preferences, each cohort could easily recall their recent experiences and were less likely to fill in the gaps in their memories (Hill et al. 1997).

In purposive sampling, it is deemed necessary to “first determine what selection criteria are essential in choosing the people or sites to be studied” and to explicitly state the criteria for selection and the rationale for the criteria (Merriam, 2009: 78). Thus, stated underneath are the cohorts of students included in the research and justification for their selection.

Cohort 1: F.Sc. Students

Students studying F.Sc. (Pre-Medical) from two colleges (one boys’ college and one girls’ college) in Islamabad were contacted for interviews. These F.Sc. students were a combination of those who were planning to join an agriculture university or had other options for higher education (e.g. medicine, science, pharmacy etc.). In Faisalabad, F.Sc. Pre-Agriculture students were interviewed. They were the only group in the region that chose to study agriculture at the intermediate level, therefore limiting their ultimate choices of higher education to the agriculture discipline or basic sciences (B.Sc).

The rationale for choosing F.Sc. Pre-Medical and Pre-Agriculture groups was the restrictions of the eligibility criteria of agriculture universities as they allow these students only to apply for a graduate degree in Agriculture Sciences (see section 1.3.5). The F.Sc. (second year) students planning to continue their education were about to make their decision regarding higher education in the approaching six months. These students were therefore more suited to explain how students approach their choices at that time, what they think about further education, and how they coordinate their academic and vocational choices.

Cohort 2: B.Sc. (Honours) Agriculture (Undergraduate First-Year Students)

The first year B.Sc. (Honours) Agriculture students were chosen as the second cohort as this group had recently decided to study agriculture. They could easily recall how and why they took their decision. Moreover, insights of their occupational choices and preferences at the time of entering university were also important in comprehending the educational and occupational choice process.

Cohort 3: B.Sc. (Honours) Agriculture (Undergraduate Final-Year Students)

The final year students were selected because they have completed much of their academic journey. They have gone through the stage of major selection. These students were in a position to detail how they came to decide on their major field of study in agriculture, and what they make of their career at the end of their graduation. They could also show, through their occupational choices and preferences, how occupational choices mature from entering university to the completion of the degree.

Cohort 4: Alumni of Agriculture Universities

This group included agriculture graduates who stepped into their professional life after completing their academic journey. They were in a position to discuss how, in reality, their occupational choices were shaped over time, how their aspirations developed and to what extent they could be realized. These agriculture graduates had either settled in their career or were struggling to do so. The professional experiences and occupational choices after graduating in agriculture could have been best narrated by this group.

Cohort 5: Basic Sciences Students

A cohort of students who did not study agriculture was also included in the study. These students had the option of studying agriculture but chose otherwise. The rationale for recruiting these students was that they were in a better position to explain why, despite being open to the choice of agriculture, they did not choose to study agriculture. These cases offered a point of comparison for the factors that influence choice for studying agriculture sciences. Their interviews allowed inclusion of ideas, problems and issues faced by those who do not choose agriculture and to what extent they contrasted or concurred with those faced by agriculture students.

3.2.2 Sample Size

In qualitative research, the size of the sample is mainly based on the nature of the social process being studied (Bertaux and Bertaux-Wiame, 1981). Since all cases were to be studied in depth, it was possible to recruit only a limited number of cases into each cohort (Patton, 2002; Kvale, 1996; Mason, 1996; Miles and Huberman, 1994). However, the number of respondents in each category was not pre-decided and data collection from each group ceased at the point of data saturation (Morse, 1995). The

criteria of redundancy for defining sample size have also been proposed by Lincoln and Guba (1985: 202): “In purposive sampling the size of the sample is determined by informational considerations. If the purpose is to maximize information, the sampling is terminated when no new information is forthcoming from new sample units”.

The details of the sample size are presented in the table below.

Categories of Students	Females	Males	Total
F.Sc	09	13	22
B.Sc (Hons.) Agriculture (First Year)	14	21	35
B.Sc (Hons.) Agriculture (Final Year)	09	22	31
Alumni Agriculture Universities	04	07	11
Students who did not study Agriculture	07	05	12
Total	43	68	111

Table 3.1: Number of Research Participants

3.3 Method of Data Collection

Qualitative data collection methods include participant observation, action research, interviews and historiography (Willis, 2009). However, considering the nature of objectives of the current study, semi-structured in-depth interviews were selected as a tool for data collection as they are found most fruitful in exploring phenomena which a researcher cannot observe directly, e.g. emotions, thoughts, intentions and experiences (Patton, 2002; McCracken, 1988). Semi-structured interviews are advocated for their potential to generate real stories of events (Denzin, 1970). The research participants have greater opportunities to express their answers in a semi-structured interview. At

the same time, the flexibility of the research tool allows the researcher to investigate interesting issues raised during the interview (Arksey and Knight, 1999: 7). The use of semi-structured interviews enabled the researcher to probe into students' verbal accounts and unveil new dimensions of their experiences (Britten, 1995; Burgess, 1982; Denzin, 1970).

3.4 Interview Guide

Data was collected using an interview guide that outlined the topics of interest (King, 1994) as well as “the key questions that the study is addressing” (Arksey and Knight, 1999: 97). The guide was kept flexible enough to probe the responses of the participants, without breaking the logical flow of the information. The ‘descriptive questions’, ‘structural questions’ and ‘contrast questions’ were added to gain maximum information (Spradley, 1979). The ‘descriptive questions’ allowed a ‘grand tour’ of the respondent’s world. A few examples from the interview guide are: ‘Please tell me about yourself and your family’; ‘What is the education and occupation of your family members?’; ‘Where do you come from?’; ‘Tell me about that area’; ‘Tell me about your school’. Structural questions e.g. ‘When did you decide which subjects you wanted to study in Matriculation?’ (For complete interview schedule see Appendix 3.1).

As has been discussed in Chapter 1 (see Section 1.3.4) and also noted in the data analysis, HSE is an important educational decision-making milestone that shapes students' future occupational choices and pathways. Students were asked about their early school life and childhood, followed by their choices at that time. They were asked about their future preferences (at that particular time) and what shaped their choices. The first year undergraduate students were also asked questions about childhood

experiences and initial choices, and their school life and their academic choices made at college level, etc. Furthermore, they were asked how they secured admission into an agriculture university and to describe their experiences after their HSE result was announced. Questions about their future academic choices within agriculture and their vocational goals enabled the researcher to capture the insights of choices that have been reflected in the analysis.

The next cohort interviewed was that of agriculture final year students. Detailed information about their university experiences and major selection was collected in order to identify factors that had an impact on their academic and vocational decisions. How they foresaw their future as an agriculture scientist was also queried. After the final year students of agriculture, the cohort of agriculture alumni was interviewed. They were probed in detail about their experiences after graduating in agriculture, and how their occupational choices were shaped and realized. Their transition from academic life to professional life was enquired about as well as the connections between their early choices and their ultimate choices.

As mentioned earlier, data were collected not only from agriculture students but also from students who did not study agriculture. The focus of discussion with this cohort was how and why they made their academic choices and why they did not opt for Agriculture Sciences. They were probed in an endeavour to unveil the barriers in choosing Agriculture Sciences, in order to compare their responses with the notions presented by agriculture students.

Besides the queries made in the interview guide, participants were encouraged to add any experience, person or event that was relevant to their choices but was missing from the interview. A few students highlighted the impact of hostel life on the academic and personal life of students. Besides this, feedback from the interviewees at the end of each interview enabled me to incorporate students' suggestions and remove any problems in the succeeding interviews. Interviewing experiences were incorporated into the interviewing techniques, e.g. students did not express any opinion and viewpoints about the role of Agriculture research institutes in shaping their educational and occupational choices, and thus comparatively less discussion was made around this theme.

3.5 Limitations of the Interviews

Interviews, like all other research methods, have limitations, and in order to collect relevant data, it is necessary for the researcher to be aware of such limitations. Since the respondents are asked questions about their experiences, some researchers believe that interviews do not automatically allow exchange of human experiences and that the interviewer can influence respondents' responses in many ways (Silverman, 1993). Besides this, there is a possibility that whatever the participants are narrating during the interview might not have happened in reality (Murphy et al. 1998). This drawback was overcome by interrogating and probing the statements made by the students, e.g. a few students expressed their lack of interest in certain professions and colleges. However, when they were probed about their lack of interest, they added that they realized that their (comparatively poor) academic record did not allow them to make those choices.

Interviews are not identical to conversations because research participants are 'put on notice' to share their views and experiences, and because there is a possibility of

reluctance to discuss that particular matter at that particular time (Dingwall, 1997). In order to overcome this, prior consent was obtained from the respondents to participate in the interviews. The interviews were conducted at the respondents' preferable time and place, and they were given the autonomy to abandon the interview where they felt they should not continue. Furthermore, the interaction between the researcher and the participants is context sensitive and could possibly diminish the trustworthiness of the interview data (Hammersley and Atkinson, 1995).

To overcome this, I attempted to maximise early rapport with the respondents by interacting prior to the interviews and ensuring that the atmosphere was conducive to an interview session e.g. students were more comfortable being interviewed in Urdu, thus corresponding in English was avoided. The language of communication remained the same as the respondents' preferred language. Atkinson (1998: 42) also believes that by showing interest, empathy, compassion and understanding towards the respondents, the researcher can aid vigorous responses.

3.6 Pilot Study

The pilot study helped to test the feasibility of conducting, translating and transcribing the interviews and gave an idea of the time required to perform the tasks. The pilot study was conducted in D.G. Khan, which is located in south Punjab. The exercise helped to determine how long it would take to gain access to the study site and to the students, and also provided a platform to test the audio recording device. Furthermore, the interview schedule was tested for any possible mistakes: misleading, difficult or ambiguous questions. Questions which produced the most usable data or detailed responses were to be identified in order to expand them further should the need arise.

The respondents were also asked about the complexity of the interview questions and their comfort in discussing various issues in the interviews.

3.6.1 Visits to the Non-Agriculture Colleges

Three intermediate and higher secondary colleges were visited during the pilot study. Two of the colleges were small and enrolled students of both genders; neither was co-educational, however, due to the conventional, traditional and cultural norms of the region. I met the principal of the first college who arranged the opportunity for me to interact with the students where I introduced the research and asked for volunteers who were willing to talk about their educational and occupational choices, especially regarding agriculture. Unfortunately there was not a single student in the classes who wished to study agriculture.

Since my visit to the first college was not fruitful, another visit was made to the Boys Degree College D.G. Khan, which is the biggest boys' college in the city. The college offers higher secondary education, bachelor and postgraduate degrees in various subjects. The respondents were very shy and surprised at the interview because they had never taken part in any research activity. Only one student volunteered when a request was made for volunteers who wanted to study agriculture after F.Sc. The response was surprising for me as well as for the class teacher. The majority of the pre-medical students hoped to get admission to medical colleges. The students were then asked whether they knew that agriculture sciences was an available option open to them after intermediate and if they wished to study that. However, less than 10% students expressed awareness of the proposed option. Out of those who knew that agriculture existed as a field of study, the researcher asked for volunteers. Four pilot interviews

were conducted in the college, but not in isolation as the traditions and social values of the region did not allow the interaction of male and female in isolation. A member of my family and one staff member were present in the room during the interview.

3.6.2 Visit to the Agriculture College D.G. Khan

The Agriculture College D.G. Khan is a sub-campus of Agriculture University Faisalabad and was established in 1999. A telephone meeting was scheduled with the principal of the college, Dr. Shafqat Nawaz. During the meeting, I introduced myself and briefed him about the research and purpose of the visit. The principal assured maximum co-operation and allowed me to interact with the students. I contacted the first semester B.Sc. (Honours) Agriculture students in class, communicated the purpose of my visit and gave a brief introduction to the research. I made a request for volunteers who felt comfortable talking about their educational and occupational choices and their academic journey so far. I purposefully selected students who planned to study agriculture and students whose initial plan was to study something else but their choices had drifted towards agriculture. The approximate percentage of students who made the planned decision to study agriculture in the whole class was 10%. Initially, two girls volunteered for interview; afterwards, however, I purposefully asked boys to volunteer also. Four interviews were conducted with first year students. The final year students were committed to their internships and were difficult to approach as there were no classes being held for them. However, with the cooperation of the principal and teachers, I succeeded in interviewing two students from the final year (one male and one female). All together six interviews were conducted during three visits to the college.

3.6.3 The Position of the Researcher

My gender was causing slight reluctance among boys to volunteer for the interviews because face-to-face interaction between males and females is not a common practise in that region. Most of the intermediate (HSE) students did not make eye contact and in order to make them feel at ease, I avoided direct eye contact with the students. However, the female respondents were comparatively expressive and confident due to my gender. The fact of being female and the conventional values and culture of the region were affecting the comfort and expression of the respondents. Most of the students came from surrounding villages and had rarely talked to a female outside their family; thus, they found it difficult to discuss their life, priorities and plans. In order to reduce the effects which gender issues had on the respondents and the research, I dressed and behaved according to the norms and values of the local community.

3.6.4 Analysis of Pilot Study

All the interviews were translated into English and transcribed. Although much additional effort was required to complete this task, it helped me considerably to come closer to the data. The purpose of analysing the pilot study interviews was to test whether the data collection tool produced answers to the research questions. The interviews were analysed to explore the way young students made their education and career choices. Field notes were recorded during data collection and interviews. The transcripts were compared with one another to identify possible similarities as well as differences (e.g. the differences in opinions of high and low achievers, of rural and urban students, of males and females, etc.).

I aimed to be as neutral as possible and made no judgments about the respondents. To ensure this, the method and style of interview were analysed by listening and re-listening to the interview recordings in order to rectify any errors. It also helped to identify if I was making unnecessary interruptions during interview or if I was leading the conversation. The styles, pitch, tone and vocabulary were also analysed to ensure that it maximised the comfort and comprehension of the respondents. Besides re-listening to recorded interviews, the feedback from my family member present in the interview room (though at significant distance from the researcher and participant) was another source of feedback on the interview style. With every interview, my confidence increased in asking people about their personal life and choices. The pilot study also enabled practising rapport building with respondents.

A summary of the analysis was made, on the basis of which a few amendments incorporated into the interview schedule. One important theme absent in the interview guide emerged during the pilot study interviews. The element of ‘respect’ associated with different professions was raised as a very important impact on the choices of students. Respect associated with various professions (e.g. medicine and engineering) in the family and in society as a whole laid foundations for the choices and career expectations of the students. Students highlighted that the reason for not preferring agriculture sciences is because they felt that the people around them did not perceive agriculture as prestigious or as respectable as other professions. This theme was later added to the interview guide. In addition to this, a few more questions were added, e.g. ‘what were your priorities regarding higher education in your school life?’ and ‘How did you prioritize your educational and occupational choices?’

The analysis of the pilot interviews identified a number of key themes, which are as follows:

1. The roots of occupational choices in childhood experiences.
2. The role of family and significant others in initiating the thought process of occupational choices among students.
3. The level, timing and sources of information about available options of higher education and occupation.
4. Transitions and shifts in choices.
5. Stages of cognitive processing of information and putting choices into practice.
6. Factors that facilitate or limit choice of studying agriculture.
7. The impact of residential background.
8. Perception of agriculture as a profession and its social value as compared to other professions.

The data analysis of the pilot study was followed by the main fieldwork research in Islamabad and Faisalabad.

3.7 Data Collection

The pilot study offered considerable insights into the fieldwork experience. However, the challenges faced during main data collection were greater than the pilot study due to immense security threats to educational institutions across the province. Educational establishments suffered terrorist attacks¹³. These bomb blasts were part of the series of terrorist attack across the country by the supporters of Taliban and al-Qaeda. Schools and colleges were closed after the attacks (BBC, 21-10-2011). This considerably

¹³ Twin bomb blasts at International Islamic University Islamabad on October 20, 2011 killed five students and injured at least 18.

affected the amount of effort and time consumed during the data collection. I had to go to extra lengths to gain access to study sites and students. The details of the fieldwork and these challenges are as follows.

3.7.1 Gaining Access to Study Sites

The first practical step of the data collection was to gain access to study sites. This included entry clearance to the academic institutions and permission to interact with the students. The procedure for gaining access to institutions in the pilot study was replicated but I faced much more difficulty in gaining access to colleges in Islamabad. Many college security personnel simply did not allow entry, even to interact with the principal. The reason behind strict security was the above-mentioned wave of terror attacks and bomb blasts in various academic institutions in Pakistan. The government and private colleges showed a lack of interest in the research and were reluctant to allow entrance to ‘an outsider’.

The issue was then discussed with the supervisors and they proposed using personal contacts to gain access to colleges. I proceeded to F.G. College for Girls F-7/2, which is the largest female college in Islamabad. This college too had strict security policies but as an alumnus of the college, I knew the academic staff, and therefore gaining permission and access became easier and I was allowed to interact with the students. The next visit was made to Government College for Boys H-9, which is one of the largest and oldest colleges of the city. Access to the institution was again made possible through personal contact.

The data collection from the undergraduate students of B.Sc. (Honours) Agriculture was carried out in PMAS-AAUR. I personally met Dr. Irfan-ul-Haq, Dean of the Faculty of Crop and Food Sciences, and introduced myself and explained the purpose of the visit. Gaining access to the University of Agriculture Faisalabad also followed the same pattern. Telephone contact was made with the Dean of the Faculty of Agriculture, Dr. M. Ashfaq, before arrival in the city. The Dean gave the approval to interview students and also introduced me to the Agrarian Society (the students' body) and its members.

3.7.2 Timing of Data Collection

The timing of conducting the interviews was crucial to the study. Interviewing various cohorts of students in two different cities (Faisalabad and Islamabad) and in various educational institutions was challenging. The aim was to interview students from both universities at the same phase of their academic life. It was ensured that each group of students was interviewed in a timeline such that their fellow students in another university did not surpass them at that particular level, i.e. from first to second year of graduation or from third to fourth year of study. For example, if first year B.Sc. (Honours) Agriculture students were interviewed in one city and in one institution, then students in the second city and in the other university were also to be interviewed during their first year and not the second year.

Furthermore, during exam periods and a week (or two) before then, when students show less interest in non-academic activities (e.g. volunteering for a long interview in this case), were also taken into consideration while planning the fieldwork. Semester breaks and the national holidays were also included in the plan. Furthermore, it was challenging to catch final year students for interview before they left for various

outstation destinations where they have to do their internships and projects. The considerations for all of these were vital in the planning of the fieldwork.

3.7.3 Availability of the Students for Interviews

From October-December 2009, the college students i.e. the F.Sc. second year students were available for interview without any semester or exam break, and after the winter vacations, the students were available in January. The agriculture students' first academic year starts in October and lasts until February. Thus, the F.Sc. and B.Sc. (Honours) Agriculture first-year students were easily accessible. However, final year B.Sc. (Honours) Agriculture students had to leave for their internships in different cities and organizations, and for this reason the final-year students were interviewed first because of their availability issues. To recruit non-agriculture students, posters were placed in the Department of Basic Sciences of the universities in eye-catching places, e.g. common rooms, notice boards, departmental announcement boards, the cafeteria, library and computer labs. The posters had the contact details of the researcher so that the volunteers could easily make contact. There were no availability issues regarding this cohort. For agriculture students, besides placing posters on the departmental announcement boards and other important places, announcements were made in the desired classes by the teachers. I introduced my research and myself in order to gain the confidence of the respondents and encourage them personally to volunteer in the research.

Contacting the alumni was a challenging task. The researcher made use of the alumni contact details maintained by the Placement Bureau of PMAS-AAUR (which keeps contact details of all graduates since 2005). An email was sent to all graduates, stating

the purpose of the research and giving contact details of the researcher. The email requested volunteers who were willing to talk about their academic journey and occupational experiences. In response, I received phone calls and emails of graduates who were willing to give interviews. I co-ordinated a suitable time and place for interview with the volunteers. In the University of Agriculture Faisalabad, the Dean, the administration and the Agrarian Society, all helped in contacting and interviewing alumni of UAF.

3.8 Data Generation: Transcription and Translation

The data analysis began with the transcription of audio recordings into written texts, a time consuming and challenging task. Interviews were transcribed as soon as possible, but data collection was not slowed down for the sake of transcribing. The decision of undertaking the laborious task of transcribing all the interviews was made as it was ‘an excellent way of getting to know the data’ (Pole and Lampard, 2002: 202). The summary method was avoided because transcribing chunks of data can create hurdles to the analysis process. Transcripts allow “fine-grained analysis, where inferences about the meaning of text are built around details that are unlikely to be apparent in a summary” (Dunne et al. 2005: 96). The decision to include and exclude text and themes continues to change until the very end of the data analysis (Halai, 2007). Transcripts therefore provide numerous and preferably lengthier quotations (McLellan et al. 2003: 67). Transcribing the full interviews proved useful when analyzing the data because “[e]very word that people use in telling their stories is a microcosm of their consciousness” (Vygotsky, 1987: 236).

Verbatim transcription is preferable for data analysis as it is seen to provide vital and detailed raw material (Patton, 2002: 441). However some believe that the standard verbatim transcriptions are not essential for analysis. The transcription style can vary considering the research purposes. In the current research, the transcription focused less on pauses, inaudible speech ("um, er" etc.), exclamations, full stops, etc. Oliver et al. (2005: 1273-1274) explain this kind of transcription as denaturalized, one in which "idiosyncratic elements of speech (e.g., stutters, pauses, nonverbal, involuntary vocalizations) are removed". This methodological decision was taken as I was not engaging in linguistic or conversation analysis. More attention was paid to relevant data, "as extraneous information makes a transcript difficult to read and might obscure the research purpose" (Davidson, 2009: 38).

Besides transcribing, translating interviews is one of the more challenging tasks in research (Strauss and Corbin, 1998). As each language is different, achieving accuracy becomes more difficult. The participants were encouraged to speak in the language which was most comfortable for them to express their views. The first apparent choice of all the respondents was Urdu (since Urdu is the national language and is widely spoken and understood). In order to increase their validity, all translations were made by the researcher while using words and idiomatic expressions that best described any concepts. The decision was taken once again to remain close to the data and avoid personal values, beliefs, interpretations and expectations of external transcribers fuse into the data (Greer, 2003: 49).

Translation is not a mere exercise. It involves decoding ideas of a culture and group expressed in one language and converting it for a totally different audience (Torop,

2002). “[T]ranslation is essentially a boundary crossing between two cultures” (Halai, 2007: 345). A language envelops a whole culture and when it is translated, special attention should be paid to reflect the similar ideas in another language. However, as languages are ‘context based’, the words in one language “cannot be easily conveyed in another language and to another culture” and therefore, some meanings are lost in translation (Halai, 2007: 351-352). An effort has been made to make the translations easily comprehensible for readers belonging to any culture around the world. Nevertheless, the richness of expressions and cultural meanings has partly and inevitably been lost in translation. Interviews were translated in a manner that could satisfy the “basic requirements of (a) making sense, (b) conveying the spirit and manner of the original, and (c) have a natural and easy form of expression” (Halai, 2007: 351).

The tasks of translating and transcribing were more of a process of recontextualisation of the discourse (Bernstein, 2000), and therefore might have transformed the original data in some ways¹⁴. Many questions were raised in this process, e.g. Can the interviews be perfectly translated? How much time was needed to make them perfect? What exactly was needed from the interview transcripts which can facilitate the analysis to the maximum? How much time could be spent on the translations and transcriptions? It was realized that in this process ‘Completeness’ is an illusion (Silverman, 2000). I was aware of Flick’s (1998) criteria of manageability, readability, learnability and interpretability. Thus, I decided to work on the audios of the interviews in such a way that could produce sufficient textual data that was easy to write, read and learn, and at the same time, would assist in making interpretations.

¹⁴ See Appendix 3.4 for an example of the translation of Urdu text in English.

3.9 Data Management

At the completion of the translation and transcription of interview data, the volume of the data proved extremely challenging to manage. The data analysis was aiming at exploring the major themes, and relationships of concepts and codes. This could be better managed by using computer-assisted software rather than numerous papers and files. CAQDAS facilitates data analysis by reducing the inconvenience and time consumed. “Qualitative data analysis software is designed to carry out administrative tasks of organising the data more efficiently and should therefore be exploited to the full on this basis” (Welsh, 2002). CADQAS facilitates the researcher to make data analysis translucent, precise and manageable, and provides a reliable general picture of the data (Morison and Moir, 1998; Richards and Richards, 1994).

This led to the decision of using QSR NVivo (QSR Non-numerical, Unstructured Data Indexing, Searching and Theorising - NUD*IST - Vivo) for managing the data itself and the analysis. The software was used as an ‘organizing tool’ (Smith and Hesse-Biber, 1996) in order to facilitate the analysis similar to those done manually with paper, files and highlighters. The interpretations drawn from the data using the software were not the product of the software. Instead, they were conclusions reached and rationalized by the researcher using the software. The data was searched for codes and emerging themes and the software was used to manage time and data.

The Node System facilitated the coding of concepts and the development of themes deemed relevant to the study, because “the nodes are generated from the documents by the researcher, taking account of the data, features and themes that emerge” (Marshall, 2001: 1). The coding process became quick and easy as compared to manual methods of

cutting, pasting and storing text. I could code the documents on screen which enabled extensive coding in the initial round of the data analysis. Although not all the coding schemes were fused in the final themes, it still enhanced my confidence while analysing data and its rigour (Welsh, 2002).

3.10 Data Analysis

Qualitative data analysis is a continuous process of driving meanings and exploring patterns of the interview data, which is unstructured, detailed and voluminous in nature (Bryman and Burgess, 1994). The process of data interpretation commenced immediately after the first question was asked from the first participant and repeated until the final compilation of the research (Morse, 1999a; Maxwell, 1996). The concurrent data collection and analysis enabled me to manage the data adequately and identify salient themes pertinent to the research. Simultaneous data collection and analysis is one of the most significant features of qualitative research (Morse, 1999b; Erlandson et al. 1993), as it gives direction to the researcher for further data collection and analysis. Moreover, analysing the discourses during data collection assisted in identifying the point of data saturation. It allowed for the decision to cease data collection within the particular cohort when further data collection was not significantly enriching the existing data with new categories (Corbin and Strauss, 2008; Glaser and Strauss, 2008).

The process of qualitative data analysis is open-ended and a creative act (Lofland and Lofland, 1995), and there are numerous ways to approach qualitative data and textual transcripts to draw conclusions (Mason, 1996: 54). During the interviews, the respondents did not express general opinions but rather shared their personal

experiences specific to their life events (Patton, 2002). The interview data were analyzed through thematic analysis because ideas flourishing from a data set generated for exploring a process are “better understood under the control of a thematic analysis” (Aronson, 1994). Thematic analysis enables sorting transcriptions systematically into themes. The method allows organizing constellations of behaviours and forming consistent arrangements of events within the data set (Aronson, 1994; Leininger, 1985; Taylor and Bogdan, 1984). According to Boyatzis (1998: 3), without drawing themes from the data, a researcher may not be able to proceed towards the important stage of analysis and interpretation.

All interview transcripts were coded in detail at first. Coding the data is among the popular approaches to analyse qualitative data (Strauss and Corbin, 1990; Cuba, 1988; Charmaz, 1983). Codes are tags or labels assigned to pieces of data communicating the meaning of the participant’s accounts (Miles and Huberman, 1994). At the first stage, each sentence of the interview transcripts was examined for any possible event, behaviour, attitude or perspective, and was coded by giving labels accordingly in order to make maximum discoveries within the data (Charmaz, 1983). An effort was made to keep the tags and labels as close as possible to the data by using a word or a short phrase taken from the data itself¹⁵.

Once the initial coding of the data was complete, the mass of codes were again analysed and reviewed (Lofland and Lofland, 1995). Maximum coding of events, behaviours and choice influencers were made to indicate the potential stages of the choice process. The most repetitive codes signifying important themes were identified (e.g. time of

¹⁵ See Appendix 3.5 for an illustration of the coding.

information about agriculture, sources of information, impact of significant others on choices, obstacles in choosing agriculture sciences etc.). The least mentioned ones were also noted (e.g. impact of personal health issues on educational choices, death of a parent, relying on Allah while making decisions, etc.).

The codes communicating similar phenomena were grouped together and relationships among various codes were identified (e.g. association of early occupational preferences and later career decisions, the level of information at the time of decision and its impact on the later experiences). This process and the resulting codes became building blocks for subsequent explanations and meaningful findings (Strauss and Corbin, 1998: 13). Further on, clustering of interrelated codes allowed for the development of a smaller number of comparatively higher-level categories, which effectively represented relevant features of the data.

Memos and reflective notes also proved highly useful as they provided guiding points for emerging codes and repetitions in the data. Memos made after the interviews included interesting points in the participants' accounts (e.g. perceptions of students regarding occupational outlets associated with various majors, perceived rewards and their preferences etc.). The practice continued during the coding process as well, and aided the process of developing categories and identifying major themes (e.g. information about agriculture sciences and careers in agriculture was playing a prominent role in educational as well as occupational choices at various stages of the choice process).

In qualitative research, the search and presentation of deviant cases constitute a significant element of analysis (Henwood and Pidgeon, 1993; Phillips, 1987; Lincoln and Guba, 1985; Marshall, 1985; Athens, 1984; Glaser and Strauss, 1965) as they reinforce the credibility of findings (Silverman, 1989). An important element in the formation and redefinition of the categories were examples which contradicted the initial instances (e.g. a few students took admission in an agriculture university without any substantial information or consideration about a career in agriculture, unlike many other students). Interview data were carefully scrutinized in search of negative cases, which further supported category formation by addressing inconsistencies found in the data set (Secker et al. 1995). The analysis was therefore moving forward while incorporating negative cases; amendments were made to the conceptualization of the choice process through disconfirming evidences (Murphy et al. 1998). Vigilant scrutiny for falsifying evidence and their inclusion in the analysis adds value to the research. The constant comparison among emerging categories and negative cases allows for the development of themes that could be applied to the entire data set.

Integration of categories is important for developing a story about what is happening in the data. The codes and categories (linked through memos) indicated major themes of the data (e.g. the role of locality in shaping the educational and occupational choices of agriculture students and how belonging to rural areas carries its effect on the occupational choices of students). Themes can be explained as various pieces extracted from the patterns in the data (Taylor and Bogdan, 1989: 131), which after identification are elucidated. These “fragments of ideas or experiences” do not communicate much meaning if studied in isolation (Leininger, 1985: 60). These small pieces of information are linked in such a manner that they develop a comprehensive picture of the

participants' collective experiences (Aronson, 1994). The themes are derived from the original interview data, field notes and researchers' observations, and are a sophisticated combination of these elements (Guba, 1993).

It was felt that the knitting of themes that enabled the development of the story of the data could be better understood if individual themes were analysed at first. Once major themes were identified and agreed upon with the supervisors, the researcher studied the transcripts again and a keener interrogation of the data was done by comparing cases and incidents in search of similarities and differences. This allowed the researcher "to differentiate one category/theme from another and to identify properties and dimensions specific to that category/theme" (Corbin and Strauss, 2008: 71). The excerpts from the interviews (related to the themes) confirmed the authenticity of themes, and the process ensured that each theme was expounded with the participants' quotations. The aim was to develop well-articulated descriptions of categories and themes with rich and clear exemplary quotations.

The themes (or categories) can be derived from the research data itself or can be guided by the existing theories in the field of study (Ryan and Bernard, 2003: 88). However, the researcher should give utmost attention while identifying themes and should not drift towards finding only anticipated categories (ibid: 92). Some of the categories in the analysis were signified by the literature review, e.g. role of family, role of friends, role of institutions and the socio-economic context of the choosers and the choices. However, the stages of the choice process and the role of social prestige associated with various professions originated from the data, rather than the researcher's anticipated and pre-determined findings (Foskett and Hemsley-Brown, 2001).

The final stage of data analysis consisted in relating the research themes to the already existing concepts, literature and empirical research surrounding the area of educational and occupational choices and youth decision-making. The comparisons gave profound indication of similarities and differences of the research themes, theoretical literature and empirical studies. Referring to literature allows the researcher to make logical assumptions from the interview data. In qualitative research, the conclusions drawn from the research are considered on merit only if the literature is coherently linked with the findings of the research (Aronson, 1994). The resulting storyline that is developed will support the reader to understand the educational and occupational choices of the students, the process of their decision-making, their shared experiences, and the salient social circumstances influencing choices.

3.11 Reliability and Validity of the Study

According to Lewis and Ritchie (2003: 270), reliability means “the replicability of research findings and whether or not they would be repeated if another study, using the same or similar methods, was undertaken”. Reliability and consistency of the study is observed when a study is replicated in similar contexts with similar participants and it produces similar results (Lincoln and Guba, 1985). In a research, “the ‘correctness’ or ‘precision’ of a research reading” is called the validity of the research (Lewis and Ritchie, 2003: 273). Validity lies in the close connection amid research findings and perceptions of the participants (Guba and Lincoln, 1989). It is mandatory that the research results should be neutral, bias-free and based on its focus and reality (Lincoln and Guba, 1985), and the theory and explanations are constructed on the data collected and not by the researcher collecting the data (Erlandson et al. 1993).

Rigour is an essential component of qualitative research (Barbour, 2001; Mays and Pope, 1995). A qualitative study can prove its scientific validity through rigour. However, there is no single solution that can address the issue of rigour in all types of qualitative studies (Barbour, 2001; Mays and Pope, 2000). Cohen et al. (2007: 142) proposed various forms of triangulation which can add to the study's reliability and validity. These include time triangulation, space triangulation and combined levels of triangulation: theoretical triangulation, investigator triangulation and methodological triangulation. The current study employed space triangulation, as the sites of data collection were in two different cities of Punjab. Within those two cities, data were collected through five institutions. This allowed for overcoming the shortcomings of studying only one culture or sub-culture (ibid.).

3.12 The Question of Generalization

Every research has to answer the question of generalisation and logical links in the information gathered (Maykut and Morehouse, 1994). Results gained from one socio-economic structure are difficult to generalize (across and within) other communities due to the existence of immense diversity among various groups and societies (Seale, 1999). The transferability of research results depends heavily on the similarity between the context of the previous investigation and the situation within which it is to be applied. In order to do so, it becomes mandatory on part of the researcher to give maximum details of the research context to facilitate the transferability if someone wishes to do so (Guba and Lincoln, 1989). The description should be so detailed and effective that a reader encounters feelings of *déjà vu* when he or she visits the setting in reality (Erlandson et al. 1993).

It is highly unfeasible to conclude research findings as ultimate truths beyond reasonable doubt (Murphy et al. 1998). Therefore, generalisation of qualitative results is comparatively limited. At the same time, however, the explanations should also fit into the patterns in the larger population. Qualitative theory also explains situations and problems beyond the group under study (Morse, 1999c). The current research gives insights into how agriculture students in Pakistan make their educational and occupational choices. It attempts to explore the nature of the phenomena, instead of its prevalence (Lewis and Ritchie, 2003), and builds a foundation of knowledge about the particular group of students.

3.13 Ethical Considerations

Every research has to ensure maximum safeguard of its participants, and for the said purpose, has to abide by research ethics. The consent of the participants to participate in the research was an ethical concern of the study. The issue was addressed by making sure that all the participants were volunteering for the interview and have freely given their consent of participation. The students were briefed about the research, the nature of research and the interview, how the research was being undertaken, how it will be disseminated, and their right of withdrawal from the interview at any point if they think and feel that they should not continue (Brinkmann and Kvale, 2005; British Sociological Association, 2002). They were given full autonomy to decide whether or not to participate in the research (Arksey and Knight 1999: 129). Furthermore, audio recordings of the interviews were only done after briefing on the purpose of audio-

recording and obtaining prior approval of the research participants¹⁶ (British Sociological Association, 2002).

The majority of students seemed to be concerned about their anonymity while expressing their views. The anonymity of the participants was therefore respected and their personal information was kept confidential (British Sociological Association, 2002: 5). Students were assured that their views and opinions would be used solely for research purposes. Their interviews were kept confidential from their fellow students and their host institute. Their identity was not revealed to anyone besides the researcher and the supervisors.

There were instances where respondents were emotionally overwhelmed while narrating their stories. As a sociologist, maximum efforts were made to “ensure that the physical, social and psychological well-being of research participants is not adversely affected by the research” (ibid: 2). These experiences led to the consideration of “the possibility that the research experience may be a disturbing one” and I attempted accordingly, wherever possible, “to minimize or alleviate any distress caused to those participating in research” (ibid: 4).

My own safety was also of prime concern, due to reasons stated in Section 3.4. I did not put myself at risk during the conduct of the fieldwork, while approaching educational establishments, and deciding interview place and time with the respondents. The BSA also advocates adopting necessary measures to “reduce the risk to the researchers”

¹⁶ The informed consent letter is attached as Appendix 3.2.

(British Sociological Association, 2002: 2). A separate mobile number was used for corresponding with students. Moreover, security clearance from the universities was formally taken to work on the campus premises and the security personnel were kept informed of the researcher's schedule at all times. Family members were kept in touch and were regularly informed of all the research activities, locations and contact details (Pole and Lampard, 2002: 143).

Summary

Since the study aims to collect data on indirect observables, namely the various depths of experience of agriculture students and the cognition and behaviours that shaped their choices, a qualitative approach, specifically consisting of semi-structured in-depth interviews, was chosen for the current research. In order to ensure that the findings of this qualitative study were comprehensive, complete, saturated and able to account for negative cases, purposive sampling was adopted. For the sample of students interviewed to capture the various stages of educational and occupational choice process, the sample was divided into five distinct cohorts, representing students at different points in their academic or professional lives.

To acquire maximum information, an interview guide consisting of 'descriptive questions', 'structural questions' and 'contrast questions' was applied during the interviews; the interviews were nevertheless allowed to be flexible, with participants being encouraged to add any experience, person or event that was relevant to their choices but was missing from the interview.

Following a pilot study in D.G. Khan, Punjab to test whether the data collection tool produced answers containing data relevant to the research questions, a few amendments were made to the interview guide, such as the inclusion of the theme of professional ‘respect’, the perceived lack of which discouraged student preference towards agriculture education. The pilot study was followed by the main data collection for the study, which took place in the form of interviews with agriculture students in five educational institutes in two cities of Pakistan, namely Faisalabad and Islamabad. To overcome the restricted entry to these institutes and their students following the recent spate of terrorist attacks, the researcher used personal contacts to gain the required access.

Following the interviews during the main data collection, a deneutralised and culturally sensitive transcription of the data, for analysis, was made. Concurrent data collection and analysis were undertaken to enable me to manage the data adequately and identify salient themes pertinent to the research. While analysing the data through thematic analysis, inconsistencies found in the data set were carefully searched for and addressed. The emerging research themes were then related to existing concepts, literature and empirical research surrounding the area of educational and occupational choices and youth decision-making.

Space triangulation was employed to ensure reliability and validity of the study, as the data was collected in five institutions in two city sites. The triangulation allowed for overcoming the shortcomings of studying only one culture or sub-culture.

The ethical safeguards were also carefully added to the research design and the manner of the fieldwork, with special attention given to confidentiality, as anonymity was a concern for the majority of students participating in the interviews. Disclosure of the research to ensure informed consent, and the freedom to enter and exit were also arranged during the interviews.

The following chapters will elucidate the findings and the results of the research using the methodology outlined in this chapter.

Chapter 4

THE CHOICE PROCESS

Introduction

The aim of this chapter is to explore the educational and occupational choice process of agriculture students in Pakistan by answering the first research question: *What are the evident stages in the educational and occupational choice process of young Pakistani students who decide to study agriculture sciences and pursue a career in the field of agriculture?* It has been argued in Chapter 2 that contemporary models of educational decision-making fail to capture the elements of ‘transition’ and ‘sequence of steps’ taken to reach to a particular decision. Considering these issues, the current chapter focuses on the series of stages of the choice process that has emerged from the data and presents them individually as well as in coherence with other stages. Moreover, the chapter discusses how individual autonomy and structural features combines at various stages of the choice process thus addressing the issue raised in the literature review regarding the role of agency and social structure in the educational and occupational choices of students, especially the agriculture students in Pakistan.

The analysis in this chapter has been presented by an analogy of the way a farmer grows a plant¹⁷. The farmer denotes the chooser which is the student, the seed (which eventually develops into a plant), his choice, and the soil and environmental facets represent the external elements influencing the choice process. The analogy helps to establish systematic links between the stages and the dimensions of the choice process that have surfaced from the interviews. Moreover, the outcome of the process is

¹⁷ It is necessary to remind the reader that the analogy serves to assist in clarification on a general level only.

postulated according to the experiences of the earlier stages allowing for a deeper understanding of the educational and occupational choice process. The implications of the variant experiences during the initial stages are discussed in the final stages of the process reflecting the impact of educational decisions on occupational choices.

The symbolic presentation of structural influences in the form of soil and environment incorporate “elements outside agent’s control” at various stages (Chattoe-Brown, 2010: 5). The intricate and coalesced impact of ‘agency’ and ‘structure’ is captured through analyzing how an individual’s actions are subject to structural forces and at the same time how structural influences impact on the choices. This extends our understanding of the way structure and agency together shape the choices of students in Pakistan and the kinds of results that can be anticipated from different kind of agency and structure combinations.

4.1 Sowing the Seed

The title is inspired by the act of a farmer sowing a seed in order to begin the process of growing a plant. It is imperative that the farmer holds knowledge about the variety of available seeds and embeds a particular seed (or seeds) to begin the process. Similarly having an awareness or holding ‘knowledge’ about agriculture discipline and further ‘considering’ it as a possible career option are the two basic conditions of the first stage of the educational and occupational choice process of agriculture students in Pakistan.

In order to choose agriculture, it is mandatory that one knows about its existence even if details are unknown, because awareness of various career prospects directly influences the academic and vocational goals of young people (Conroy, 1997). Lack of familiarity

with preparation for a career in agriculture poses problems in the choice process of agriculture students (Gilmore et al. 2006; Scott, 2004). Although, Pakistan is an agricultural country and the majority of the population is linked to agriculture, the concept of agriculture sciences, qualifications and specialized professions within agriculture is not well established.

‘In our (Pakistani) society, a common man does not even know about agriculture scientists’ (Mehroz, Non-Agriculture). Students should hold introductory information about agriculture as a professional qualification leading to a potential career for a choice process to begin. Many non-agriculture respondents came to know about agriculture sciences after they decided upon or were admitted to their respective degree in subjects other than agriculture. This lack of knowledge about agriculture and its career possibilities restrains students from choosing agriculture and proposes that if students have more knowledge about plausible careers in agriculture (besides farming), they might be more inclined to choose it as career (Johnson, 1996).

Aptitude and personal interest in agriculture can go in vain if a student is unaware of the discipline. The case of Noor (Non-Agriculture) testifies this. Despite having passion for plants and an interest in agriculture, she never knew that she could study agriculture. When she came to know, she had already completed her B.Sc. and despite numerous efforts, she could not secure admission in M.Sc. Agriculture due to eligibility restrictions (see Section 1.3.5). Thus timely ‘awareness’ is compulsory to begin the choice process. Her example also indicates that ‘stiff’ structural features can restrict choices regardless of extreme agency if choices have not been made at the right time.

Besides knowledge, information and awareness, ‘consideration’ is another element required to initiate the choice process. Students should also show a degree of interest in pursuing higher education and career in agriculture, only then the process can move forward; otherwise, it will come to a halt. Available educational and professional alternatives become irrelevant if students do not consider them suitable for themselves (Hodkinson, 1995). Despite belonging to a rural community and family members involved in agriculture, Tanveer did not ‘consider’ studying agriculture and neither was he planning to apply to an agriculture university. This confirms that awareness alone is insufficient to move the choice process forward. Moreover, considerations are closely related to awareness. In Tanveer’s case, his low level of information was the core reason for his lack of interest in agriculture sciences.

Similarly, Umeia did not ‘consider’ agriculture due to her ‘lack of information’:

I just knew that there is a degree in agriculture but did not know in detail about it. I do not like this field and this does not attract me. I never saw any one in this field and I do not know what the opportunities are after studying it. So that is, maybe, the reason for not liking it.

(F/Umeia, Non-Agriculture)¹⁸

Even if the initial information at this stage is relatively more detailed than in the cases above, students might not be interested in studying agriculture that seizes the choice process. Rabia (F.Sc.) had an educational trip to an agriculture research centre during her school life where she met agriculture scientists, visited their workplace and laboratories and was briefed about research work in the centre, but she did not

¹⁸ Each interview excerpt has a code. The first alphabet denotes the gender of the respondent (F refer to female and M refer to male), followed by name of the respondent and the cohort s/he belonged to.

‘consider’ agriculture. Thus, the process of choosing agriculture did not move forward in the absence of ‘consideration’; though information was available. Rabia did not have agriculture as a priority due to the lack of respect associated with this profession which has been discussed in detail in the next chapter (see Section 5.3.2).

Mishael’s case also exhibits how the choice process halts when a student does not contemplate on the knowledge, and starts when a student shows interest. Mishael belonged to Gilgit which is famous for agriculture produce. Her family used to cultivate fruits. Since school, she was aware of agriculture education because her cousin studied it. However, she neither considered nor added it to her preference list until her HSE. During HSE, the same cousin motivated her and when she started ‘considering’ it, the choice process moved forward.

I had known about it for a long time but I did not think about it at that time. During my F.Sc., my cousin motivated me to study agriculture. Therefore, I thought if I do not get admission to a medicine college, then I would opt for agriculture.

(F/Mishael, Agri.4, PMAS-AAUR)

Likewise in the case of Tabassum. She had some information about the agriculture education but initially she was not interested and did not consider it until her sister advised her.

The first time I heard about Agriculture was in the 2nd year (F.Sc.). My friend’s tutor was doing B.Sc. Agriculture. He used to praise the degree a lot. My friend

used to tell me whatever he told her.... When one of my sister's friends did her M.Sc. in Food Technology from this university and was hired by Nestle, then my sister encouraged me to consider agriculture as well.

(F/Tabassum, Agri.4, PMAS-AAUR)

‘Awareness’ about agriculture sciences and ‘considering’ it as a possible pathway are the two characteristics of the first stage. In the absence of any one, the choice process will not move to the next stage. How this initial information is disseminated among students and what makes it worth considering are discussed below. Various factors that create barriers in the choice process will be discussed in detail in the next chapter.

4.1.1 Sources of Information and Rationales for Considerations

Gaining information about available educational and professional opportunities is not a natural experience for students in Pakistan mainly because of the absence of career guidance services in schools and colleges. Students on the whole get orientations and information about professional education and careers from ‘informal’ sources (Foskett and Hesketh, 1997; Taylor, 1992) which act as ‘choice initiators’ or ‘catalysts’ that initiate thinking (Foskett and Hesketh, 1997). The ideas provided by these sources are then matured in the later stages of the choice process.

4.1.1.1 Personal Fascination

Personal experiences in childhood trigger fascination among young people which initiates their choice process. The developmental models highlighted that fascination based on emotions in the early years of a person’s life become the starting point of their occupational choices (Ginzberg et al. 1951). Childhood experiences and fascination

relating to nature instigate ideas about studying nature while emotional attachments allow ‘considerations’ to take place. As Noor explained:

I feel great when I touch the soil. It is similar to the feeling when I was a child, like when we used to play with soil, I always enjoyed it... and used to explore it... and among other sciences, in botany you can actually find out what is the reason behind everything...

(F/Noor, F.Sc. Islamabad)

For agriculture students the close interaction with nature, either while playing or while working on the farms with family members, kindles ideas to gain education and develop a career in this field. The following examples exhibit how childhood experiences instigate interest among students and provide an idea about studying agriculture which ultimately starts the choice process.

I liked studying plants. I even had my own garden at home where I had grown all types of flowers. I made my home very beautiful with flowers and trees and since childhood, these fascinated me... I liked plants but did not know much about them. I just used to grow them out of my own interest. I wanted to know more about plants and their types etc.

(M/Farhan, Agri.1, PMAS-AAUR)

I like gardening. My father had a farmhouse which had lots of plants and trees etc. Because of gardening at my father’s farmhouse, I am fond of plants. I have personally grown many plants on our farm and studying plants interests me.

(M/Watni, Agri.1, UAF)

In the cases above, a hobby (gardening) has developed fantasies, which led to considerations. In addition to that, working and living on the farms incline young people to opt for the agriculture field of study (Wildman and Torris, 2001). Sentimental childhood fascination has the potential to guide future decisions and successfully identifying personal professional interests and following those interests can potentially lead to active career exploration, pleasure and contentment.

4.1.1.2 Family

The role of parents in initiating the educational and occupational choices of students has been proven (e.g. Foskett and Hesketh, 1997) and is well established ‘at least at the stage of initiating or discussing choices’ (White, 2007a: 22). Family provides information, skills, and values that contribute to the occupational choices of students (Super, 1953) and is among prospective ‘choice influencers’ (Foskett and Hemsley-Brown, 2001).

In Pakistan, family members serve as one of the major sources of information about the variety of options available at the higher education level. The data revealed that various family members played a key role in communicating information about agriculture as a plausible career option for students. Fehmeed (Agri. 1, UAF) belonging to a village and family related with the agriculture sector recalled that during childhood he used to actively work in the fields with his father and family. His father always motivated him to become an ‘*agrarian*’ in future and this particular idea became the starting point of his choice process.

Beside parents, siblings are another source of information that helps students to develop ideas about education and career pathways (Blenkinsop et al. 2006; Payne, 2003; Taylor, 1992). For example, Memoona (Non-Agriculture) herself did not know about agriculture sciences when she had to decide for her higher education. However, she came to know about agriculture sciences when she took admission in M.Sc. Botany. Thus she passed that information to her father and sister which led her sister to study agriculture.

Extended family members, their knowledge, expertise and advice are also important sources of information and instigating interest (Altman, 1997). Anum's (Agri.1, UAF) grandfather, decades ago, graduated from UAF. His regard for the university and belief in the great value of the degree brought the desire that at least one of his children should follow his legacy by studying from UAF ('reflection effect' by Gorard, 1997) which none of his offspring did. When Anum started thinking about subject choice in the 9th grade, her grandmother suggested agriculture. The idea of studying agriculture sounded interesting to her. Anum was surprised at such a novel suggestion from an illiterate woman, and she discovered her grandfather's story. It is noteworthy that the girl never interacted with her grandfather as he died when she was an infant. However, the information and idea of studying agriculture that came from the generation before her parents proved a starting point in her choice process.

The idea of studying agriculture sometimes comes directly in the form of information like in the cases above, whereas sometimes students are motivated through indirect intervention and personal observation of their family members. Information thus inherently comes with motivations for considerations. When students closely observe

agriculture professionals and their success, it motivates them to consider agriculture as a career option for themselves and provide them rationales for choosing agriculture sciences. Examples below exemplify this.

I heard about Agriculture University from my uncle and seniors. I also felt that my future would be secure in agriculture because of my uncle. My uncle is a professional agrarian. He frequently visits other countries. He used to buy seeds from different countries at reasonable rates and then cultivate them for the purpose of seed production on his own land. So I was very inspired by him.

(M/Ahsan, Agri.4, UAF)

I applied here only due to my personal interest in studying agriculture. My uncle is an agriculturist; a cousin did a B.Sc. Hons. from here 6-7 years ago and my brother also took admission in agriculture. So I was inspired by all of them and thought of studying agriculture myself.

(F/Amber, Agri.1, PMAS-AAUR)

My relative's friend was an agriculture officer and very successful. I was inspired by him and made up my mind about agriculture. I was also impressed by his life style and personality. My uncle also got inspiration from me and he enrolled his son here in pre-agriculture too.

(M/Hlaya, Agri.1, UAF)

These students clearly recalled the success of agriculture graduates providing rationales for inspirations which negates Ginzberg *et al.* (1951) stance that choices do not have any authentic connection with the real world in the early stages of the choice process and weaken Foskett and Hemsley-Brown (2001) claim that choices have non-utilitarian aspects at the initial stage of the choice process. Whereas the data revealed that students are inspired by the professional success of agrarians, aspire to have an equally rewarding career in agriculture and thus consider the option.

4.1.1.3 Community and Friends

Like family members, local community ties are also an important informal source of information assuring the potential of agriculture sciences. For example, Imran belonged to a small rural area and had close ties with his local community. When enquired where he obtained the information about agriculture sciences, he replied that besides his cousin:

This (university) is very famous in our area because many people from our area are studying over here, in this University and in Faisalabad University...

(M/Imran, Agri.1, PMAS-AAUR)

The role of the community in providing information about agriculture studies is not limited to rural students only. An urban student also magnifies the role of an individual's social circle in providing basic yet prompting and interesting information about studying agriculture. Seher's father was an agriculture scientist and she lived in a residential colony made for the employees of Agriculture Research Institute. Thus from her neighbourhood and community, she acquired information early in her life which became the basis of her decision to study agriculture.

A man should live in an educated environment. Then he can acquire maximum information. If your social circle is educated, you can learn more.... I used to live with scientists and have developed interest in the research field since my childhood. My major source of information is my social circle... I think if someone does not have an educated social circle that means he cannot develop vision.

(F/Seher, Agri.1, PMAS-AAUR)

Friends are important stakeholders of higher education known to students. Interaction with friends who hold knowledge about agriculture education, universities and

occupational ventures in agriculture, provide students with information, which in turn gives them good reasons, and rationales for considering the agricultural field of study. A student recalled

When I was in F.Sc, few of my friends and seniors took admission in this university. Then I came to know about agriculture. They used to tell me the benefits and job opportunities after studying agriculture. Then I told my parents that there is another field of study which is open to me and I also wanted to consider it.

(F/Asma, Agri.1, UAF)

Foskett and Hemsley-Brown (2001) believe that in the beginning of the choice process, the pre-conceptions of career pathways among children develop due to 'peer pressure'. Blenkinsop et al. (2006) also explored the influence of peer pressure (positive and negative) on students. However, the respondents in the study did not comply with peer pressure; rather the findings concurred with the findings of Payne (2003), Mangan et al. (2000), Ball and Vincent (1998), Macrae et al. (1996) and Taylor (1992) that many students use friends as a source of information. Baker et al. (2011) noted that lack of awareness about careers in agriculture among students and their friends can prove detrimental for the educational and career choices among young people. If friends hold knowledge, it is most likely that they will share it with other friends providing them with information that is crucial to initiate the choice process. When students were enquired about their initial sources of information that gave them ideas about higher education, many identified friends as the prime source:

From friends and from parents, through discussion we come to know what options we have...

(F/Mishayel, F.Sc. Islamabad)

My friends were my basic source of information.

(M/Awais, Agri.1, UAF)

I came to know about agriculture after F.Sc. from my friends and fellow students.

(M/Sadaqain, Agri.1, UAF)

I got information from my senior academy friends. We used to frequently discuss matters with them and get information.

(M/Ali, Agri.4, UAF)

The findings confirm the importance of ‘hot knowledge’ and that students tend to rely heavily on the ‘grapevine’ and believe that information coming from family, friends and fellow students is more credible, honest and trustworthy (Ball and Vincent, 1998). However, it is also important to remember that there are not many sources of ‘cold knowledge’ in Pakistan. Although students were also enquired about the role of their school and media at the stage of initiating ideas about higher education, the data suggests that these have an insignificant role in initiating the choice process of agriculture students due to unavailability of career information coming from other means. For this reason as well, students rely more on ‘hot knowledge’ at the stage of starting to think about agriculture as a prospective future option.

Furthermore, the sources of information and motivation to study agriculture discussed above have one common theme: information about agriculture education and professions does not flow from any other significant source besides the one directly related with this profession in Pakistan. Agriculture students mainly begin their choice process after direct interaction with agriculture related activities, agriculture graduates or people related to the agriculture profession. Unlike the respondents of Scott and

Lavergne (2004), the role of influential people was highly regarded by the respondents in the current study while considering studying agriculture sciences.

These findings give strength to Jones and Larke (2003) recommendation that increased awareness about job opportunities within the agriculture sector and interaction with professionals and leaders of the agriculture sector can prove fruitful for students' educational and occupational choice process. A clear indication arises that there is a shortage of alternative means of disseminating information or ideas about agriculture education and careers in Pakistan. Thus encouraging students to consider agriculture sciences for higher education demands diverse sources of information rather than relying merely on agriculture professionals and graduates.

4.1.2 Time of Plantation

Predominantly students tend to reflect on their future academic and vocational preferences during childhood. Even if students do not make firm decisions about their future in the early years, they at least tend to discard a few options (Payne, 2003). Students develop 'long-standing ideas' and preconceptions about their educational or institutional priorities very early in their lives which later direct choices (Hemsley-Brown, 1999).

However, students do not ruminate on education and career choices only in the early years of their lives. There were cases where, for the first time, students pondered over their future academic and vocational pathways when they had to decide among arts or science groups in the ninth grade. Moreover, some students delayed contemplating on their future career until their college life. A small minority even started thinking about

higher education after HSE examinations. Thus one cannot conclude that all students start their choice process early in their life.

However, this does not imply that time factor does not matter in the choice process. The sooner the student starts thinking about his preferences for higher education and career, the more time he has to spend on the next stage of the choice process. Early speculations help in calculating the outcomes of choices over a reasonable period, whereas students who are late in starting to think about their priorities for higher education and careers face considerable time and resource constraints at the next stage. Those who initiate their choice process early in their life find it comparatively easier to progress smoothly from one stage to another. This stage and the time of starting the choice process will continue to reflect on the subsequent stages of the choice process which is discussed later in the chapter.

4.2 Sprouting Roots

After sowing the seed, the farmer steps into the second stage of 'sprouting roots'. This stage involves active engagement on the part of the farmer to nourish his seed with relevant and sufficient nutrition in order to develop strong firm roots. The farmer represents the student and the seed represents the initial educational and occupational aspirations that need nutrition of information in order to mature and grow. These include information about eligibility criteria, universities, time of admissions, hostel facilities, scope of the subject and career prospects in agriculture sector.

However, it is not the mere efforts of the farmer, which contribute to the development of the roots. The richness of the land where the seed is sown also impacts on the

development process. If the soil is fertile and rich in nutrients (which the seed requires) then the roots will naturally develop whereas infertile land will increase the farmer's responsibility if he desires strong roots. Soil represents a student's social life and the nutrition from the soil represents natural flow of information about the subject of interest and preferred career.

Students who develop a profound level of information at this stage are able to make well-informed and calculated decisions in the upcoming stages of their choice process. While searching for future possibilities, students come closer to refine their occupational aspirations (Furlong and Cartmel, 1995: 361-362). The role of both, the student and his social circle, in strengthening their ideas of studying agriculture sciences at the degree level and pursuing career in agriculture sector are discussed below.

4.2.1 Role of the Farmer

Information gained in the first stage is mostly partial and not detailed enough for students to move forward in the choice process. Students feel that they need more information to decide whether to study agriculture or not and compare its pros and cons with other available alternatives. Batool, an agriculture professional, recalled that she intensely felt this need and then progressed on to the second stage of the choice process. Her love for gardening and inspiration from a forest officer living in her neighbourhood started her choice process. However, she did not know how to become a forest officer.

In fact, gardening and harvesting are my hobbies. Since childhood, I had an interest in growing plants and gardening. I had always been curious about how people become forest officers and what degree they hold... I wanted to become one but the question was how to become one.

(F/Batool, Agriculture Alumnus)

The second stage exhibits similarity to the ‘refined search stage’ presented by Hemsley-Brown (1999) while explaining college choices of young people. Students who wish to pursue higher education in agriculture sciences in Pakistan also actively search for information and evidence that can help them in making their upcoming decisions. However, the methods of collecting information by Pakistani students are considerably different. There are no careers counselling sessions in schools or colleges, neither do agriculture universities hold Open Days. The range of promotional materials circulated by agriculture universities is also limited in Pakistan.

University prospectuses are an important and readily available source of information but in Pakistan, students have to purchase them. Thus, many students do not purchase a wide variety of prospectuses. The official websites of universities do have online versions of prospectuses, but access to internet and browsing facilities is limited in Pakistan. Especially in the rural areas, few households own computers, and even those who do, internet facilities are not excellent. Therefore, personal will and motivation of the students play a vital role. They have to act out on their own and use their abilities, competence and available resources to ensure that they base their decision on accurate and sufficient information.

The deficiency of formal sources of information is reflected in the interview extracts where students express that they collected information from ‘*here and there*’.

I personally collected information about bio-technology from here and there and then I came to know that it is a good field. Then I decided firmly that this is a good field and that I would do F.Sc. and B. Sc.

(F/Addela, F.Sc. Pre-Agriculture)

I collected information from the internet, prospectus and from here and there. Whenever I met anyone from agriculture, I used to enquire about this field and get information.

(M/Fehmeed, Agri.1, UAF)

Beside agriculture, students collect information about other available options in order to make a well-informed decision. An agriculture student stated how she actively engaged in seeking information from various informal sources.

I enquired from different people in different fields about what subjects they were studying... Before taking admission in Agriculture University, I visited a girl who was studying in the third year of agriculture and asked about the courses she has studied. After collecting information from multiple sources I found this field suitable. Still I applied to different universities and colleges. When I got admission here I preferred this... Every Sunday I used to study the full newspaper to know what is new in the educational sector. Moreover, discussions with my friends and seniors also gave me a lot of information.

(F/Seher, Agri.1, PMAS-AAUR)

Once again, the role of schools appeared passive in increasing detailed information about upcoming educational transitions. This was mainly because in Pakistani ‘educational system there is no trend of guidance and career counselling’ (M/Ahmed, Agri4, PMAS-AAUR). Also because ‘in F.Sc. there are subjects related to every field, but there is no subject on agriculture’ and due to this, students ‘never know about agriculture’ (F/Mishayel, F.Sc).

While highlighting the issues concerning lack of interest among students to pursue higher education in agriculture sciences, Umeia (Non-Agriculture) also highlighted these:

Students do not know about agriculture during school and college life. In Matriculation they don't teach agriculture as a separate subject rather the contents are covered very briefly in other modules.

(F/Umeia, Non-Agriculture)

In such circumstances, students need strong will and comparatively 'stiff' agency to overcome the 'standard' structural barriers. Students who actively want to engage in their choice process and make a planned decision have to do an effort to substantiate that they are making the right choices. Students' inquisitive and informal discussions with teachers significantly increase information about available options (Maychell and Evans, 1998). Since teachers are relatively more informed about the education sector, students tend to trust them more as "the source of information is from an insider who has no vested interest... and whose judgement they can trust because they know them personally" (Hodkinson, 1995: 3).

Natasha below discusses in detail how her teachers identified her academic strength in biology and gave her vision about possible available options in the field besides MBBS:

My school and college teachers guided me a lot. They said you are good in biology and should excel in this field. They told me MBBS has limited scope and I should not get disheartened if I should not get admission to medicine college but rather study some other field in science besides MBBS... they emphasized the research field... that we should join the research sector or other fields like bio technology and genetics etc. After gaining familiarity about genetics, biotechnology and research work, I decided to join the agriculture field of study. I understood that biology students could do this easily so I decided I should do it...

(F/Natasha, Agri.1, PMAS-AAUR)

All teachers are not equally regarded and approached by the students. Students consult those teachers whom they believe to be trustworthy, knowledgeable and “perceived to be approachable, accessible and supportive” (Taylor, 1992: 315). For example, when Aqsa (Agri. 1, UAF) enquired her teachers about future academic options, her chemistry teacher told her about B-Pharmacy and B.Sc. after which she could take the civil service examination. At the same time, her English teacher advised her to join an Agriculture University. However, she chose the option proposed by the latter because she ‘trusted’ him more and believed that he suggested agriculture ‘*with full honesty*’.

Many students in Pakistan (studying science at the secondary and higher secondary level) join tuition centres to boost their academic scores. Students also make use of these opportunities and solicit potential options with academy teachers. Sajid’s excerpt below shows how he approached his teacher and received detailed information.

I went to my teacher and he said “If you had the choice of having a headmaster’s chair or a clerk beneath him, what will you choose?” I replied that it depends upon the interest of the person whether he likes a stronger position or not. He said “if you want a strong position in life, don’t choose I.Com or ICS, choose bio”. So that is why I chose pre-medicine. He told me about 16 fields which I can join after pre-medicine. We can study geography, agriculture, botany then there is zoology, psychology...He told me that the main difference in pre-medicine and pre-engineering is that I cannot go in to engineering colleges when I do pre-medicine; all other options will be easily available...

(M/Sajid, F.Sc.)

The majority of information sources at this stage are informal and they tend to have an element of judgment within them. While interacting and looking for details students do not receive information alone, rather they come across ‘suggestions’ and flavoured

responses. In the example above, the teacher favoured biological sciences over engineering and then further gave details within biological sciences. In the excerpt below, Nayab recalls that while she was searching for information, many people she came across encouraged her to study agriculture. Thus, information combined with encouragement strengthened her plans:

Looking at prospectuses, I came to know about the fields which were open for me after F.Sc. I also browsed the internet about the universities. People around give me information... my friend's aunt is teaching in an Agriculture University. She recommended that I should submit my (admission) form to Arid Agriculture University and that it has very bright prospects... Otherwise I really didn't know about Arid University let alone study in it.

(F/Nayab, Agri.1, PMAS-AAUR)

Students above demonstrated active information seeking behaviour, however not all students are equally inquisitive. Although willingness to explore and search for information subsequently impact career choices, students have considerable variation among themselves in exploratory activities (Easters and McCulloh, 2008). Foskett and Hemsley-Brown (2001) implicitly state that not all choosers enter and experience the 'refined search stage'. It is this stage where students' will can play a crucial role in bringing them closer towards developing their knowledge about their academic options.

Despite the importance of engaging in the choice process at this stage, some students remain passive and unconcerned about seeking complete information (Hodkinson et al. 1996), and are averse and unable to foresee the long term (Ball et al. 2000). The excerpt below shows how Tanveer did not actively search for information.

In our village there were only teachers who used to tell a little bit about joining the medicine field. At that time the level of discussion and information was very low. I have never discussed it with any one, not even with my cousins.

(M/Tanveer, F.Sc.)

The reasons behind the failure to collect information can vary. Some students do not realize the importance of this stage (like the one above). In such cases, the ‘soft’ version of agency gets extremely influenced even by ‘standard’ structure, resulting in low level of information. In addition to this, there are also those who have to face ‘stiff’ structure on the face of which they fail to gain appropriate information regarding available education and career options. Accessibility to information for such students become subject to structural limitations. This implies that even if two students have similar desires to gain information about professional pathways, the type of structure they face can produce varying results.

Students who belong to small villages, and live away from big cities (the cities where the agriculture universities are situated), find it very difficult to gain relevant information or even visit the university. In small villages, teachers are also not well informed and the student’s social circle mostly comprises of uneducated people. On the other hand, an urban student living in the city or in suburban area can visit universities and talk to other students or teachers. Moreover, students who belong to the lower-middle class might be unable to afford the ‘expense’ of getting the information e.g. paying for prospectuses, internet cafe for browsing information online, shortage of money to travel to various cities for visiting universities etc. Despite their urge to collect information and will to practise agency, such students may fail to broaden their

knowledge due to structural limitations. This indicates that individual agency cannot be practised uniformly in different structural settings.

An example of a rural student testifies this phenomenon. Since childhood, he was fond of studying and his parents motivated him to complete higher education. However, his parents, family and friends in the village were uneducated and lacked information about higher education. Even his teachers could not help him much. Since he lived in a small village, he had limited access to print or electronic media. During the interview, he recalled how frustrated he felt during his matriculation, as he could not seek information about future academic pathways. He expressed his anger towards his elder brother for not helping him during that stage because he believed that his brother could have brought him newspapers from city where he used to go for wages, from which he could extract information about higher education, courses and institutes etc.

Ultimately, failure to gain information about educational and occupational choices significantly impact on the whole choice process. Such students face difficulties while making decisions about professional qualifications. The notion is similar to the weak development of roots and malnutrition of the seed affecting its ability to grow into a strong healthy sprout.

For example, Zahid expressed that it took him more than a semester to understand his degree and career pathway because he lacked information about the agriculture field of study at the time of admission.

When I joined Agriculture University all my friends asked why I chose to study there. Are you going to be a farmer? At that time, I did not even have any answer

to their questions. I really did not have any information about this field. When I progressed to the second semester then I was satisfied and relieved that it really is a good field.

(M/Zahid, Agri.4, PMAS-AAUR)

4.2.2 Type of Soil

The fertility of the soil has natural effects on sprouting roots. Some farmers have fertile soil that naturally provides nutrition to the seed enabling it to grow roots and thus the seed does not require a substantial supply of additional fertilizers from the farmer. For others, infertile soil does not contribute anything to the stage of developing roots and the farmer has to work extra hard to nurture the seed.

The soil represents a student's life whereas the fertility reflects relevant information about the individual's educational and occupational choices naturally flowing in his or her life. It does not imply that lives of some students are better than the others; rather it means that information about the discipline and career of interest flow effortlessly in their lives. The infertility of the soil represents the lack of information about a particular option of interest coming naturally and effortlessly to the student. For example, if there is a student who wishes to be a doctor and there is plenty of information flowing in his or her life it means the soil is fertile for the seed the farmer has sown and nutrition present in the soil is exactly what is required.

There are so many medicine colleges in Pakistan, everybody is trying to get admission in medicine, and there is a great charm associated with it... therefore medicine doesn't need advertisement.

(F/Noor, F.Sc.)

As mentioned earlier, information about agriculture sciences does not flow naturally in Pakistan's education system. If people and other sources of information are also unable to disseminate details about professional education and possible career opportunities in agriculture, it creates a potential problem. An intermediate student's statement shows that if students are planning on medicine or engineering, they have ample information but when it comes to agriculture education, there are hardly any details widely known:

...there is neither information nor knowledge about the professions in agriculture. But in case of medicine or engineering, we know all about their career opportunities.

(F/Mishayel, F.Sc.)

4.2.2.1 Fertile Land

The natural flow of information about education and career in agriculture to the students who are keen in this discipline allows them to mature their choices without much effort. Again, the most common source of information is family. Educated families, who frequently discuss available professional degrees and prospective careers with their children, naturally develop a knowledge bank among young people. In such cases, students need not make extensive efforts to collect information as their family members have already transmitted significant information.

I got all the information from my sister. When my sister progressed to the fourth semester, and took food technology as her major, she told me that agriculture is a good field.... She helped me in getting admission here in this university. I just came here to take the entry test. My sister fulfilled all the formalities of admission. Otherwise I did not know anything about this university. In other words my sister is my core source of information.

(F/Saba, Agri.1, PMAS-AAUR)

Saba's sister provided detailed information about degree, majors and even helped in the admission process easing her institutional choice. Students whose parents or siblings have studied agriculture or have worked in this profession share their knowledge, which in turn increases their information level, thus requiring less effort and helping them to make an informed decision.

It is not mandatory that such information can only come from immediate family. Since the majority of the rural students migrate to cities for education purposes and live in private hostels or rented accommodation, their interaction with their house mates also increases their information. As Ali was planning to get admission to agriculture after his intermediate, he highlighted how his cousin shared sufficient information about agriculture education. This information in turn strengthened his idea of pursuing career in agriculture:

Basically I have a cousin who is studying agriculture; he is in his sixth semester. We live together in a rented house... Through him I usually get good information regarding the agriculture field. Now he has also chosen his major subjects... agriculture has good scope here, but it has comparatively more scope in developed countries. Thus we can get a job abroad as well.

(M/Ali, F.Sc.)

Another agriculture student expressed in detail how his family and friends gave him considerable information about educational and occupational ventures. Initially he came to know about agriculture education and university from a friend of his elder sister. In the second stage of his choice process, his family and friends contributed in increasing his information without requiring much effort from his side.

Your family background counts a lot. If the family is educated, they discuss among themselves which field is good and which has scope in the future. My family along with family friends were the sources of my information. Actually my maternal family resides in Rawalpindi and they used to tell me about different colleges and universities offering various courses... I knew my options and I purposefully took pre-medicine in F.Sc, leaving me with only two options; MBBS or agriculture.

(M/Ittesab, Agri.4, PMAS-AAUR)

4.2.2.2 Infertile Land

When students do not get information from their social circle, they face difficulty in advancing the choice process. The unavailability of information puts more responsibility on the student to search for answers. If he fails to seek appropriate information and there is no information flowing in his life about his preferred option as well, he is likely to fail to realize his dreams. An example of a student who initially wanted to join the army shows how this lack of information led to failure in his choice process.

I wanted to join army when I was a child...I applied but I was not selected. I couldn't prepare the test properly... my parents knew my passion but they didn't know how to apply for the army. They didn't have the necessary information.

(M/Hashim, Agri.1, PMAS-AAUR)

Similarly for students who wish and plan to study agriculture, lack of information flowing in their lives from different sources e.g. friends, family, society and teachers about agriculture make it difficult for students to develop their aspirations. An intermediate student highlighted the fact that absence of information about agriculture was restraining her from choosing agriculture.

And I must say that we don't see or hear about famous institutes of agriculture so awareness and the knowledge about agriculture are very much limited.

(F/Rida, F.Sc.)

Unlike government school systems, few private schools provide career counselling facilities in Pakistan. Nadia studied at a well-reputed private school and was the only one in the sample who received formal career counselling. When she was questioned about how much she knew about agriculture, she acknowledged with surprise that she was not briefed in detail about agriculture education and profession.

I have heard about agriculture in our career counselling sessions, but what we study in it and what it is all about were not explained to us in detail. The extent of information was very much limited. We were only informed that agriculture is a field of study.

(F/Nadia, F.Sc.)

This can have serious implication on the choice process as students might lose interest to choose agriculture due to insufficient information. The following are two examples of intermediate students. Although they had basic information about this field, because they belonged to rural areas, still they did not intend to choose agriculture because of lack of information.

I do not know much about it and neither do our teachers tell us about this field, I never think about agriculture because I do not know about the scope of the study. Although I am from a village and agricultural area still I don't know much about it.

(M/Tanveer, F.Sc.)

It's just that it is not my choice right now... I do not have much interest in the agriculture field also because I don't have much information about what they teach in agriculture etc... I know at least that in medicine there are subjects like dentistry and surgery.

(M/Zia, F.Sc.)

4.2.3 The Matter of Time

An important connection of this stage with the preceding stage is that the sooner the student experiences the first stage and starts thinking about his future option(s), the earlier he will move on to the second stage to seek and strengthen his ideas with relevant information. However, this does not imply that all students who contemplate on their academic and career goals at an early age will actively search for information. People do not uniformly engage in their career decisions (Brimbrose and Barnes, 2007). Some students had plenty of time during their school or college life, however showed less inquisitive attitude. However, those who made full use of the time and resources and gained detail information were able to 'choose' from available options based on some rationale.

On the other hand, students who are late starters in the choice process have less time to spend on this stage. Information dissemination and searching for relevant details need time. During a short time span, a student might not act energetically or might not be facilitated by his social circle in gaining information about his preference. Both cases will affect his level of information. However, shortage of time does not imply that they will definitely not get sufficient information. Yet again, strong or 'stiff' agency to gain information through utilizing all possible resources (material and social) can potentially maximize levels of information in a 'standard' structural situation.

4.2.4 Sowing Multiple Seeds

While searching for detailed information, students might come across information about a new field of study and start considering it as their future option as well. This stage can potentially lead some students to re-experience the first stage confirming that decision-making is not always a linear process (Hodkinson et al. 1997).

For many students, agriculture was not their first choice (this has been apparent in many examples above). Students, who initially did not plan to study agriculture, came across information regarding this field while searching for available options and this in turn initiated interest in agriculture, enabling them to experience the first stage. Rabia's example below shows that although she knew about her obvious options, while searching for relevant information she came across various fields of study (including bio-genetics that is one of the majors offered in agriculture) and started considering that as well.

I am also searching for different fields within Biology. It is understood that the common options include MBBS, BDS, but I am thinking about Biotechnology and Bio-Genetics as well. I think in future such educational choices will lead to better job opportunities.

(F/Rabia, F.Sc.)

Similarly Natasha, who initially wanted to be a lawyer, developed a keen interest in agriculture while interrogating her brother's tutor and this interest later matured into a decision to study agriculture. Constant interactions with other social actors can potentially change the existing dispositions of a student (Hodkinson, 2008). Her excerpt below shows how she perceived agriculture as an academic option while seeking detail information.

Actually my brother's tutor was studying in Faisalabad University. We used to help him by drawing diagrams for his assignments etc. By looking at his work I developed an interest and asked him in detail what he was doing, what is horticulture, etc? And that's how, for the first time, I came to know about these subjects and their field in detail.

(F/Natasha, Agri.1, PMAS-AAUR)

Students can develop interest in agriculture while searching for information leading to consider multiple options. Whereas some students might simply contemplate multiple options because they do not have firm ideas but rather have 'dispositions' (Hodkinson, 1996) or pre-conceptions (Foskett and Hemsley-Brown, 1999), or because they are uncertain about the success of their initial plan due to structural constraints. Regardless of interest and the level of information about a particular field of study, there are strong chances that academic achievement, degree cost, eligibility criteria and merit will contour the ultimate choice. When students gain detailed information about degree or institutional demands (of other disciplines), they might speculate on their chances of getting admission. Thus they make a hierarchal choice list based on their preferences so that they can opt for the alternative options just in case they are unable to succeed in their first choice.

For many students, this is where agriculture comes in. The majority of the research participants did not have agriculture as their first preference of study (why it was not their first choice is discussed in detail in the next chapter). Even among those who did choose and plan to study agriculture, some of them kept it as their second option.

A few of my friends' brothers were in this university and were studying agriculture...they told me that in medicine there is very tough competition.

Therefore, if someone cannot get admission in medicine, he can get admission in agriculture. It is a good field to study... My first priority was to improve F.Sc. score to try MBBS and then to get admission in agriculture.

(M/Abbas, Agri.1, UAF)

Considering multiple options and collecting information about them save students considerable anxiety if they fail to realize their first preference. Since students who join agriculture mainly come from pre-medical group, many look forward to joining medicine colleges. However, if they fail to secure admission there then their priority list becomes functional and saves them from perplexity. Presented underneath are two examples of such scenarios where students kept multiple back-up options about which they also held necessary information.

If I will not get admission to a medical college, I will join agriculture. Rather than going in some other field I would prefer to be a part of the research sector within agriculture.

(F/Faiza, F.Sc.)

One of my seniors told me that if you don't get admission to MBBS then agriculture is a very good option and I should consider it and get admission on quota seats... That boy also gave me details about agriculture and told me it is better than B.Sc. and Botany and Zoology so I should go for it.

(M/Naeem, Agri.4, UAF)

During fieldwork, numerous incidents highlighted the widely accepted assumption that students who join Agriculture University did not chose to study agriculture. While introducing me to the first year students (PMAS-AAUR) the faculty member smilingly said to the class that I (researcher) was not only looking for students who joined 'accidentally', rather I was also interested to interview those who planned to study

agriculture. Moreover, students recalled that on the orientation day teachers briefed ‘*the scope of the field in detail to satisfy the students*’ (M/Naeem, Agri. 4, UAF) so that they are not ‘*worried about this field*’ (M/Abdullah, Agri. 4, PMAS-AAUR) because many did not join agriculture as their first career choice. In addition to that, many students casually commented that agriculture is considered as ‘*the shelter for shelter-less*’. Meaning that students who cannot get admission in any other professional colleges come to agriculture universities which give them refuge in their state of hopelessness.

4.2.5 Vitality of the Stage

It is crucially important that students gain ample information about agriculture during this stage. The level of information will make a considerable difference as to how and when the next stage will be experienced. Moreover, if students hold insignificant information about the discipline, its scope and other details, there are chances that they will prefer other fields. When an agriculture student whose first choice was medicine was enquired why she did not consider agriculture as her first option she replied:

Maybe if I knew more about this field and its importance then I would have had no craze about medicine.

(F/Sadaf, Agri. 1, PMAS-AAUR)

Other fields of study have an edge over agriculture “*because people don’t have information and knowledge about this field*” (F/Addela, F.Sc.). Thus seeking and gaining information about educational and career options within agriculture is crucially important if students are to be encouraged to ‘choose’ agriculture. An Agriculture student highlighted the importance of information as follows:

I have a suggestion for the government that they should provide information to young students and should hold seminars. Different universities should help students as well. Especially at the college level, students should get information about different fields of study in detail. Students should be encouraged to join the field of their interest; only then can they excel.

(F/Rabia, Agri.4, PMAS-AAUR)

4.3 It is Time to Sprout

The third stage of the choice process entails students to decide on their discipline of higher education based on their preceding preferences and information. This stage is experienced by the students during or right after their HSE when students prepare themselves for taking admission in a degree course. The rationale for highlighting time in the title of the stage is that students who wish to continue education after HSE have to decide within the timeframe because admissions in various educational institutes have deadlines. HSE is one of the most crucial times in the academic lives of students in Pakistan. Students regard this as the ‘*do or die*’ stage of their academic career.

Educational choices (both subject and qualification choices) are predominantly based on vocational rationales (White, 2007: 151). Young people from their childhood believe that education will train them for their vocational life (Cullingford, 2007). The majority of the students at this stage decide upon which profession they wish to join and then make further educational and institutional choices on the basis of that e.g. joining engineering university means a career in engineering; joining medicine college means moving towards medicine profession and the same goes with agriculture.

4.3.1 Connection with the Previous Stages

In order to understand the choice process it is important to understand “the past, from which one has come; the present, in which one currently functions; and the future, toward which one is moving. All three are of indisputable importance, the past shapes the present and the present is the basis for the future” (Super, 1990: 197). The ideas developed in the initial stages give foundations on the basis of which choices are made after HSE. This stage highlights ‘the importance of previous choices in shaping future trajectories’ and the fact that decisions made in the early years of an individual’s life potentially influence post-16 destinations (White, 2007a: 170). Students who considered early on their educational and occupational options and collected considerable information about them were able to decide before the admission. Whereas those who did not give thought to their future academic and vocational paths until HSE faced difficulty in deciding among available alternatives and had less time to collect information about their preferences. These differences are discussed in detail below.

4.3.2 Timely and Healthy Sprout

Students who had interest and gained ample information about agriculture and its prospects feel more confident and practise ‘choice’ in the real sense. Such students decide even before they complete their HSE. Amber’s example shows how she increased her information about agriculture and incorporated her interests with knowledge and then decided during intermediate.

When I started F.Sc., I came to know more about agriculture. I came to know that it is a vast field despite the fact that it is not widely preferred... I thought that since I had interest in it, I should at least study it. Perhaps I will be able to do something better in this field. So I thought that I should study agriculture and I

chose it. During my F.Sc., I made it clear in my mind that I want to study agriculture.

(F/Amber, Agri.1, PMAS-AAUR)

Detailed information about the degree course and institution, etc. allows students to ‘choose’ on the basis of preferable features. An agriculture freshman, Noman, collected information about agriculture education and considering his personal abilities, he made his final decision during intermediate.

Well he told me that this is a very easy degree. It is semester wise and there are 8 semesters in it. The degree is not difficult in comparison to conventional B.Sc... The course contents are very simple. Papers will also be very easy, and that I will face no difficulty in it. As an average student I also preferred this degree because it is easy. So I should join this field.

(M/Noman, Agri.1, PMAS-AAUR)

4.3.3 Choosing Among Multiple Sprouts

Students who consider multiple options in the initial phases of their choice process, search for details and leave their decision pending until they finish HSE. Not all students decide about higher education during intermediate. Some students submit application forms in various colleges and universities to see where they succeed. Meanwhile, they utilize this time to enhance their level of information about higher studies, institutions and career prospects etc. If they qualify for more than one admission, they then once again carefully compare their options.

At this stage students tend to weigh up the outcomes, feasibilities and the ultimate responsibilities of their multiple occupational choices (Ginzberg et al. 1951). They

judge the potential of each of their choice based on their information, their personal preferences and circumstances (Hodkinson et al. 1996). However, this does not imply that students weigh up their options economically or according to technical rationality. The comparisons can be based on many other rationales beside economic benefits. For example, facilities provided by different academic institutions can impact upon a student's choices regarding higher education (Payne, 2003). The following example demonstrates how Rabia considered lab resources before making her final decision. Although her basic interest was in human sciences, she opted to study agriculture after careful comparison.

First of all, in that small town, I wouldn't have the opportunities to flourish. For example in that college there was no equipment in the laboratory and I could not perform any kind of practical work there. Then it occurred to me that if I do conventional B.Sc. from here, I would practically know nothing. Hence, when I do my M.Sc., I will lag behind in my studies. That is when I thought that it will be better to switch now, right away. Agriculture was my fate. Although I like human sciences more than plants and botany, I still feel lucky that I got admission here.

(F/Rabia, Agri.4, PMAS-AAUR)

The assessments by the students and their calculations at this stage reflect White's (2007a) typology of inclusive and exclusive choices. Inclusive choices reflect those patterns of decision-making where students purposefully choose a particular course of action among alternatives for attaining desirable consequences. These desirable consequences can have any form, e.g. Seher (Argi. 1, PMAS-AAUR) chose agriculture because she wanted to study in a semester system rather than an annual system as the work and study load is divided in a semester system similar to the preferences of Noman above.

Another example is of Zahid. During school life Zahid *Hifz Quran* on the wish of his parents. He believed that after memorising *Quran-e-Pak*, he could study only Islamic Studies. After searching for options, he came to know about various vocational ventures open to him. Since he had an interest in biology and wanted to contribute to his rural area since childhood, he chose agriculture.

I never wanted to be a doctor; neither had I wanted to join the banking field... I absolutely decided that I will study agriculture.

(M/Hafiz Zahid, Agri. 1, PMAS-AAUR)

On the contrary, exclusive choices (reflecting similarity with negative choices by Gorard, 1997) start from the other way around, i.e. students first avoids particular options because of unwanted consequences. All the alternatives are then structured; as in which options are simply undesired, and out of the rest, which can be most appropriate (White, 2007a: 86). Sumayya below expresses how she evaluated challenges associated with different professions, excluded the option she did not want, and then made her decision.

When you study in the medicine field, you do research all the time, remain busy in studies and do not give much time to your home and family. My teachers were right in saying that when you are studying medicine you have to leave your home and parents and have to go long distances. That is why I chose agriculture and it works fine with me. I feel quite satisfied now.

(F/Sumayya, Agri.1, PMAS-AAUR)

Whereas Awais excluded some options:

Because I do not like accounting that is why I did not chose B.Com.

(M/Awais, Agri. 1, UAF)

4.3.4 Shifts in Choices

There are two approaches that students mainly adopt when they become sceptical about their first choices. One has been discussed above where students consider multiple options. The second approach is when students abandon their initial plans and contemplate on new ideas altogether. The process of educational and career decisions is subject to occasional ‘turning points’ (Hodkinson et al. 1996; Strauss 1962). When students recognize that they will be unable to realize their first choice, they divert their educational and career goals to a comparatively more realistic alternative. This course of action is different from having multiple preferences. A shift means that the student will stop thinking and working towards his initial plan and contemplate on a completely new choice. Many students initially planned to join the medicine field, however, when they realized that the ‘stiff’ structural limitations in the form of eligibility criteria, degree cost and admission merit will obstruct their choice, they shifted their career goals. A few examples are as follows:

During first year exams, because of less exam preparation, I was aware that I would not be able to secure a place in the medicine college. So I left all hopes of the medical field and decided to join agriculture.

(M/Abbas, Agri.1, UAF)

I used to say in my childhood that I want to be a doctor but in F.Sc. my thoughts changed due to my first year result. I was disheartened and thought about leaving this field. Many of my friends are repeating and improving their marks but I took agriculture...

(F/Nayab, Agri. 1, PMAS-AAUR)

Another structural barrier faced by students is the change in the medium of instruction at the HSE level. School education in Pakistan is delivered in multiple languages (see

Section 1.3.1). In rural areas, the majority of the primary and secondary schools deliver education in Urdu, while at the HSE level, science subjects are taught in English (in the majority of BISE). Nasir (2005) also found that studying from English medium schools have lasting effects on the job prospects in Pakistan. This shift brings an immense challenge to students' academic achievement.

When I was in F.Sc., I secured low marks in the first year because of the shift in the medium of instruction (Urdu to English). I changed my aim when I realized that with these marks I could not secure admission to a medical college. Then I decided to study agriculture.

(F/Tayyaba, Agri.1, UAF)

Beside academic achievements, a student's circumstances also have the potential to diverge their initial choices. An agriculture student recalled how she got admission in F.Sc. Pre-Medical due to the unavailability of Political Science in her hometown college, which was her first choice. Since her family did not allow her to study in another town, she opted for Pre-Medical. During her studies, she realized that getting admission in medicine colleges was implausible due to her marks. Furthermore, she dropped the idea also because medicine colleges are expensive in Pakistan and it would place a financial burden on her family. Thus, her awareness about her own capabilities and circumstances lead to a shift in her choice.

In the second year I stopped thinking about medicine due to the aforementioned reason, and the second reason was my financial issue; therefore I stopped thinking about the medicine field. Our financial condition was not good as my family was building a house and we had to spend money on my sister's wedding as well. I could not join medical college because they are too expensive.

(F/Tabassum, Agri.4, PMAS-AAUR)

Higher education in Pakistan comes with a price tag. Not every student can bear the cost of higher education and such barriers can restrict choices (Swift, 2009). Financial constraints can potentially lead to shifts in educational and occupational choices. Similar to the story above, Zahid recalled how he changed his mind due to financial issues.

Personally I wished to get admission in engineering... I secured admission in Air University but their fee was too high.... At that time my sister was also studying in Quiad-e-Azam University and her fee was also too high. My father wanted me to get admission in Air University. He said that he would somehow manage the fee but I knew that it was very difficult for him to meet the expenses, so I left that option. I told my father that I would get admission in Arid University. I got admission here on a self-finance basis.... As it was affordable for my family, I chose to study here.

(M/Zahid, Agri.4, PMAS-AAUR)

Although structural forces were more prominent in shifting students' choices, personal attributes emerged as a distinct theme leading to shifts in choices. As Hodkinson (1998) and Hodkinson et al. (1996) explained; career decision making is sometimes indefinite because people might hold false perceptions about their career choices in the beginning of the process. Students may realize with the passage of time and experience that they wish to discontinue with their earlier preferences because it does not correspond with their personality. This should not be perceived as failure of choices, rather people might learn that their first choices are not apposite for them. A few examples of self-realization leading to shifts are as follows:

I did not want to be a doctor because I came to know that I could not be one because I can't see blood and wounds etc. So I left the idea of joining this field. I felt that I'm not fit for this (medicine) field.

(M/Saddaqain, Agri.1, UAF)

I saw a few murders in my life due to which I realized I was unable to see blood in front of my eyes. That is why I got disheartened about medicine because in medicine they do operations and there is all that blood, so that is why I lost interest in medicine.

(M/Farhan, Agri.1, PMAS-AAUR)

I was very confused about what I should study. I was confused that I wanted to become a doctor but my attraction was towards plants. Then I decided that my destiny is in agriculture and I have been attracted towards these things since my childhood. I asked myself why I wanted to do MBBS and why was I thinking that I should become a doctor? I concluded that because I was 'told' that I should become a doctor that is why I made up my mind. But then I said that I have an attraction towards plants so why not study plants... then I firmly decided to study agriculture.

(F/Amber, Agri1, PMAS-AAUR)

4.3.5 The Matter of Time

Time is highlighted in the title of the stage to emphasise the importance of the season. Regardless of the strength of the roots, if the sprout does not bud this season, then it will have to wait for the next season. Can the farmer afford to have no sprout this season? Can he wait for his seed to develop its roots and bud a sprout next season? Is not it better that he just digs it out and sows another seed, which has the potential to grow within the time span he has?

The matter of time becomes a crucial element at this stage. If students do not pass medicine or engineering entry test, they will have to wait for another academic year until the next admissions start. Similarly studying an additional subject at the HSE level appears as ‘*losing one year*’ of academic life. The phenomenon has emerged as a strong rationale for many students to shift from their first choice. Students whose first choice was not agriculture, yet they decided to study agriculture, stated that spending additional years to get admission in medicine college was not worth considering. Saba expressed that when she failed to enter Medical College, she opted for her second choice (agriculture) because:

If I wasted one year, it will not guarantee that the merit will remain static; it will be rising with each passing year.

(F/Saba, Agri.1, PMAS-AAUR)

Another student expressed similar concerns while narrating her shift to agriculture:

... if I had waited for the result of my medicine entry test, and if I had not been able to pass it, nor having applied in any other university, then I would have wasted one year of my academic life. I didn't want to waste a whole year and my father was very particular about it as well. He does not like any gaps at studies. Thus, I appeared at the agriculture university entry test.

(F/Sumayya, Agri.1, PMAS-AAUR)

Maria (Agri.4, UAF) also identified a similar rationale for the shift in her choice. Her father was of the opinion that ‘*if you could not do it in the first attempt you will not be able to do it again*’ and thus insisted that she continue her studies in any other field of interest because he did not want her to waste an academic year. Thus the choice students make at this stage can be either the one which they preferred most, it could be

their second option or totally new notions towards which they have transferred.

4.3.6 Sprout Budding from Feeble Roots

As mentioned earlier, not all students consider multiple options for them. Neither it is mandatory that those who do will have enough time or resources to gather relevant information about each one of them. Many students join agriculture sciences with inadequate information about career opportunities in agriculture (Esters, 2008). The role of the initial two stages magnifies their importance at this stage. The pressure of academic achievement combined with the pressures of decision-making about higher education troubles such students throughout this stage. A student reflects on the feelings of such students in the excerpt below:

Students always feel confused in intermediate. If they secure fewer marks in first year, the whole second year passes by in depression. They cannot concentrate on studies properly. They are always double minded. They can't think properly about which field they should choose, and what should be the second option for them. They need a lot of guidance at that level.

(F/Nayab, Agri.1, PMAS, AAUR)

Students with insignificant information about agriculture options find themselves in a contrasting situation from those who hold detailed information. Such students enter agriculture universities with a vacant mindset. They do not know what educational experience lie ahead of them and on to which professional pathway they have stepped. An agriculture post-graduate explained the way students with inadequate information decide about studying agriculture at this stage. He came to know about the agriculture field through a friend of his mother. Before joining Agriculture University, he was studying for Bachelor of Engineering. Due to some political riots, his whole class was

terminated from university. He never thought about studying agriculture neither collected any information in this regard. At this stage, how he decided to study agriculture can be well understood from his statements:

Then one day while I was looking at a newspaper, there was an advertisement of agriculture. So I thought... why not apply for this? There was no one in my family who knew about it... I had no idea... I knew nothing. When I reached D. I. Khan I knew nothing. I stayed there and gave my entry test, and while I was travelling back after taking the entry test, I had no idea what I was getting into myself. The only thing going on in my mind was that I wanted to save my skin and did not want anyone to say that I didn't get admission anywhere.

(M/Tahir, Agriculture Alumnus)

Another agriculture alumnus expressed the importance of this stage and its connection with the earlier two stages. This student did not plan to join Agriculture University and his decision was based on limited information. Throughout his academic career at the university, he could not secure good marks. At the time of interview, he was jobless and searching for one. He felt dissatisfied with his degree and its career prospects. According to him, he made a bad choice and he referred back to this stage as the start of his turbulent career:

It was the time when I was immature and perhaps that was the foundation of my flop career. I dropped yet another paper (in HSE). Next year I appeared in all the papers and practical (examinations) I had failed and secured 650 marks. Then I came to know that with fewer marks I could not join Medical College. At that time I did not understand what to do now? My brother did a diploma meanwhile and got admission in MCS in Rawalpindi... Then I tried and applied in Arid Agriculture University for BCS and B.Sc. Hons. Agriculture and I secured admission only in B.Sc. Hons. Agriculture.

(M/Nabeel, Agriculture Alumnus)

Such indecisive outlook is not in favour of the whole educational and occupational choice process of agriculture students. Those who drift into the field of agriculture sciences without much thought and knowledge threaten their career development as an agriculturist because of their limited vision. They face numerous issues while deciding and getting admission for a professional degree. They put themselves at risk of making a choice that might not be in line with their interests and priorities and might not produce optimum results for them in future. While discussing the level of information of F.Sc. students and how that impacts on their choice process, Ijaz replied,

No, not at all! They just find their career by hit and miss method. They don't know what to do after F.Sc. and because of this most of the students waste their time and spoil their career.

(M/Ijaz, Agri. 4, UAF)

Thus, students who make careful, calculated and informed decisions at this stage and 'choose' to join Agriculture University either as their first or second choice proceeds smoothly to the next stages of the choice process as compared to those who enter agriculture education without any knowledge and deliberation. Students who enter Agriculture University with an imperceptible scheme about their future put their career at risk since they are unaware of their future academic and vocational life. The state of mind and low morale do not vanish once they start studying agriculture, rather the later stages of the choice process will show how these early stages reflect on the whole process.

4.4 Flowering

After a stem buds from the ground, it steadily grows and reaches the stage of ‘Flowering’. Flowering depends both on the nutrition gained from the outside world as well as from the roots which are being nurtured by the farmer side by side. The flower will eventually become the fruit the farmer will reap one day.

The idea represents the stage of major selection during the degree course of agriculture students. Once students join Agriculture University, they study various subjects of agriculture sciences during the first two years. The third year of agriculture undergraduates dawns with yet another important decision of their lives. Students are required to choose one subject as their major which predominantly determines their career path and their professional expertise as an agriculturist. Major selection from 14 available options¹⁹ is crucial because one can only pursue post-graduation in his or her particular major.

It has been revealed by the data that at the time of deciding to study agriculture, students mostly evaluate the overall worth of the degree and its potential scope in the job market rather than precise career goals. The great majority of students do not hold firm ideas about the job market and career pathways when they are at the HSE level (Taylor, 1992; Kelly, 1989; Ryrie, 1981). Once students start studying in an Agriculture University, they start to contemplate on their professional identity as an ‘agrarian’. Prior to explaining the details of this stage, it is important to elaborate on its connection with preceding stages.

¹⁹ See Appendix 1.3

4.4.1 Connection with Previous Stages

This stage comes in a combination with the earlier stages of ‘sowing the seed’ and ‘sprouting roots’. For some students, major selection is not a matter of choice as they are already inclined towards a particular field due to their initial insights and interests. Seher’s case exemplifies how initial insights and interests influence the fourth stage. Since childhood, she lived in the residential colony of the employees of NARC. Her father was an agriculture scientist and frequently took her to his office. The experiences in the first stage of the process considerably shaped her major selection. When enquired whether she had started to think about her major (as she was in her first year) she replied

Yes I have thought about it. I will select food technology or plant breeding and genetics because my father worked in Nayab Labs and he used to take us to laboratories and I have developed a great interest in these (majors) since then.

(F/Seher, Agri.1, PMAS-AAUR)

In addition to the probability that students might choose majors at this stage based on their initial interests, this particular stage also holds a significant connection with the second stage of the process. There lies a probability that students develop an interest in a particular major while seeking information. Some students expressed that they took admission in agriculture sciences only because they were interested in a particular major; e.g. a number of students articulated interest in genetics and for that sole reason they took admission in Agriculture.

Interestingly, such students also revealed that they did not know about the variety of majors in agriculture sciences at the time of admission. Some perceived that they would

only study their preferred major in the university. Rabia (Agri. 4, PMAS-AAUR) recalled that she had an interest in food technology and at the time of admission, thought she will study Food Technology right away. However, she later came to know that her major would be selected and studied after two years. Fawad also did not know much about the variety of majors available within agriculture however he was definite about his major.

Since the beginning I intended to choose plant breeding and genetics and I chose it finally. At the time of admission, I was sure that I was joining the agriculture field just to study PBG. Agriculture was just a path in achieving my destiny.

(M/Fawad, Agri.4, UAF)

Even those students who chose to study agriculture held limited knowledge about the range of majors and specializations within agriculture. Many freshmen hold insignificant information regarding the diversity of the field of agriculture (Forsythe et al. 2010). Farhan expressed that even though he planned to study agriculture, he did not know in detail which majors were available within agriculture. While explaining his experiences since he joined the university he stated:

There is a lot of difference in my thinking since I came here. When I came here I was only interested in plants and flowers but as time passed I came to know about soil, agronomy, plants, fruits and vegetables. Therefore, at first I thought that I will only study about plants but when I came here, I studied many different things.

(M/Farhan, Agri.1, PMAS-AAUR)

The experiences of the earlier stages continue to reflect on this stage for those also who did not develop good understanding and information about agriculture. Such students face considerable difficulties and they spend the initial years of the degree in

understanding what they are studying and where they are heading (ideally this should have been done in the initial stages). Since most of their time and efforts are spent on settling into the degree, they find comparatively less time for developing vision about a right major for themselves. They feel confused and experience difficulty in deciding. Maria, who took admission in agriculture with apparently no detailed information about the degree and the future prospects, recalled how difficult it was for her to decide about her major:

I did not know about majors and in the fourth semester I was worried about what major I should select. I discussed with people around me and asked different students in the university. Every one gave me a different opinion and I was very confused. The majority of the people told me to take food technology and I said that it is difficult to memorize all the terms and figures. Then I asked my father and he said I should go for plant pathology, thus I chose that.

(F/Maria, Agri.4, UAF)

Lack of detailed information during the second stage about the degree course and prospective specializations leads to uncertainty and creates confusion among agriculture students at the stage of major selection. As educational choices share common themes with choices made on other earlier occasions (Foskett and Hemsley-Brown, 2001), the experiences of this stage are influenced by the farmer and the environment together as it was the case in the second stage. The role of each is discussed in detail below.

4.4.2 Role of the Farmer

The farmer's role cannot be ignored in terms of the nutrition and care he provides to his plant. The care and nutrition provided by the farmer symbolises how agriculture students mature their educational and occupational choices through hard work,

academic achievement and personal efforts of gaining additional information about the job market and scope of various majors.

The initial two years of the graduation are the first learning experiences in agriculture sciences for students. Studying all subjects at the introductory level helps students to locate their aptitude, ability and interest. Majority of the first year students in agriculture degree do not have clear ideas of which major they will study and what specialization they will join (Forsythe et al. 2010). Students utilize the opportunity of studying various subjects of agriculture to explore where their interests lie:

Right now, I am in my first semester, as time passes and I learn about more subjects I will come to know in which field I have more interest and then I will choose that area of specialization.

(F/Amber, Agri.1, PMAS-AAUR)

When enquired from another first year student whether she had decided about her major, she replied:

Not yet, but I am thinking about forestry, horticulture and environmental sciences because these are important fields. Horticulture is a very interesting subject, it is related to biology, and right now, this is one of my choices. Maybe later in the fourth semester we will study more subjects and maybe my opinion will change.

(F/Natasha, Agri.1, PMAS-AAUR)

Similarly, Abbas (Agri. 1, UAF) intended to study horticulture as it will allow him to study ‘tissue culture’ in detail which was very interesting for him. At the same time, Omer (Agri. 1, UAF) stated that he would take food technology and not horticulture because he was not very fond of studying botany.

Since students get a closer experience with various subjects and practical work associated with each major, it allows them to make choices according to their professional preferences and personal circumstances. Initial plans also become subject to change due to new knowledge acquired. Batool (Agriculture Alumnus) since childhood wished to become a forest officer and for that sole reason embarked on agriculture education. However, her long-standing occupational aspirations changed due to some early experiences in agriculture education. During a forestry field experiment, she failed to pullout a screw from a log and asked male fellows for help. At that time, she realized that she could not choose a major or occupation where she was dependent on others and was not self-sufficient. Thus, she changed her career aspirations and selected major food technology.

Students' efforts for relevant information play a key role at this stage. Those who planned to study agriculture and aspire to become professional agrarians give due consideration to their major selection and make well-informed decisions.

My focus was on three majors, i.e. food technology, genetics and economics. Then I researched a lot and at the end I took food technology.

(F/Tabassum, Agri.4, PMAS-AAUR)

Besides personal interest and attributes, structural forces in the form of career possibilities within majors were among the salient rationales students adopted while choosing majors. The nature of work, job availability, job locality and monetary rewards all combine together to influence which major to choose within agriculture education (Baker et al. 2011; Rawls et al. 1994). In order to ensure that one is choosing a major which ensures personal as well as vocational success, students attempt to seek

and base their decisions on information about post-degree circumstances. Students utilize maximum available sources of information, both formal and informal, to get an insight about career prospects of different majors. For some students, major selection is solely based on career opportunities (Wildman and Torris, 2001). Waqar below expresses how he considered competition within the market while selecting his major.

Nowadays competition is tough everywhere but I think in agriculture entomology, the competition is less. In our degree, major selection plays a major role in our lives. I chose this major just because the competition in this field is less.

(M/Waqar, Agri.4, PMAS-AAUR)

Hafiza based her choices on the information she gathered about the career openings associated with various majors.

In the fourth semester, I started to think about majors and shortlisted two; plant breeding and genetics and biotechnology... My first preference was PBG and second was bio-technology. I preferred PBG because in biotechnology we get jobs in private companies, in PBG we can get a government job, and there are many jobs in this sector.

(F/Hafiza, Agri.4, UAF)

Some students decide on their major in the initial stages of the choice process (see section 4.4.1). Students other than these actively seek knowledge about various majors and specializations in the initial years of their university education and continue to explore career possibilities (Easters and McCulloh, 2008). This allows them to locate their interests among the available options. While few focus on their interests alone, others attempt to amalgamate their information regarding career prospects with their

personal interests to choose their major. Ahsan below recalls how he made a detailed analysis before finally deciding on his major.

I was not interested in agriculture extension. I was interested in agronomy and soil sciences. I was also interested in the entomology but I feel that collecting insects is very difficult. I am not very good at memorizing things and in plant pathology we have to memorize diseases and that is it. Then I discussed it with my uncle and he recommended a priority list with (first) plant breeding and genetic, (second) soil science, (third) agronomy and (fourth) entomology. As I like mathematics and chemistry, and in agronomy we have to deal with these two subjects, I chose it. There is tough competition in the market and if we select soil sciences as a major then we must do a PhD... I thought that when I complete M.Sc. then I will have to do PhD in soil science, it will take too many years of my life and when will I start my career or job? So I dropped the option of soil sciences, as I didn't want to waste many years of my life. I preferred agronomy... It was my planned choice.

(M/Ahsan, Agri.4, UAF)

Major selection does not solely involve individual agency, information and interests. Structural features considerably influence choices through the potential of occupational opportunities like in the examples above. Secondly, once students submit their preferences, the final decision is based on departmental merit. Students have to put considerable efforts into getting good grades in order to study in the preferred department or to be eligible for multiple majors (so that one can finalize and choose among a few). Thus students who develop a plan and preference about their major simultaneously work hard to ensure that they qualify for their choice.

A few examples of first year students below show how they realized that their academic achievement in the university would shape which major they would finally choose.

I just heard from people about food technology and agronomy and nothing else. When the time comes then I will decide about majors. It all depends on the C.G.P.A.

(F/Sadaf, Agri.1, UAF)

It depends upon my GPA, if my GPA is good then I can study food technology and plant pathology... I have thought about food technology so far... Our teachers say that if somebody has a good GPA, like above 3.5, he can easily get food technology as his major.

(M/Imran, Agri. 1, PMAS-AAUR)

Students who lack interest in the degree and do not invest effort and time in their studies face serious problems during the third year when they do not qualify for the major they wish to pursue. Their 'soft' agency does not survive the 'standard' structural circumstances. As mentioned earlier, students who did not plan to study agriculture yet took admission in agriculture took considerable time in settling down, whereas some find it difficult to internalize the fact that they are to become future agrarians. Such students cannot give due attention to their studies and eventually score low results. This in turn has serious implications at the stage of major selection.

Ghulam is an ideal example. He did not wish to study agriculture yet took admission in it. His academic performance remained low since the beginning of the degree and thus at the time of major selection, he had limited choices. Within the choices he had, he considered the job opportunities and then chose accordingly.

Well at the time of major selection, first of all I had very poor C.G.P.A so I didn't have much choice anyway. The options I had were forestry and extension. I chose extension over forestry. Extension is a subject in agriculture in which we are in

demand. There are jobs and opportunities everywhere so that is why I chose extension.

(M/Ghulam, Agri.4, PMAS-AAUR)

In summary, a student's personal interest, disposition and information combine together to allow him to make choices at this stage. However, individual agency becomes subject to structural influences through the conceptualizations of the market forces as well as merit criteria operated in the universities at the time of major selection. Individuals can choose to what extent the market forces or trends influence their choices depending on how much they consider them. However, the eligibility criteria vividly limit choices especially for those who score low in the beginning or during the degree due to their lack of interest or information.

4.4.3 Role of Environment

The farmer cannot succeed alone in growing the plant if the environment is not conducive. The nutrition which the plant gains from the outside world in terms of sunlight and air, etc. contributes in the development process. Information provided by the university about the professional world, job types and career opportunities facilitates students to make calculated and informed decisions. The information and career advice that students receive from the university reflect the contribution of the student support services in the occupational choice process of agriculture students at this stage.

Since students do not hold detailed information about occupational choices within agriculture profession, the university plays a significant role in developing vision and knowledge about the professional world. Students stated that there was a significant change in their level of information after they joined university. The following few

examples show how students felt this difference.

[Teachers] guide us... they tell us about the scope of different fields within agriculture and their importance so we can succeed... I had many chances of learning and I am still learning a lot. Now I have the proper exposure to this field.

(M/Hlayya, Agri.1, UAF)

In the first semester, teachers guided us and told us about the scope of our field in detail...

(M/Naeem, Agri.4, UAF)

I got lots of information and now I know much more about this field as compared to my first day.

(M/Sial, Agri.4, UAF)

Noticeably, even the students who planned to study agriculture sciences with knowledge and information felt the difference in their vision regarding the field. Like the students above, Ittesab planned to study agriculture after collecting information. However, his awareness regarding professional possibilities within agriculture increased through the university environment.

There is a huge change. When we came from there (school), our mindset and our vision were very narrow... but our vision has enhanced a lot. Even in studies, we only knew that there is a field in agriculture which has these majors among which you have to choose... So when a person comes into university then his exposure increases a great deal. He meets a lot of people over here, his teachers and the people related to his fields, and then there are conferences. When we met them (professionals) then we came to know that this is a vast field and has great scope ahead of it.

(M/Ittesab, Agri.4, PMAS-AAUR)

The role of teachers in guiding students about future endeavours and increasing their level of information was frequently highlighted by students while explaining their major selection. Teachers explicitly influence the choice process through their suggestions and information (Foskett and Hemsley-Brown, 2001). The more the guidance and exposure given at the university level, the more vigilant students' choices will be regarding their major selection and ultimately their occupational choices. Abdullah highlighted the ways in which university teachers contributed to students' choices.

They also tell us the scope of this field. Our future will be bright as well. All the agriculture students will definitely get jobs somewhere. There are many teachers who are very nice and if they have time after delivering their lectures they do guide us about career and future.

(M/Abdullah, Agri.4, PMAS-AAUR)

However, major selection in Faisalabad University emerged as a slightly different scenario as compared to the PMAS-AAUR. Students expressed that teachers in PMAS-AAUR mainly used to boast about their major only and did not guide in an impartial manner. The reason, in their opinion, was that teachers wanted intelligent students to join their major so the merit and academic results of their department will turn out better than the rest. This concurs with the notion presented by Foskett and Hemsley-Brown (2001) that teachers tend to pressurise the students towards particular decisions, which are mainly in the interests of the institution. Ittesab explained the general practice in PMAS-AAUR:

When you are in your 4th semester, teachers from every major teach you and explain to you about their majors because every teacher wants the merit of their department to go higher and good students to join them. This is a fact that

teachers only guide us and informs us in order to make their major popular; they do not guide or tell us that if we chose this major we will come across such kinds of opportunities.

(M/Ittesab, Agri.4, PMAS-AAUR)

Whereas in UAF, formal seminars are held for second year students in which each department gives a presentation about the type of work the department does, the career prospects, the type of jobs available in those majors and so forth. Information from such seminars plays a pivotal role because they provide students with strong rationales for their major choice enabling them to comprehend the occupational opportunities of different majors. A few examples below show how students were assisted by these seminars:

Teachers told us about the importance of all majors in a university seminar... I got inspiration from the seminar. The teacher told us that if we want to start our own business then we should study horticulture. Thus I decided to study horticulture...

(M/Naeem, Agri.4, UAF)

They guided students in career and for further studies as well. They held a seminar and informed us about majors and guided us about what can we do afterwards. They told us about the companies where we can get jobs...

(M/Zahmed, Agri.4, UAF)

For agriculture students, major selection moves them forward from an agrarian to a food technologist, soil scientist or entomologist, etc. Their nature of work and employment sector will also be largely based on the choices they make at this stage. Working in a laboratory, fields, industries or research institutes will significantly depend upon students' major and their professional expertise. How students choose their major

echoes what kind of information and advice they have received from their universities. Considering the fact that the majority of the students do not make thoroughly informed decisions at the time of admission, they need substantial guidance when they make decisions about their career pathway and thus institutional contribution reveals fruitful results.

4.5 Ripen the Fruit

Once the flower blossoms, the process moves further in ripening the fruit. The farmer (student), yet again plays an essential role through his hard work and efforts. Conversely, if proper attention is not given, the fruit will not ripen to its full bloom. Furthermore, the level of commitment and efforts by the farmer at this stage reflect his personal interest as well as an understanding of the market demands.

Once students choose their majors and step into the final years of their study, they move forward towards preparing themselves for the occupational world. Getting good grades, developing skills, searching for a good internship opportunity, developing professional contacts, project experience, all hold great importance in enhancing students' professional expertise and chances of securing a good job in future. At this stage, the 'chooser' actively engages in the process through perceiving future pathways, reflecting on lifestyle ambitioning and estimating net personal gains (Foskett and Hemsley-Brown, 2001).

4.5.1 Connection with the Previous Stages

Earlier choices significantly shape the forthcoming decisions and strongly determine opportunities and possibilities (ibid.). The level of interest and information with which

students joined Agriculture University and how carefully they selected their major all continue to shadow the extent to which students are able to excel in the final years of their agriculture education which will later determine occupational prospects.

A clear difference emerged at this stage between planned choosers and unplanned entrants. Students who timely experienced the earlier stages of the choice process and purposefully chose a particular major based on their occupational aspirations gave substantial attention to their studies. Such students carefully consider the job market conditions, weigh up internship opportunities and plan to study beyond degree education.

Among planned choosers, Hafiza (Agri. 4, UAF) was thinking about M.Phil in order to get a good job. Similarly Naeem (Agri. 4, UAF) who applied solely to Agriculture University after F.Sc. was also planning to do post-graduation as he felt it was a '*must*' in order to get a good job. There were numerous other examples of students who planned to join the agriculture field and during this stage actively proceeded towards developing their expertise for their occupational future.

On the contrary, unplanned entrants who enter the field of agriculture without much thoughtful information faced difficulties in settling and securing good grades during the early years of the degree. Their academic achievement influenced their major selection and their failure to study their preferred major due to departmental merit further demoralized them. This reflected on their commitment and dedication at this stage and eventually occupational opportunities. Nabeel (Agriculture Alumnus) neither preferred nor planned to join agriculture. Since he could not get admission in any other

professional field, he made a compromise by joining this field. He admitted that he neither developed interest nor worked hard and faced numerous issues while completing his degree. Moreover, he did not reflect on his occupational goals as an agrarian and also chose his major (Agronomy) without giving much thought to his career preferences. During the final year, he neither grasped the concepts of agronomy nor secured good grades, though he completed his post-graduation. Thus, students who unwillingly drift into this field face difficulty in attaining optimum results and this in turn ultimately affect their career prospects.

4.5.2 Methods of Ripening the Fruit

Two major themes have emerged from the data highlighting how students develop their expertise in order to come closer to their occupational choices. The first theme relates to the institutional role or program structure that involves engaging in internships at the final year of graduation. The second theme pertains to the individual input and interest to gain education beyond graduation level to enhance professional appeal. Educational choices still cannot be separated from the occupational choices. Students once again take an ‘instrumental approach’ towards education where they consider post-graduation as a means to achieve vocational ends (Payne, 2003).

4.5.2.1 Internships

In the final year of graduation, internship in the respective major is part of compulsory coursework. The purpose of internships is to magnify the professional exposure of agriculture students. Students make use of this opportunity and mature their occupational choices on the basis of their learning and experience. Furthermore, interaction with professionals during internships broadens knowledge about the job

market. Although students are asked their preferences for internship, the ultimate decision is made by the university.

University suggests to us and helps us in getting the internship. We just tell them our preferences. I prefer Ayub labs. Let's see where I will get internship. Companies are in contact with our university and they ask them. Then university selects the students on the basis of the CGPA.

(M/Usman, Agri. 4, UAF)

I am interested in the Ayub research centre because it is a really progressive research centre and I will learn more there. Well it all depends upon the teachers and university as they decide where they send us for internship.

(M/Naeem, Agri. 4, UAF)

The efforts students put into their internships help them to develop skills needed in professional life. The learning experiences during the internship combined with students' knowledge and expertise developed in the university equip them with the necessary skills needed for a successful career. Students attempt to gain experience in those areas where they have already developed interests. Ahsan below expressed how deeply he thought about his upcoming internship placement.

We have different choices like Ayub Research Centre and fertilizer companies. I would prefer to join Anglo Chemical as it is very close to the fertilizer sector and is related to my field. It's also because I have great interest in chemistry. I have intentions to do M.Sc. In future I am planning to do research in soil fertility. I am hoping that in Anglo Chemical I will learn and get more information about this field.

(M/Ahsan, Agri.4, UAF)

Patoki (Agriculture Alumnus) recalled that his internship in water management proved a learning experience for him and his friends. In order to maximize erudition, some students go an extra mile to secure internships in organizations which will ensure good quality work experiences. Internships are a ‘standard’ structural feature in developing professional skills and exposure in students at this stage as the appointment authority is university. However if one wishes to break free from the limitations posed by the ‘standard’ structure, he can do so by practising ‘stiff’ agency. Students can make use of good references to attain the desirable internship. Fawad (Agri. 4, UAF) who always wished to study genetics and for that purpose studied agriculture sciences, ensured that he got an internship in an esteemed organization by using a strong personal reference projecting ‘it was not what you knew but who you knew that mattered’ (Furlong, 1993: 93).

There is an institute, which does not invite internees, but I got an internship there with some strong references. I am really excited that I got internship there and I will learn a lot.

(M/Fawad, Agri. 4, UAF)

Besides learning, good internship experiences can result in enhancing job prospects for students. The choice and preferences for internship in particular organization are subject to market trends. A final year student below expressed how references and the reputation of the company, both of which are forces outside individual’s discretion alone, influence securing internship in an esteemed industry.

I don’t know yet where I will get internship... I want to work in Nestle. Nestle company has a glamour and students think that if we get internship in Nestle then

our future will be bright. In Nestle, only those students can go who are toppers or have strong references....

(M/Sial, Agri.4, UAF)

Internship opportunities can bring a career break through for students. Students who work hard during their internships might come across an opportunity of continuing their job because of the reputation they have established during internship. An alumnus who graduated in Food Technology recalled how she searched for an internship which further opened job opportunity for her.

I did my internship in 2005 to get experience. I wanted to see what happens in the industries. I called many companies and had no references. Then one company called me for an interview. They said that if I worked well and contributed in the company, they would hire me as an employee. I went there and they selected me for lab work. I did well so they made me a permanent employee.

(F/Batool, Agriculture Alumnus)

4.5.2.2 Studying Further

Educational choice process does not end at the graduation level because significant number of students aspires to attain higher qualification based on a perception that higher qualification enables students to secure a better job opportunity (Taylor, 1992; Watts, 1985). For many students, post-graduate studies were the foremost priority after graduation.

I want to study nutrition in the future. I am thinking of applying abroad after my B.Sc. I will do GRE first and then I want to go abroad for further studies...I will do Masters from abroad and then a job. My first priority is to study further.

(F/Myshayl, Agri.4, PMAS-AAUR)

Although studying further was the student's personal decision, the stimulus was yet again extrinsic than intrinsic. Many students stated that graduation alone was inadequate for ensuring job prospects and thus they wished to study further. This reflected the contribution of the labour market conditions and demands on the educational choices (Payne, 2003). The market demands appear clearer at this stage making students realize that in order to become potential applicants they have to develop their specialization through studying further. Educational qualifications are one of the most common strategies used by employers to screen applicants, and students (and parents) are well aware of these parameters (Wolf, 2002: 54).

As the time of graduation comes closer, students seek information about the demands in the job market and attempt to respond more realistically to the market demands. The educational choices of students are yet again influenced by the structural forces existing outside an individual. The larger socio-economic context (Foskett and Hemsley-Brown, 2001) intervenes in the choice process of agriculture students by driving them towards further studies. This can be illustrated from an interview quotation by a final year student where she expresses that there is tremendous competition in the job market due to which post-graduation becomes mandatory.

After B.Sc., I don't think that I can get a good job. I might just get a regular ordinary job. I will not get a good job until I do M.Sc. at least. I have decided that I will do M.Sc. in Plant Pathology.

(F/Rabia, Agri.4, PMAS-AAUR)

Broadening vision and acquiring greater information about the job market developed over time lays the foundation for their decisions regarding further study. An agriculture

alumnus expressed how the market demands led to her decision to do post-graduation.

When I completed my B.Sc., at that time I started thinking about my career and at that time my teachers guided me to do M.Sc. because wherever you apply for a job, they will demand a post-graduate. Then I secured admission in Masters.

(F/Amina, Agriculture Alumnus)

An agriculture graduate's chances of getting a good job with a graduation alone are meagre. The competition in the job market pushes students to develop their professional expertise through studying further in their specialization. Educational choices and occupational outlooks of students become subject to 'the degrees to which economic conditions are favourable' (Goldthrope, 1996) and this can be exhibited through the following perceptions of agriculture students.

Yes I am thinking about it and I will do M. Sc. because it is a must to survive in the market. I will look for a job after I complete my M. Sc.

(M/Naeem, Agri.4, UAF)

I want to do M. Sc and then serve my university. It is our university policy that we can do lectureship here. Teachers took us on visits of different companies, and people over there said that they are only hiring masters. There are not many jobs for students. Students are more than the job vacancies, thus it is a must to do Masters.

(F/Maria, Agri.4, UAF)

Students' level of commitment towards themselves and their career becomes comparatively more established at this stage. The toil to develop the expertise and specialization does not cease at post-graduation. For many students, studying at doctorate level was among their top priorities. As time elapses, students develop interest

as well as vision about how higher qualifications will facilitate entry into employment. A final year student below expressed how his educational plans matured since the time he started his degree course.

At that time I thought that I would just do B.Sc. and then get a good job, that is it. Now I have broader thinking. Now I think that I have to do M.Sc. and then PhD, then I should get a good job.

(M/Aqeel, Agri.4, PMAS-AAUR)

Khalid also expressed that he was planning for PhD rather than applying for jobs with clear career goals,

I am just thinking about the studies and not about applying for jobs and career, etc. I will do Ph D and then I will join the teaching sector.

(M/Khalid, Agri.4, UAF)

The analysis concur Hodgkinson et al. (1996) findings relating to ‘horizons of action’. They concluded that there are points in the decision-making process where people evaluate their options and their outcomes. This stands true for agriculture students at this stage of the choice process as they evaluate the possibilities and alternatives of developing their qualifications and skills based not only on opportunities in the job market, but also educational opportunities and the individual personal perception of what is possible, desirable and suitable.

4.6 Ready to Eat

Once the farmer has fully grown his fruit, it is ‘Ready to Eat’. The quality of his fruit depends on the aforementioned process of development. Moreover, once the fruit

ripens, the farmer's approach to make use of his fruit (by taking it himself or by selling it) will impact on the rewards he reaps. The rationales that he adopts to utilize his fruit reflect his level of engagement and commitment.

Having experienced the education process that extends over years, students finally step into the professional world and search for a means of livelihood. Nevertheless, the ongoing demands of their life also strongly influence occupational choices. However, the impact of the earlier stages does not vanish; rather certain types of expectations can be associated with the way initial stages were experienced.

The parameters of 'an ideal job' at this stage give concrete indication towards the significance of the earlier stages of the choice process. At the dawn of a professional career, the majority look forward to jobs that offer maximum monetary benefits. However, pay alone does not make up the best possible career opportunity. Students who 'chose' to study agriculture earlier do not merely evaluate pecuniary gains in their occupational opportunities; rather they also choose to join those organizations or occupations that will enhance their professional development and learning. Students who were not keen on agriculture in the initial stages reflect different tendencies indicating less commitment.

The discussion in this section is further divided in two sub-sections. It will first discuss how students prioritize their occupational choices and how those preferences relate to their earlier experiences. Secondly, the professional life experiences of agriculture alumni are discussed in the light of the choice process presented in this chapter. This

discussion will validate that the outcome of the process is inherently effected by the earlier stages of the choice process.

4.6.1 What is the best value of the fruit?

Once the students complete their educational voyage, their expedition to find the best possible occupational opportunity begins because “*if you talk about Pakistan, you have to work hard to get a good job*” (Tabssum, Agri. 4, PMAS-AAUR). Since the number of agriculture alumni in the sample was marginal, the career aspirations of final year agriculture graduates are also included in the explanation of this stage. However, as these students have not yet stepped into their professional lives, their choices about their preferred job were based on their perceptions during the final years of study and had the possibility to change in the future since many students wanted to continue studies till post-graduation level and were planning to start a career afterwards. Nevertheless, their notion of what constituted an ideal job gave considerable insight as to how students approach their vocational choices.

4.6.1.1 Economic Rewards

While making occupational choices, decisions are economically motivated where people select high paying salaries (Baldwin et al. 2001; Higginbotham and Weber, 1999; Allison and Allen, 1978) which is equally true for young people in agriculture sector (Adedokun and Balschweid, 2008). Students aspire to get a job where the incentives are strong enough to fulfil their ‘needs’ and complement a decent life standard. This finding was anticipated since one of the motives behind investing in higher studies and achieving degree education is to secure a better and rewarding means of livelihood. Thus, students give priority to occupations where they expect the greatest

return (Swift, 2009; Makepeace, 1996; Homans, 1964). Two final year graduates below define their ideal job in terms of economic rewards.

Salary should be good enough and an individual's expenses should be met with the salary. The pay package should be good.

(F/Rabia, Agri. 4, PMAS-AAUR)

An ideal job fulfils all the needs of a person; it should give plenty of opportunities to the person. A person should have all the facilities like his own house, a good car and should own some property. He should be able to support his family and should not be dependent on anyone. All these things combined together make a good job.

(M/Zahid, Agri.4, PMAS-AAUR)

At this stage of the choice process, students' maturity starts to reflect on their values and ideals. The responsibilities of bearing a family and supporting that family economically appear more vivid than ever before, especially for boys. It should not be perceived as if students are economically motivated for the sake of rewards alone; rather these preferences are structurally and domestically driven. As Zahid mentioned above, he wants to get decent salary to support his family. Similarly Aqeel considered the wellbeing of his upcoming generation (even though not married yet), and also wanted his achievements to satisfy his parents too.

An ideal job should give me enough monetary support to meet all my expenses. It should not be that all our wishes in our life remain unfulfilled and the next generation should not suffer from poverty. Salary should be good enough. My parents should be happy with me.

(M/Aqeel, Agri. 4, PMAS-AAUR)

Pay and salary was one of the most frequent elements highlighted in the definitions of an ideal job. However, some students also realized that there is a possibility that pay alone will be insufficient to cover the spectrum of their needs or that the possibility of attaining a high salary at the start of the career was unrealistic. Thus, in order to make sure that they are compensated for benefits, which their salary could not provide, students considered additional incentives that various jobs could offer. Nasira (Agri. 4, PMAS-AAUR) modestly expressed that she was not expecting numerous additional facilities; however, an ideal job does consist of ‘some’ fringe benefits. Ahmed (Agri. 4, UAF) while explaining his career aspirations said that he was looking forward to becoming a civil servant because the government sector offers ‘*a lot of facilities*’. On the other hand, Naeem (Agri. 4, UAF) preferred the private sector ‘*because these jobs are financially sound*’.

These examples, along with many other cases, show how students hope to get job placements which will provide monetary incentives and benefits. Moreover, when students aspire to such rewards it becomes more likely that they will also look for and accept job offers that comply with their ideals. This can be proven from the case of a professional agriculture graduate. When he was asked to define an ideal job, he replied:

A job in which we have maximum benefits, compensation and facilities, the overall package offered should be good.

(M/Patoki, Agriculture Alumnus)

At the time of interview, Patoki was working as a technical sales officer in a renowned fertilizer company. He did not care whether his job was placed in a rural area and required considerable mobility; rather he was well contented with his professional life

because he had almost everything that he believed an ideal job should have. His company was a famous multinational firm and besides pay, offered him medical facilities, house requisition and a provident fund. Furthermore, since his work required travelling, he was also provided a vehicle, which he could not afford on his own. It is not argued that all those students who aspire to a highly rewarding job will get one. However, students who short-list their preferences on a certain basis will be more likely to search for and ‘choose’ those options, which they idealize.

4.6.1.2 Non-Monetary Rewards

Besides economic appeal, students also have non-monetary parameters in conceptualizing an ideal job (Swift, 2009). They attempt to seek mental and social gratification from their career choices. A significant proportion of the sample stated that an ideal job is not only about money; rather professional grooming and learning opportunities in a job are also desirable.

It should be tough. One should learn immensely in his job and there should not be any leg pulling.

(F/Tabassum, Agri. 4, PMAS-AAUR)

Healthy and an active one! You should feel satisfaction in that job and there should also be learning opportunities.

(M/Khawaja, Agri. 4, PMAS-AAUR)

Besides learning, self-satisfaction is yet another non-material aspect of an ideal job for agriculture students. The urge to contribute not only to one’s own life but also to one’s area of belonging brings satisfaction to students. They feel that if they will get a job that will not only develop them professionally but will also allow them to develop their

country it will be an ideal situation. The next chapter will discuss in detail how feelings for one's area or country play a prominent role in the occupational choices of the agriculture students in Pakistan. However, it is important to highlight how non-material aspects attract students to various job opportunities.

I think an ideal job is the one in which a person when comes home is with the mind frame that what he did is satisfying enough. My mind is inclined towards research. In research you benefit yourself and your country. If you do research, you cannot only increase the GDP of the country but also increase your own value...An ideal job is the one in which you are satisfied and it is productive.

(M/Waqar, Agri. 4, PMAS-AAUR)

Professional identity greatly determines one's social standing and for this reason, many students expect to become part of esteemed organizations. Students desire to earn 'respect' in society through their career. Following two students highlighted that an ideal job should have of 'esteem' and 'respect'.

I think a job must entail respect and the company or field should be of good reputa and esteem in the society.

(M/Ali, Agri. 4, UAF)

People around us should be good and the work environment should be feasible and friendly. A person should be satisfied and respect should be there.

(F/Nasira, Agri. 4, PMAS-AAUR)

It does not imply that student either wished for money or personal and professional development. The importance of financial aspects does not diminish as many students combined the monetary and non-monetary dimensions in order to describe an ideal job.

The following few examples demonstrate how students combined both aspects while explaining ideal career opportunities.

I think a person should have interest in it and the salary should be good. Respect and prestige should be there, and one should be mentally satisfied as well.

(M/Ahsan, Agri.4, PMAS-AAUR)

An ideal job is authoritative, powerful, and financially sound, and should involve public relations.

(M/Ahmed, Agri.4, PMAS-AAUR)

4.6.1.3 Easy or Challenging?

Many cases in the study sample perceive an ideal job as a combination of mental, financial and social rewards. However, interview accounts show another interesting theme within the career expectations and aspirations of agriculture students. While defining an ideal job some students wanted an easy job. Different students use different expressions to communicate the notion that they would look for comfort and would not like to do a tough job. Can these notions be attributed to students' choice of agriculture as an alternative option? Can such low career aspirations be linked with those do not 'choose' agriculture in the initial stages of the choice process? The following excerpts show how a few students wanted a job which does not pose challenges and is relaxing:

In a proper job there must be a handsome salary, and the hours of work should be relaxed, so that one can live with family easily and happily. There should not be anyone snubbing you and it should be a relaxed job.

(M/Mubashir, Agri.4, UAF)

A job which is well paid and you only have to do a reasonable amount of work. There must not be too much work load.

(M/Sial, Agri.4, UAF)

According to my view an ideal job is a job which you enjoy doing and you are relaxed as well. There should not be any kind of work load which you can't bear and the salary should also be good enough to run your family.

(M/Zahemd, Agri.4, UAF)

I would prefer a job with a good salary...it should not be a hard job; it should be a nice job.

(M/Usman, Agri.4, UAF)

At another point in the interview while discussing fieldwork experiences in agriculture, Usman expressed that he detested fieldwork because it involved physical fatigue.

We have done practical and fieldwork here and I hate fieldwork. The teachers used to take us in the summer season and it was too hot and too horrible to work there.

(M/Usman, Agri.4, UAF)

The preference for being 'relaxed' is not merely an expression of the then current occupational choices of the students. The accounts of these participants reveal that their choices are a reflection of their earlier experiences. All four of the above students did not plan to study agriculture in the early years of their lives; neither they were able to gain sufficient information at the second stage of the process. A career in agriculture was not their first choice. For some it was a second or even a third choice, whereas for Zahmed, it was never his choice ever. When he joined Agriculture University, he did not have detailed information about the career scope and possibilities within the

agriculture sector. These students joined Agriculture University because they could not succeed in getting admission in their preferred professional fields. The significance of the earlier stages of the choice process becomes clearer in this stage of the choice process. Students, who did not *choose* to study agriculture, rather made a compromise or drifted towards this field due to their circumstances at the third stage, were looking for careers in agriculture which are not ‘tough’.

Another final year student below expressed his occupational choices in terms of area and sector based on what he thought was ‘easy’.

It will be tough for me to work in the rural area. As fieldwork is very tough, I feel it will be difficult to work in the rural area. I like research work because research work is lab work. A person can easily work in the lab.

(M/Zahid, Agri. 4, PMAS-AAUR)

Zahid’s occupational choice regarding place of career (urban rather than rural) and type of work (lab work rather than fieldwork) both were based on his intention to join the easier option. It was noticeable that he gained awareness about agriculture education considerably late in the final year of HSE and did not have detailed information about PMAS-AAUR. He applied to Agriculture University only on the suggestion of his cousin who was studying agriculture himself. When he could not proceed with his plan of studying engineering, he opted for agriculture.

Aspiring to easy and relaxing jobs can pose a threat to the development of the agriculture sector. If professional and educated people connected with the agriculture sector look forward to jobs which are ‘easy’, there is a possibility that once they enter

any job, they might take it easy and give limited input to their field. Students' aspirations affect their willingness and acceptance of various jobs as well as their satisfaction once they are in the job (Furlong, 1987: 61). Thus the importance of students who plan a career in agriculture and choose to study agriculture becomes more pronounced. Agriculture Universities need those students who aspire to become agriculture scientists and have the urge to work in this field for themselves as well as for the betterment of the sector. If students who do not aspire and plan to join agriculture keep on drifting to this sector then it is unrealistic to expect significant output from the agriculture graduates who at the first place did not want to be there. Thus the need for increasing students' choices to aspire to agriculture education and profession since their early life becomes imperative because unplanned choices have greater likelihood of resulting in low career aspirations.

The argument is that students' choices and plans in the initial phases of the choice process impact on their ultimate career goals. This is not only evident on the examination of the occupational choices of students who did not plan to choose agriculture. Career choices of students who considered developing professional identity in agriculture since the early stages of the choice process confirm the significance and deterministic nature of earlier stages of the choice process. These students had comparatively different occupational choices from the students discussed above. They looked forward to professionally challenging and knowledge enhancing job opportunities (although monetary rewards were also expected).

The example of Ittesab below exhibits how a planned chooser approaches occupational choices. Not only did he consider agriculture education from a time early in his life and

gained considerable information about the scope of the study and university, he chose his major with careful consideration of his career goals. When asked about his occupational ideals he replied

A good job is the one in which we can fully utilize our skills developed over here. Mostly the job openings for agriculturists are the ones in which the person is appointed as an agriculture officer... In a good job, we can fully utilize our capabilities and gain some experience. We deliver some knowledge and gain some as well. I would prefer this to a job in agriculture in which you just sit, eat and do nothing. I would prefer any field in which there is a greater chance of learning, even if it is teaching. If I get a 17-grade job as an agriculture officer and a 16-grade job as a teacher, I would prefer teaching to being an agriculture officer.

(M/Ittesab, Agri.4, PMAS-AAUR)

Ittesab's career goals as an agriculture graduate were progressive. His thirst to develop his professional identity as an agriculturist was substantially more than his fellow students who did not aspire to become agrarians. Since he planned to study agriculture, his career plans reflected more commitment. Another example of an agriculture student (who planned to study agriculture) shows that he wanted to groom himself as an 'agrarian'. He believed that monetary rewards make up an ideal job and pay should be sufficient to support him and his family. But when it comes to occupational preferences, he responded:

It does not matter to me that my job is based in a rural or urban area. But I would prefer to work in the private sector. If we work in the private sector, we will learn a lot. We will also come to know how capable we are. When we prove ourselves in the private sector, then it will be easy for us to work in any public sector.

(M/Aqeel, Agri.4, PMAS-AAUR)

This confirms that the professional commitment of students that actively went through the above educational and occupational choice process is greater than their fellow students who did not experience a timely and planned educational choice process. The discussion above poses that it is important that more students join this field by choice rather than out of expediency. The ‘compromised decisions’ or ‘unwilling choosers’ pose risks to their professional growth as they might not have strong commitments to their career. Moreover, their limited success can, in turn, give society the impression that agriculture science is not a progressive field, neither of which contributes to making the environment more conducive for students to opt for agriculture education.

In addition to the issue discussed above, there is a potential possibility that ‘unwilling’ choosers will drift away from the agriculture sector after completing their education at the first exit they encounter. Career certainty from agriculture graduates cannot be expected if they made their career decisions without career exploration and without ample knowledge (Esters, 2008). This assumption is proven in the next section at the examination of the professional experiences of the alumni. However, the interview scripts of ‘unplanned’ choosers indicated that such students have not internalized the idea of being agriculturists and might diverge from their field. Although the final year students did not step into the professional life and thus their preferences and ideas were subject to change as per future circumstances and preferences. However, their thinking about changing their field, retrospectively if they could might grow stronger in future and materialize if an alternative opportunity comes along.

In response to the question ‘If the time of F.Sc. comes again, what you will choose this time?’ the four students discussed above (the unplanned choosers who preferred an easier job) replied:

Well this is an interesting question, I would choose pre engineering and I would do it better than agriculture.

(M/Ahsan, Agri. 4, UAF)

I mean I would not do pre medicine and I would join the IT sector.

(M/Mubashir, Agri.4, UAF)

I would work hard and take up the medical field or there could be a chance that I could join BBA²⁰ or business studies.

(M/Usman, Agri.4, UAF)

I would again work hard, this time for MBBS²¹, and my first choice would be MBBS...

(M/Zahemd, Agri.4, UAF)

It seems as if their innate personal wishes and choices were still with other professions. Bearing in mind that they have spent four precious years of their academic life in Agriculture University and have gained considerable exposure to the agriculture sector, they felt no hesitation in expressing that if time could be turned back they would love to opt for options other than agriculture. Asking students after few years of their decision or choice whether they would replicate their choices retrospectively shows to which extent they are satisfied and their ‘choice strength’, the more the desire to make a

²⁰ Bachelor of Business Administration

²¹ Bachelor of Medicine, Bachelor of Surgery

different choice the greater their choice has proven inadequate or unsatisfactory (Colombo, 2011: 31).

Maria (Agri. 4, UAF) is yet another example whose reply to the same question was ‘*I would try this time to get more marks and would definitely enter the medicine field*’. She always dreamed of becoming a doctor but could not succeed in the entry test examination. Repeatedly in her interview, she expressed her persistent longing for the medical profession. Although she was planning to do a Masters in her major Plant Pathology, at the same time she was planning to leave the agriculture sector.

I would appear in entry test at any cost and take admission in M.Sc. Then I would see if I clear (medicine college) entry test then I would leave masters.

(F/Maria, Agri. 4, UAF)

4.6.2 Outcome of the Process

The whole process (combining the role of farmer, soil and environment) results in a ripe fruit. If there is significant deficiency at any one stage of the development process, it can influence the consequences. If the seed was not timely sown by choice, if the roots did not develop, if the flower was not nurtured with careful attention or the fruit could not ripe properly; the fruit will be of little value. Moreover, if the farmer does not utilize the fruit properly because he did not know why he grew it at the first place, then the exercise of going through the whole process can go in vain.

The educational and occupational choice process presented in this chapter can have variable results, depending upon the way early stages have been experienced by a student. The following cases of agriculture alumni will exemplify that issues faced in

the earlier stages of the educational choice process have implications on their occupational choices. The difference between the occupational aspirations of planned and unplanned choosers identified in Section 4.6.1 and the assumption that planned choosers are more likely to join agriculture related professions and unplanned choosers will probably drift away from agriculture sector if they can is proven through the occupational decisions made by agriculture alumni.

4.6.2.1 Case 1

The first case is of a female agriculture graduate Batool (the girl has been mentioned above Section 4.2.1 and 4.4.2). Her family belonged to a rural area and had agriculture landholding in a village. However, she resided in a city with her parents and studied from urban schools. Batool was inspired by forest officers since childhood and aspired to become one. She successfully secured admission in agriculture sciences and comfortably settled in the university as she already had interest and prior information regarding her educational pathway.

During her graduation, she forwent her preferred major because she realized that the practical work in Forestry required a level of physical strength which she believed would make her dependant on others. She then carefully drew parallels between her interests and abilities with other available options. She chose Food Technology because it did not involve major fieldwork or physical effort rather the practical work was conducted in laboratory. Her planned choice, interest and ambitions enabled her to perform well in the university. She found internship by herself in an organization where she was offered a job by the organization at the end of internship due to her good performance. She also qualified for the National Internship Program run by the

government where she took part in an agricultural project. Due to her performance, her supervisor referred her for a landscaping project. The experience in turn increased her interest in the field.

Considering her interest and performance, her supervisor advised her to work on her own landholdings. Although her family did not allow her to do fieldwork in the village due to local customs, they gave her a large garden to work on inside the house where she '*planted 150 plants of bitter melons and 50 plants of tomatoes*' through utilizing techniques she learned in the university. She presented her tomatoes to her supervisor for experiment and he was immensely impressed and applauded her fine produce. Her fieldwork was once again a valuable learning and motivating experience. She also worked on a radio station in a farmers' awareness campaign to improve canal systems. At the time of interview, she was working as a quality control manager in the baking industry.

Batool's work experience and occupational choices show that students who join agriculture sciences by choice and based on their vocational goals stay connected with the agriculture sector and also groom themselves professionally. If this girl had not been limited by local customs, she might have had performed well in her father's landholding and might have contributed more to the development of her land and village. She also contributed to the betterment of the farming community by presenting a radio program and transmitting information about land development. Thus those who join agriculture sciences considering their vocational goals and plan their choices along the way, search for occupational opportunities within agriculture profession and increase retention of graduates in the agriculture sector.

4.6.2.2 Case 2

The second case is of agriculture post-graduate Tahir (also discussed earlier in Section: 4.3.6). Although his family inherited agriculture landholding, they never lived or visited the villages neither any member of his family was looking after the landholdings themselves rather have established careers in engineering, medicine and armed forces. All his life he lived in the urban areas. Since childhood he wanted to be a musician; however, his family disapproved of his choice. Thus, he abandoned this idea early in his life. He then chose to study engineering because it was well regarded by his family members. He secured admission in Bachelor of Engineering but was terminated from engineering university in the first year of his degree along with his whole batch due to political riots.

He had no idea what to do next in his life. He saw an advertisement of admission in Agriculture University and hastily took decision to study agriculture merely to continue his education and to avoid ridicule from his family. He made an unplanned choice without any prior information or interest. He categorically said that when he went to university he knew nothing about agriculture education and career opportunities. In the beginning he was unable to cope with his studies because he came from an engineering background and studying biological sciences was a completely different experience. However, he worked hard and secured good grades in his degree. He chose Food Technology based on his own vision that the major would have prospects and completed his post-graduation with good grades.

While he was in the finishing stages of his research project in M.Sc., he came across a job opening in the newspaper of a pharmaceutical company, and applied without much thought. When asked why he applied he responded ‘*Well you can say it was my childish evaluation and instinct that I thought that whoever has written this ad has written in such good English, this is bound to be a good company*’. All he considered was the company’s reputation since it was multinational and did not even know about the job he was applying for. Although he was not selected for the job he applied, the interview board offered him a job in the sales and marketing department with an attractive salary package.

The thought of getting a job even before convocation was in itself very tempting and thus he joined the pharmaceutical company in the sales and marketing department. At the time of interview, Tahir was working and progressing in the same pharmaceutical company and wanted to develop his career in the marketing the pharmaceutical industry. He completely changed his field and was disconnected with agriculture. Since he was successful in his current job and was getting good professional exposure and salary, he said that it did not matter to him or the people around him that he is not working in his field of expertise.

This student did not plan to study agriculture. He never considered agriculture as his future career neither knew details about agriculture at the time of decision. He had no additional support from his family or friends as there was no one in his family related to agriculture. His career choices give strong evidence of the fact that students, whose first choice of higher education is not agriculture and enter this field without much deliberation, are likely to leave the field. He shifted his field at the first available outlet. Nevertheless, he was offered a good job at the dawn of his career, and so he never

applied or attempted any other job in agriculture sector and continued with the same job. Also at the time of interview, he did not intend to rebound to professions within the agriculture sector. This justifies that experiences of the earlier stages have lasting implications on the outcome of the choice process, confirming that those who never aspired to be agriculture scientists, are likely to be less committed to the agriculture profession, will search for opportunities outside agriculture as well and will accept it too without considering that they have spent considerable number of years studying agriculture sciences.

4.6.2.3 Case 3

The third case is of an agriculture alumnus from UAF, Patoki (his insights and experiences has also been discussed in Section 4.5.2.1 and 4.6.2.1). His father owned a sweet shop (which he categorised as a small business). He and his family had no connection with rural areas or agriculture. His first career goal since childhood was to become a doctor. The motivation behind that was the general '*trend*' in society to study medicine or engineering (which is discussed in detail in the next chapter). However, he could not secure admission in medicine as he secured poor grades in HSE because of change in medium of instructions in HSE (Urdu to English) and also because his father could not afford to enrol him in the self-finance scheme of Medical Colleges. For these reasons, he changed his mind and started looking for alternatives.

During F.Sc. he came to know about agriculture education through his neighbour who was a well-established agronomist and used to travel abroad frequently for business. His success inspired him to consider agriculture as a future option. He gathered substantial information about agriculture education, university and career prospects and thus decided (before he finished his HSE), to study agriculture. After his F.Sc. results, he

applied only to Agriculture University and willingly chose it. His university education went smoothly and at the time of selecting his major, he made a planned choice considering his personal interest and career prospects. As his neighbour inspired him, he chose to study agronomy and collected information about the significance of his major in the professional world.

As he approached the end of his post-graduate studies, he searched and applied for various job opportunities, all of which were in the agriculture sector. As soon as he completed his post-graduation, he joined a well reputed international firm in the fertilizer sector. He had various job options, but he chose this particular firm as it offered better monetary rewards, benefits and career opportunities. He had clear career goals of joining the fertilizer sector and wanted to develop his career in agriculture profession. His example once again shows that students who plan and choose agriculture as their professional career during or before HSE (because they have experienced ‘sowing the seed’ and ‘developing the roots’), are likely to be more committed to the agriculture sector. Moreover, those who choose majors based on clear career goals, and ‘ripen their fruit’ properly will experience less difficulty in developing their professional identity as agriculturists.

These cases discussed above prove that enrolment in agriculture sciences and further on, retention of agriculture graduates in the agriculture sector can be enhanced if more attention is paid to the stages outlined in this chapter. The implications and significance of the earlier stages are magnified at the outcome of the choice process. The last stage of the choice process and the examples of the alumni give indication that students approach their occupational choices in the light of their educational choices and the way

they have experienced various stages of the choice process.

Summary

This chapter has analysed the ‘transitional’ nature of the educational and occupational choice process of agriculture students in Pakistan and has detailed the answer of the first research question by identifying the stages of the choice process based on the insights and experiences of the research participants as supported by the literature reviewed.

From the development of aspirations, to the time students complete their education and step into their professional life, the chapter has outlined six stages of the choice process. All of the stages are woven together and each provides foundation for the next stage. Not only does the prior stage bear influence on the next stage, but the experiences of the earlier stages leave lasting impressions on the later stages of the choice process. The significance of ‘choice’ in the educational and occupational decision-making of young people becomes magnified at the outcome of the six stages of the choice process. The analysis revealed that educational choices which are made at the early stages, and at a young age, profoundly affect the long-term occupational choices of the agriculture students. This highlights the need to encourage students to plan and choose their education and career pathways as it will increase the chances of career stability as well as facilitate retention of professional graduates in the agriculture sector.

The characteristics of stages, their impact and the non-linear and reversible nature of the choice process are presented in the figure below. The figure summarises the complete choice process, the way it operates and how various outcomes can be anticipated through the experiences of the various stages of the choice process.

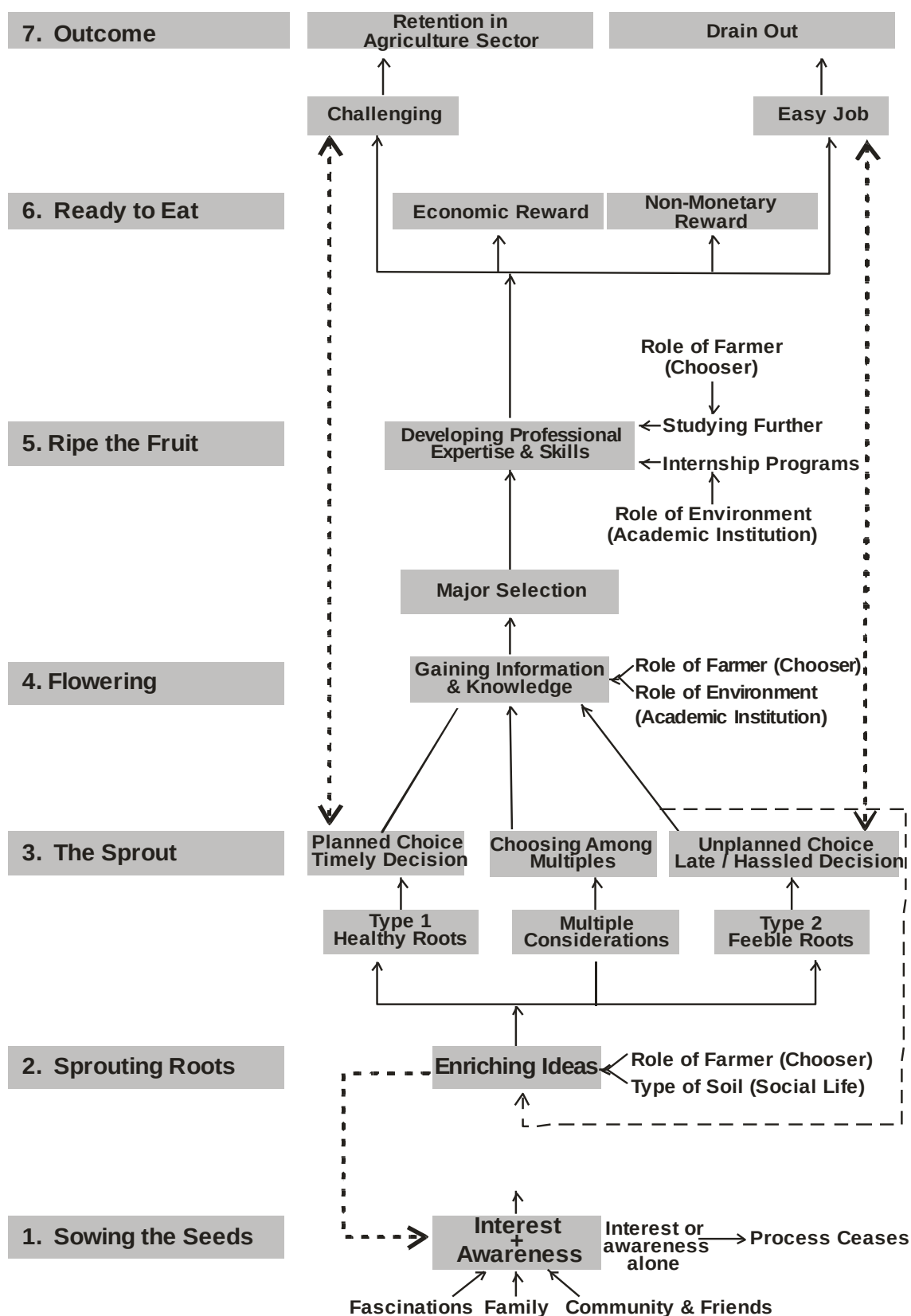


Figure 4.1: The Educational and Occupational Choice Process of Agriculture Students

Furthermore, considering the reality that the education system inherently has a structure and does not allow shifts of educational decisions totally on the discretion of the students, the process highlights the stages at which stages turns and shifts in choices are likely to be experienced, thus indicating when and what kind of support students need while shifting from their earlier choices to new ones and how their choice process can be facilitated.

The analysis incorporates the ‘time dimension’ in the choice process. The “distribution of times spent in various stages” have been explored as students cannot “stick” to a particular stage because “education is obviously much more structured” (Chattoe-Brown, 2010: 10-11). The time available and the degree to which it has been utilized to attain necessary information, skills and knowledge have implications on the strength of aspirations and goals. Students who fail to cope timely with the choice process or do not utilize the time at one stage face considerable challenges in the next stages. Furthermore, in order to overcome the gaps of the previous stages, some students spend the limited time available in a particular stage on multiple tasks which can potentially lag them behind or divert their attention during that particular stage.

Choices cannot be comprehended without giving due attention to the influences of ‘agency’ and ‘structure’. As highlighted in Chapter 2, research in this area has often taken an ideological view on the supremacy of structure or agency whereas the contemporary models of educational and occupational choice incorporate both. The analysis did not aim to solve the structure and agency debate; rather it highlights a new way of understanding them by categorising the types of structure and agency as ‘stiff’, ‘standard’ and ‘soft’. The combination of various types of structure and agency

potentially extends our understanding as to how, under similar circumstances or structural influences, different agents make different choices. Similarly, how agents under diverse structural situations make similar choices.

Nevertheless, the primary focus of this research is how students make their educational and occupational choices, thus the impact of various factors on the choices and the choice process are discussed in detail in the next chapter.

Chapter 5

INFLUENCES ON THE CHOICE PROCESS

Introduction

The literature reviewed in Chapter 2 and the choice process presented in Chapter 4 challenged the notion of students as ‘autonomous choosers’ due to the influence of various factors on the educational and occupational choice process. The discussion made in the previous chapter and the choices made by the respondents exhibited that there are certain factors that act either as choice facilitators or barriers. These factors influence in various stages and forms; either attracting students towards agriculture sciences or, in majority of the cases, restraining them from placing education and career in agriculture on their top priorities. While extending the analysis of the previous chapter, this chapter answers the second research question: *How do personal and socio-cultural elements influence the educational and occupational choices of agriculture students in Pakistan.*

This chapter will discuss four main themes that have emerged from the data. Firstly it discusses the role of locality, as residential background influences the choices as well as the choice process in multiple ways. Secondly the role of gender, as gendered perceptions of the agriculture profession affects female participation, performance and occupational choices within the agriculture profession. Thirdly the role of social prestige associated with various professions as the image of professions place great limitations on choosing agriculture sciences as a profession. Finally, the parental influence, their role and support towards children is analysed. Although it might be expected that the role of the parents should be discussed first, their support is subject to

the social images of various professions, and is better understood after discussing that theme.

5.1 Choice and Locality

The characteristics of the locality in which the young person lives play an important role in shaping aspirations (Banks et al. 1992:1-2). In agriculture sciences, the students from rural areas are more likely to join this field as compared to their urban fellows (Ramdawar and Ganpat, 2010) because prior experiences and knowledge allow better comprehension of agriculture education among rural students ultimately attracting them towards professions in the agriculture sector (Asadi et al. 2011). As Nasira points out:

I think it (residential background) has significant effects on choices. I knew a little bit about agriculture, that is why I developed an interest in it. My family members, father, and mother also tell me about the growth of plants. I think background does matter to develop interest in the agriculture field.

(F/Nasira Agri. 4, PMAS-AAUR)

The role of information and knowledge stemming from personal experiences in initiating the choice process has already been highlighted in the previous chapter (see Section 4.1.1.1). In addition to this, residential background influences the career choices of agriculture students in several other ways. Firstly, prior knowledge about agriculture (which rural students have and urban students do not) influences the pleasure and performance of students in the early years of the university education and has an extended effect on the later stages of the choice process. Secondly, rural students' (or their families') agriculture landholdings direct their long-term career choices towards developing family businesses. Thirdly, observing the appalling conditions of the

farming community instigate feelings of empathy and concern among the rural students, that ultimately reflects on their education and career preferences. Each of these are discussed in detail below.

5.1.1 Residential Background and Knowledge

Students living in villages or rural areas naturally have more exposure to agriculture compared to their urban counterparts. Earlier experiences in the fields, village life and farming atmosphere increase knowledge about agriculture concepts. This in turn facilitates rural students' comprehension and understanding of the curriculum especially during the early semesters of the degree. Dyer et al. (2000) identified that prior experiences in agriculture that increase knowledge include farm-work, working on a ranch, working with animals and with relatives, learning experiences in high school agriculture courses and memberships in agriculture clubs or organizations.

As highlighted earlier, the formal school system in Pakistan does not include academic courses on agriculture sciences neither there are any agriculture clubs or organizations working with students at the school level. However rest of the experiences and observations act as an early internship for students from the rural areas developing their basic concepts of agriculture. Saddaqain, while describing his academic experiences in the university highlighted the potential effects of existing knowledge:

Being a student of rural background helped me a lot during the first year of agriculture education because I was familiar with the terms used in the introductory classes. In the village I used to see farming and fieldwork...

(M/Saddaqain, Agri. 1, UAF)

Farming is mostly a family business in Pakistan where family members and kinship group help each other in the fields, particularly in the harvesting season. Many rural students have taken part in agriculture activities with their family members. The learning that takes place in such activities makes rural students feel confident and comfortable in the fieldwork during their degree course. These prior experiences become highly influential in agriculture students' choices and performance (Wildman and Torris 1999). Zahid's experience during the fieldwork in the university exemplifies:

I like fieldwork and practical work because this is my culture and my background. My parents work at farms, we will do so in the future as well, and this is in our blood. My mother, my uncle, my cousins all work in fields. We enjoy this work.

(M/Hafiz Zahid, Agri. 1, PMAS-AAUR)

Since Zahid had a rural background and worked in the farms with his family, he coped smoothly with the fieldwork at the start of his degree course. His farming experiences developed profound confidence. He felt that he was born to work in the farms and that farming runs in his blood (concurring with the feelings of the respondents of Rosenblatt, 1990) ultimately increasing his contentment. Rural students have a tendency to perceive farming as an innate professional orientation; therefore they feel that it is natural for them to do farming (Cummins, 1999: 51).

The impact of locality in the educational experiences of agriculture students is magnified when analysing the experiences of their urban fellow students. Urban students expressed difficulties in adjusting with the fieldwork of their degree course mainly because they do not have an agriculture background, and this develops hesitation among them to make commitments to the agriculture profession (Case, 1993). The lack

of introductory knowledge and information among urban students created difficulties while conducting fieldwork in the early years of their degree. A few examples of the urban students in the early years of their degree authenticate this:

Although I have done fieldwork a lot at university but I find it hard because I never done it before. It is difficult for me.

(M/Nankana, F.Sc, Pre-Agriculture)

I have done fieldwork but my experience is not good so far because I have not done such fieldwork before so I find it very difficult.

(M/Ranalahpur, Agri. 1, UAF)

It is difficult. I have never done fieldwork. Therefore, it is difficult to do...

(M/Omer, Agri. 1, UAF)

These confirm Frick et al. (1995) findings that rural students are comparatively more aware than urban students of agriculture related concepts. Besides practical tasks, urban students also have to make an extended effort as compared to rural students in comprehending course work. An urban student Saba had a keen interest in studying agriculture and used to ask too many questions in every session in order to clarify her concepts in the first year of university education. Her teachers attributed her inquisitiveness to a lack of introductory knowledge due to her residential background.

I find studying these things very interesting because I have never seen these rural areas and these things. When teachers are teaching, I ask them too many different questions to develop a better understanding and they often reply that it seems as if I have no connection with rural areas.

(F/Saba, Agri. 1, PMAS-AAUR)

Lack of prior experiences in farming and agriculture make it difficult for urban students to grasp agricultural concepts at least in the beginning of the studies. There lies a disparity of interest and comprehension about agriculture education among rural and urban students,

Belonging to a village helps a lot... those who have rural background have more interest in studying agriculture than a student who has an urban background. An urban student cannot understand this field as well as a rural student.

(F/Asma, Agri. 1, UAF).

Rural students' prior knowledge about agriculture has an extended impact. It enables them to score good grades in the early years of their degree, which in turn develops their interests in particular subjects in which they have performed well and ultimately shapes their major selection. Awais's prior knowledge not only enabled him to secure good grades but also built on his interest in agronomy and he was planning his major selection:

Since my father belongs to the agriculture profession, I have seen all these activities and I did farming in my village. This prior knowledge greatly helped to secure the highest marks in agronomy. This encourages me and develops a greater interest in agronomy.

(M/Awais, Agri. 1, UAF)

Similarly, urban students' preferences for particular majors confirm that residential backgrounds continue to influence educational and career choices even at the later stages of the choice process. Urban students tend to shortlist majors based on the difficulties they faced during fieldwork in the initial years of their degree education and they avoid those majors, which involve fieldwork. Instead, they prefer majors, which

entail more laboratory work. An urban student below reflects this precisely while recalling how he chose his major:

I liked food technology and horticulture because in these major we do not have to do fieldwork...I do not have a rural background so I think this was the reason I liked these two fields. I prefer to work in the laboratory.

(M/Sial, Agri. 4, UAF)

Sial finally chose to study FT and worked considerably hard during the optional summer semester to improve his CGPA to qualify for the major of his choice. He believed that residential background leads the interests of students towards different majors. Some majors have excessive fieldwork (e.g. agronomy, entomology etc) whereas some comprised of lab work and lead to careers in industries; thus, rural students are more interested in majors that involve fieldwork whereas urban students aim for majors that will lead to occupational opportunities in industries or research agencies.

You will find more urban students in food technology than rural students. Most of the rural students take agronomy and entomology; they do not choose food technology.

(M/Sial, Agri. 4, UAF)

5.1.2 Developing Personal Landholding

Rural students belonging to families with agriculture landholdings or agriculture businesses prefer to develop their own landholdings and businesses professionally in order to ensure socio-economic prosperity for themselves as well as their families. They consider that their knowledge and expertise will allow them to perform better on the

family's agriculture landholding or businesses. The occupational choices of such rural students involved developing careers in the native villages in order to maximise farm earnings.

For example, Tayyaba had planned to study agriculture sciences in order to utilize the technical and scientific knowledge to advance the performance of her landholdings:

I want to go back and look after our lands. I personally believe that everybody makes an effort, so why not do it in a proper way? Everybody is getting ahead using science and technology so why can't we progress using science?

(F/Tayyaba, Agri. 1, UAF)

Students perceive that studying agriculture ensures a career for rural students because even if they will not find a good job, they always have the option of working on their own farms, develop them and earn good money from farming. Students with landholdings showed comparatively more sense of career security due to this factor. The provision of personal landholding gives them the opportunity to start their own business. As Tabassum believed, rural background and belonging to a family engaged in agriculture profession

...influences a lot and helps in developing interest in this field. If a student studies agriculture... he can use his own land... if you have your own land, then you can start your business yourself... but those who don't have their own landholding, for them it is really difficult.

(F/Tabassum Agri. 4, PMAS-AAUR)

This phenomenon becomes more explicit when Amber below expressed her academic and career choices:

...we have established our own business on our landholdings. We have horticulture polythene tunnels where we grow cucumbers. We also grow and sell bell peppers and bitter melons... since we have our own agriculture related business; we had to go for agriculture so that we can enhance our own business by employing scientific knowledge... After my graduation, I would like to go back to my area...

(F/Amber, Agri. 1, PMAS-AAUR)

Another agriculture student expressed his contentment in studying agriculture because he could utilize his education on his family business.

I told my father that after studying this field I would tell him better ways of getting more production... I told them (parents) that whatever I will study in books, I will implement it in the village. I am happy that I got admission in agriculture.

(M/Zahid, Agri. 1, PMAS-AAUR)

In contrast to the notions above, urban students' families are involved neither in agriculture production nor landholdings. This diminishes the likelihood of stimulating interest in developing a career in agriculture. While discussing the reasons that restrained students opting for agriculture education, Fehmeed believed that two main reasons limit urban students' interest in agriculture; lack of awareness and information about agriculture (see Section 4.1) and secondly:

The main reason for not studying agriculture is that people do not have resources and their own land holdings; that is why they avoid this field. This is why they don't risk taking agriculture... they have no resources... They choose those fields in which they will get jobs easily and quickly. Therefore, if they choose agriculture they will choose it as a last option... if they study agriculture and do not get a proper job then they cannot apply and use their degree anywhere.

(M/Fehmeed, Agri. 1, UAF)

An intermediate student while explaining the reasons for not planning to study agriculture highlighted the same two reasons:

Well firstly because I don't know much about agriculture and because we have not much land in my village. There is just our home and no landholding.

(M/Sajid, F.Sc)

Urban students feel that lack of such resources limits their career prospects. Failure to secure a job with good remuneration will leave no career alternatives for urban students, consequently developing feelings of career insecurity. An agriculture alumnus while narrating his choices said that he chose to study PhD and was searching for a job meanwhile because he believed that:

A rural student can develop his land but an urban student has no future, like me.

(M/Omer, Agri. Alumnus)

In order to secure and develop his career in agriculture, Omer decided to study PhD. If he had access to agriculture landholding like rural students above, his career choices might have been different. Students feel that in agriculture profession '*a rural student has more opportunity to grow in his own area*' (Sami, Non-Agriculture). A final year agriculture student expressed that he has witnessed his fellow students, belonging to agricultural families, making use of their education and developing careers in agriculture. He felt that if he had similar provisions, he could follow their career path too.

One of our class fellows is studying dairy farming and now he has established his own farm and he is doing business side by side. If government provides us (urban students) with some piece of land then we can apply our knowledge on that land.

(M/Sial, Agri. 4, UAF)

5.1.3 Helping Farming Community

The agriculture practices of farmers in Pakistan are still a reflection of decades ago. *‘The villagers and uneducated farmers have less information and knowledge about cultivation of the crops; they don’t know the latest techniques’* (M/Zahid Agri. 1, PMAS-AAUR). Rural students directly observe these problems of the farmers and the state of agriculture. These observations and experiences create strong empathic feelings for the farming community. For this reason rural students aim towards those occupational opportunities which will lead them to rural areas and enable them to develop the farming community.

The poor state of knowledge, awareness and vision of farmers in the small villages stimulates the belief that these farmers *‘must learn new technologies’* (Ranalahpur, Agri. 1, UAF). An intermediate student below expressed her observations of the challenges faced by farmers in her native village and how those motivated her to study agriculture:

Farmers are not educated and have no knowledge... Even though the lands are quite fertile there... farmers do not produce or earn enough... So it was my idea that if I join the agriculture field, I can bring awareness to people. Even if I will not be able to develop awareness, at least we can get good reward out of the lands we own ourselves.

(F/Faiza, F.Sc)

Faiza had agriculture among her top preferences for higher education and her choice emerged from the passion of helping people of her native village or at the very least, she wanted to contribute in the development of her family's landholdings (which has already been discussed in the section above). Another rural student below expresses how her observation of the non-scientific and outdated farming practices of her village people motivated her to study agriculture and directed her long-term career plans.

Back in rural area, people are practising agriculture in a very conventional manner. Like the way their forefathers did it, they are doing it in the same way. They do not know about the new techniques they can apply. Therefore, I wanted to do something about it and tell them how things should be done and make them understand about what changes can be made for their betterment...After my graduation I would like to go back to my area. I would like to keep our lands in good shape. I will educate people about the shortcomings of their lands and will tell them the techniques of how they can make it better so that their farms have high production.

(F/Amber, Agri. 1, PMAS-AAUR)

In the excerpt below, Ali details how rural belonging and bringing up in rural communities reinforced his choice of studying agriculture.

...everybody thinks of one's own gain after studies, there should be people who think about other people too who are poor... I was thinking of getting a job near my village. I think that where a person is born, he should do something for that place and for its growth and prosperity.... where a person is born, he likes that place, he prefers to live there, and he has an affinity to that place, so he has to do something for the development of that place. Since I belong to a village, by studying agriculture I can do something for the development of the place where I was born...

(M/Ali, F.Sc.)

The feelings for educating the farming community become a strong rationale for considering agriculture as a career option and significantly facilitate initiation of the choice process.

I had an interest in agriculture from the start because I wanted to educate my people. E.g., they do not know that they should have a soil analysis and without checking the soil, they keep on adding nitrogen and fertilizer to the soil. We will tell our parents about the different methods of getting more production. We should know about the laboratories so that we can take soil samples for testing...

(M/Zahid Agri. 1, PMAS-AAUR)

The excerpts above might indicate that the impact of rural belonging and empathic feelings for the farming community are limited to the initial stages of the choice process only. However the data revealed that their strong influence on students' choices endured at the later stages of major selection and occupational choices, and did not fade even after gaining considerable exposure in Agriculture University about occupational alternatives within the agriculture profession. For instance, Farhan was planning his major on the basis of his rural belonging. He was aiming to study plant pathology specifically to join the pesticide sector because he felt for the farmers of his area and the difficulties they were facing.

I will study plant pathology... due to diseases many plants are destroyed in our area. I want to know what is good for the plants and their growth so that I can tell the farmers in my area about it and let them know about the consequences of using one thing that can benefit them, and avoiding others that can be harmful.

(M/Farhan, Agri. 1, PMAS-AAUR)

Similarly, final year student Mishayel recalled that she wanted to serve her community, and for that reason she chose to study agriculture and selected her major accordingly. She recalls the reasons for studying agriculture and by the end of her graduation; she was still looking forward to fulfilling the aim.

My mother grows vegetables and sometimes all of her vegetables have really perished. The cultivators there don't know the reasons behind it. My interest developed in agriculture because I was keen to know the reasons behind it. We also bear losses in our apple cultivation... So I used to think that someone should be there for them and they should benefit from his knowledge... I also have the hope of developing my area afterwards.

(F/Myshayl, Agri. 4, PMAS-AAUR)

Kashif below also incorporated zeal to enhance the state of agriculture while deciding upon his specialization.

Floriculture is my first preference... As you might know, floriculture in Pakistan is not fully developed and we have to work in this field to develop it. We have all the resources available here but nobody is utilizing these resources. For example, our teacher told us that we can produce our own seeds only if we cultivate plants with the intention of producing seeds; otherwise we cannot get enough seed production. If we do work in this field, we can progress and we can benefit our community.... I do not have an interest in teaching. Teaching is good but if we work in research and give something new to the whole society, we will not only benefit the specific sector but also benefit Pakistan.

(M/Kashif, Agri. 4, PMAS-AAUR)

The feelings of rural agriculture students tend to be more altruistic while they plan their occupational choices. Their empathy and concern shape career choices through motivating them to contribute to the development of their local communities and broadly speaking, the whole country. The whole concept of how affiliation with the rural community contributes to the occupational choices of students can be summarised by the narrative of Noor below:

Being Pakistanis, we should have an aim to serve our nation. Developed countries are progressing because their students have capacities in all fields... Students are taught since childhood that Pakistan is an agricultural country and is majorly dependent on agriculture. However, when they see the poor conditions of the agriculture sector by themselves, they think that if agriculture will not flourish, how can the country flourish? The progress and development of the country relies on the development of the agriculture sector. When they contribute by educating the farmers or by helping the farmers, then they will be contributing to national prosperity.

(F/Noor, F.Sc.)

Prior knowledge, landholdings and emotional association with rural community among students play a significant role in shaping the educational and occupational choices of agriculture students in Pakistan. Prior knowledge notably affects students' academic achievements particularly during the first year of agriculture education which allows students from rural backgrounds to perform better (Dyer et al. 2000; Schonert-Reichel et al. 1993) than urban students in agriculture. Better academic performance due to prior knowledge further affects students' major selection and that ultimately have consequences on their career opportunities. Urban students choose and look for career

opportunities in urban areas (Tabaraei and Ghasemi, 2007). Similarly, possessing landholding shapes occupational choices as rural students focus on developing those whereas urban students make their decisions considering the fact that they do not have such resources. Lastly, since rural students have stronger emotional attachment and connection to their families (Ferry, 2003) and the community, they aim to work in their native rural towns to improve the state of agriculture and economic conditions of the farmers by employing their knowledge.

5.2 Role of Gender

Gender is among the salient factors theoretically and empirically proven to influence the educational and occupational choice process of young people (Esters and Bowen, 2005; Jones and Larke, 2001; Johnson, 1996). Although still an issue, recent enrolment in various professions show that gender disparity is diminishing, girls are choosing occupations that have been conventionally opted by males (White, 2007; Francis, 2002). Evidence from USA suggests female participation in agriculture education and occupation has increased, and sometimes exceeded, that of males (Ramdawar and Ganpat, 2010; Esters, 2005). Similarly, female enrolment in agriculture, which is a ‘male dominated’ subject area in Pakistan, has risen over the last decade.

Amina (Agriculture Alumnus) recalled that seven years ago when she joined Agriculture University, ‘*the ratio of the girls was too low*’. Now larger numbers of girls are joining agriculture. Another agriculture student states:

...earlier the number of boys who studied agriculture was high. Now girls are also studying agriculture. In our class, girls are more in number than boys.

(F/Natasha, Agri. 1, PMAS-AAUR)

However, increased female participation does not assert that gender no longer influences the academic and career choices of women. Students continue to choose their career pathways in a gendered pattern (Hodkinson, 2008; White, 2007a). The problem impinging on the choices of agriculture students is the strong gendered label on this field as being specific for males (Mangheni et al. 2010). An agriculture alumnus compressed his experiences and observations and concluded that agriculture sciences are best suited for males,

Now girls are joining agriculture sciences and have started working in this field but still males are more successful in this field.

(M/Qaiser, Agriculture Alumnus)

One of the salient reasons for gender stereotype of agriculture sciences is the nature of work it involves which is predominantly related with the field. The physical strength required to perform fieldwork in agriculture is perceived to be possessed by males and deficient in females, which ultimately affects their success in agriculture education and profession (Odejide et al. 2006). For this reason it is considered more appropriate for males (Krueger and Rieseuberg, 1991). While discussing the comfort, convenience and gendered pattern of studying agriculture, female agriculture students highlighted the implications of their physical strength on their study experiences:

Yes it is difficult. For females it is so difficult. It is not easy for girls to perform fieldwork.

(F/Shumaila, F.Sc. Pre-Agriculture)

Yes, because the females are not strong enough physically. Males are stronger than females physically so it is better that boys should adopt this field.

(F/Maria, Agri. 4, UAF)

I think so. It is difficult for a girl to do fieldwork.

(F/Hafiza, Agri. 4, UAF)

Sami from UAF expressed similar views based on his observation of agriculture students:

Yes there is a gender issue. It is difficult for girls to do fieldwork. Girls can't do such physical work.

(M/Sami, Non-Agriculture)

Forsythe et al. (2010) also received similar responses in their investigation of educational and occupational choices of agriculture students. One of their female respondents highlighted the issue of physical power in the following manner.

“My fellow students would tell me ‘how will you handle/restrain animals given your size?’ I would tell them that I would manage. I will get people to restrain the animal so that I can do to it what I am supposed to”.

Many male students in the current research observed and reported that girls worry about their clothes, hands and skin, etc. which could become dirty because of working with the soil. Male students complained that their female fellow students often requested them to move heavy pots and wheelbarrows from one place to another because girls

were unable to perform those tasks. Confirming the experiences of male students, a first year female student expressed:

I have noticed that in Pakistan, girls are slow and not into fieldwork. Girls here hesitate while doing fieldwork.

(F/Asma, Agri. 1, UAF)

Batool, an agriculture alumnus who ‘chose’ to study agriculture had to give up the major of her preference, forestry, due to physical strength required in forestry discipline. She opted for FT as her major because of less fieldwork involved and less physical strength required performing laboratory tasks in FT discipline. During her internship and professional ventures, she observed that females were not keen to participate in fieldwork for the above mentioned reasons.

The ‘physical work’ involved in agriculture discipline has a social dimension as well. The widely acknowledged assumption that males participate in physical activities also portrays a male dominated image of agriculture sciences:

Fieldwork is very difficult for girls because our society is a male-dominated society and this matters a lot.

(F/Tabassum, Agri. 4, PMAS-AAUR)

Besides girls studying agriculture, many non-agriculture female respondents reported that among various reasons for not ‘choosing’ to study agriculture, gender was a salient one. E.g. Memoona (Non-Agriculture) did not consider studying agriculture because she ‘always thought that agriculture is just for the boys because of the fieldwork involved’.

Similarly Mehroz (Non-Agriculture) chose to study B.Sc., though she was aware of agriculture. She thought '*this degree is fit for boys and girls have no scope in this degree. This field is tough for the females...*' predominately because of the type of work it entails and job openings within this field. These findings confirm that gender influences the attitudes and beliefs regarding studying agriculture sciences (Sutphin and Stewart, 1995).

It is important to note that lack of physical strength to perform fieldwork tasks is not the only reason that hinders girls from studying agriculture. The social disapproval of girls engaging in fieldwork restrains female students to consider agriculture sciences as their future academic and vocational choice. In a male dominated society like Pakistan, girls' participation in fieldwork professions is not regarded respectable by the society. This confirms that gender has a strong relationship with subject choice and exerts its influence in a negative manner (Bimrose et al. 2005). Another female student emphasized on this issue while explaining why she did not opt for agriculture.

A: I did not want to study agriculture. I just decided that I will do B.Sc. and then after that I will do M.Sc.

Q: Why?

A: Because in this discipline we have to do fieldwork and our society does not accept this thing that women work in fields.

(F/Atia, Non-Agriculture)

The social disapproval of girls working in the fields has a religious connotation accompanied by social traditions that males work outdoors in the fields rather than girls.

Noor below, who belongs to a dignified religious caste, explained how her religious association, village and family norms did not allow working in the fields. She incorporated this element into her subject choice and accordingly decided on higher education and career.

We own quite a lot of land. But I cannot do something such as fieldwork. Because our caste is Syed; our entire village is full of people from this caste. If you look at the village, then the whole village is our family. Everybody is related to us somehow or another. So, if there are young guys in the village and we females go out and work in the fields, it can become an issue. My uncles simply will not allow me. They are of the opinion that girls should work at home and they will say that you are given a job at home and so what are you doing outside in the fields? There is an issue of “purdah” for females firstly because we are Muslims and secondly because we are Syed. That is why they are more concerned. So we have to look into these facts as well.

(F/Noor, Non-Agriculture)

The male specified gender stereotype of agriculture sciences has a palpable impact on the choice process of female students by limiting their interests. These findings present another dimension to the barriers faced by female students at the time of enrolling in agriculture education. This has not been highlighted by previous research; e.g. Bell and Fritz, (1992) found lack of non-traditional career information for females as prominent barriers. Though female participation has increased with the passage of time in agriculture education, the effects of gender remain significant in determining the career orientations of females in Pakistan. The female students below stress how social pressures and traditions play their part in defining the career choices of female students:

At F.Sc I would say that the boys may think about their career but girls do have social and family pressures.

(F/Sadia, Non-Agriculture)

If a girl wants to do something which is not bad but against the social values, then she cannot do that thing, because people will not let her to do that. It is difficult for girls to do something against the social values.

(F/Umeia, Non-Agriculture)

Although even today girls' participation in jobs requiring fieldwork is not welcomed by society, nevertheless a change in behaviour of students can be seen over the last five years. New and potential entrants in the agriculture education view agriculture as more attractive and plausible. The gender implications on career choices were highlighted more by senior students (who started their agriculture education four years earlier); both agriculture alumni and non-agriculture post-graduates. Younger female students (college students or university freshmen) had broader vision. They condemned gender segregation, disparity and stereotype in agriculture education and profession (Johnson, 1996). The following HSE student, although aware of the gender implications in Pakistani society, was not in favour of associating agriculture with males only:

Yes because boys can do fieldwork easily. They do not have restrictions in going outside and doing fieldwork. Females have restrictions imposed on them that someone should accompany girls (when they go out to do fieldwork). It is understood like that. But today things are different, these days men and women work together. So, I think it is not a big deal for women these days to work in the fields. I am of the opinion that this is not as great an issue as it is considered. It is not necessary that only men join this (agriculture) field.

(F/Faiza, F.Sc.)

Furlong and Biggart (1999) found that implications of gender on students' vocational aspirations do not weaken as they mature but rather have a tendency to persist. Similarly, the career choices of agriculture students, especially those of females, continued to be influenced by their gender. Major selection by girls was more likely to correspond to their gender roles (Baker et al. 2011; Mangheni et al. 2010). Bell and Fritz, (1992) found that females tend to be concentrated in a few specializations within agriculture discipline, e.g. for the current research the majority of the girls were concentrated in Food Technology and I had to purposefully search and request a few male students from FT department to give their insights in order to capture diversified opinions. Students explained that FT discipline merit was high because greater numbers of girls choose FT as their major. Since girls academically perform better than boys and have (on average) higher C.G.P.A, the overall merit of FT department was higher without any market forces influence.

One example of a female student exhibiting a gendered pattern of major selection is presented below:

A: I think this is the best field and I like this major (FT). And this is suitable for girls too.

Q: 'Suitable for girls' means?

A: Because in this major no fieldwork is involved and this is kitchen sort of work and girls can do it better.

(F/Aqsa, Pre-Agriculture)

Although Barclay and Parrish (2005) found that gender was not an influential factor for agriculture students at the stage of major selection, evidence from the current study has revealed otherwise as gender does impacts on the major selection of female agriculture students in Pakistan. The respondents' choices reinforce the ideas that occupational choices and available options are subject to gender perceptions (see Fouad et al. 2008; Francis, 2002; Furlong and Biggart, 1999). The broader social norms associated with the type of female jobs impact on the way these students make their job preferences.

In Pakistan, especially rural and religious families do not allow female members to develop professional identity in occupations other than those which are perceived appropriate for girls by society. The case of Noor (Non-Agriculture) has already been discussed above where her family and religious bonding restricted her to work in the fields which she respected, considering them to be hardcore '*facts*'. On the other hand, a rural final year student, Rabia, had to take a stern stand for her occupational choices as an agrarian. Her parents supported her to secure higher education unlike their family traditions however they wanted her to comply with the gendered patterns of professions in the society. Nevertheless, she resisted:

I am thinking about it (career). I also said to my parents that I will do a job at any cost whether you like it or not.. In my family there is no trend of giving girls higher education...They (parents) are facing many issues because of me and they say that I have caused them trouble because our society and culture do not support this thing. My family also does not support girls to study more and work outside. They said that you could do teaching only. I said that I have studied agriculture, what can I teach in school? I told them that I would do a job.

(F/Rabia, Agri. 4, PMAS-AAUR)

There are inherent socio-cultural implications of gender within Pakistani society especially in the job market (Nasir, 2005). The experiences of Rabia and Noor confirm Fouad et al. (2008: 49) findings that females “received direct or indirect messages from their families related to gender roles” and contrasted with Maxwell et al. (1996: 275) findings that “girls no longer appeared to be disadvantaged by the traditional gender role ideology with regard to occupations”.

The problem with working ‘outside’ and in the fields which has been highlighted time and again by female students at every stage of the choice process is also a reflection of the matter of security. Female security is an issue which Faiza (above) also mentioned that somebody has to accompany females when they step out of their domestic domains. Batool (Agriculture Alumnus) who has been very active in her academic and professional life as an agrarian also acknowledged that security is an issue for girls. However, with modern means of communication and transportation, this insecurity is diminishing, thus allowing girls to work in occupations that involve fieldwork.

...now the trend is changing and girls are joining fieldwork jobs as well. Now the life has modernized and they are providing facilities for the girls, which is why they are also coming into this field. Now we have no problem of transportation and no problem with anything else as we have mobile phones. We can contact anybody at any time and we also have internet in the mobile phones so all these things make you feel more secure.

(F/Batool, Agriculture Alumnus)

The perceptions that fieldwork and agriculture professions are inappropriate for girls has been deeply rooted in the society and also influence students’ career decisions after

completion of education. These are magnified in the form of gender differences in the professional field of agriculture sciences due to both, female preferences based on the above discussed issues as well as employers' discrimination (Gupta, 1993). In response to the query of whether gender influences career choices, a final year agriculture student replied:

I think it does for girls; it is more difficult to work in the field. People usually discriminate against girls when they apply for jobs.

(F/Nasira, Agri. 4, PMAS-AAUR)

As Nasira highlighted, female career aspirations are subject to gender discrimination within the employment sector (Ashton et al. 1982 in Furlong and Biggart, 1999). Nasir (2005: 76) confirmed that in the professional world in Pakistan, "some occupations are labelled as men's and some are labelled as women's occupations and stereotype employers just follow the tradition rather than using job requirements". This ultimately places barriers on females' choices of entering occupations which are labelled as male dominated, in this case, agriculture. Speaking of these gender inequalities and discriminations in the job market of agriculture graduates, Amina compressed her academic and occupational experiences to conclude that females do face gender issues in the field of agriculture sciences.

Being female and after studying agriculture I think this field is not suitable for girls. Only boys should study this field... the jobs related to my field are totally industrial. When there are job openings, they prefer boys and practise gender discrimination and most of the time these industries are in the remote areas, thus girls also avoid going into these areas. This industry environment is not suitable for girls as there are day and nights shifts and that is not suitable for females...

boys should enter this field as there are lots of opportunities for boys in this field. But girls have a lot of issues like travelling and residence. Girls should do MBBS or teaching and they should not come into fieldwork. Lectureship is the best field for the girls.

(F/Amina, Agriculture Alumnus)

Considering the opinions and experiences of female students in agriculture sciences, the issues of female participation, subject choices and occupational choices in agriculture sciences and the gender issues require particular attention (Mangheni, 2010). Hodgkinson (2008) also stressed that data should be gathered and analysed to explore the implications of gender on choices. He concluded that people do not explicitly talk about gender issue while discussing education and career choices; however, respondents in the current study gave bold statements regarding the gendered image and male dominance in agriculture sciences. Many had the opinion of out casting female students from this field. While discussing if there were any gender issues in this field, some students replied:

I just wondered why girls are here, in agriculture. For boys this profession is preferable and good.

(F/Mehorz, Non-Agriculture)

One question that comes to my mind is what is the purpose of girls in this university? This field should be totally for boys.

(M/Omer, Agri. 1, UAF)

Moreover, confirming the socio-cultural restrictions of females entering a male dominated field, Rabia boldly admitted that a girl would require ‘guts’ in order to make such kind of decision:

Q: So if you come across somebody who is studying agriculture and she is a girl, how would you feel about her?

A: I will salute her that she has the guts to study this field. I think it's a bold decision.

(F/Rabia, F.Sc)

5.3 Role of Social Prestige Associated with Various Professions

The ideas of what to study and which career to adopt are deeply entrenched in social traditions and cultural norms (Furlong, 1992: 108) and can be predicted and understood through the general beliefs and attitudes of the society (Sutphin and Newsom-Stewart, 1995). People aspire to those professions, which establish their social standing and have an element of social prestige rather than those which merely satisfy their needs (Baker, 1992: 167).

One of the most recurrent themes highlighted by students for ‘not choosing’ to study agriculture was the degree of respect attached to various professions. The theme comprises of two categories. Firstly some professions, namely medical and engineering are highly respected in Pakistan, eventually attracting the majority of students. Secondly, agriculture education and profession not only lack such level of prestige; rather it is categorised as an un-respectable profession. For this reason agriculture students experience considerable discouragement and opposition while choosing to

study agriculture. Both agriculture and non-agriculture students frequently referred to the larger socio-cultural perceptions of ‘respectable’ professions and ‘not-so-respectable’ professions while discussing educational and occupational choices, particularly at the first and third stage of the choice process elucidating that public images play a decisive role in joining particular professions (Foskett and Hemsley-Brown, 2006). Both categories are discussed in detail below.

5.3.1 ‘The Trend’: The Highly Respectable Professions

...it’s the trend that one should study medicine or engineering because you earn high respect in these fields. This is how students develop interest in these fields.

(M/Khawaja, Agri. 4, PMAS-AAUR)

The ‘trend’ represents the widely regarded and preferred educational and occupational choices in the society. Choice process is initiated at an early age through the messages and images communicated to students regarding various professions (Foskett and Hemsley-Brown, 2006). As mentioned in the previous chapter, agriculture education was not the first priority for the majority of the respondents. The rationale students gave for their first choice of professions other than agriculture was the general ‘trend’ in the society.

In Pakistan, the trend is that at F.Sc. level the students just know about two professions: one is doctor and the other engineer. They know nothing else.

(M/Sial, Agri. 4, UAF)

At the beginning of the choice process, students’ considerations are influenced by the dominant preferences within society. The over emphasis on a few subjects and

professions by the people at large escalates their position in the priority list of students' educational and occupational choices. These wider assumptions shortlist the number of options considered at the initial stages of the choice process. The 'trend' of studying a few professions restricts students from thinking, considering and exploring a variety of academic fields.

These 'trends' create barriers in students' choices to study agriculture. The mind-set of people preferring the medical and engineering profession develops ignorance towards other potential professional opportunities. While enquiring why a few professions are much preferred over others, Saba drew attention to the general perceptions regarding educational and occupational choices in society:

We have set our minds in these directions. In this society, people only know about two things engineering and medical field and nothing else. If we look around there are many fields other than these two.

(F/Saba, Agri. 1, PMAS-AAUR)

Referring to the same issue, Noor below endorses the excessive importance given to medical and engineering.

In our society, nothing else is more important than medical. People are more inclined towards medical. It is either doctor or an engineer....

(F/Noor, F.Sc.)

In response to these assumptions, Noor firmly decided at the time of interview that she will join the medical profession. She maintained that it was the degree of respect

associated with the medical profession that attracted her towards it. Noor mother's education ceased at F.Sc. (pre-medical), yet the people in their native village gave her immense respect because her educational qualification was associated with medicine. If someone in her village was hurt, e.g. burnt their hand, they used to consult her mother as if she was a doctor which eventually made her mother feel important. Hence, these personal observations of the value and prestige associated with the medical profession led to her decision to study medicine. She further explained that

...being a doctor is considered honourable... I have noticed that in our society, if a person is telling you that he or she did not get admission in medical and then they switched to agriculture or something, it means that they are not intelligent. People will think that he or she is an average student. The person who gets admission to medical college is considered clever and intelligent because getting admission to medical is not an easy task. They are respected for that. For the parents too, it is a great honour that their child secured admission in medical college...

(F/Noor, F.Sc.)

The choice of medical and engineering profession by the respondents and by the wider society was raised because of the 'trend' that was subject to the prestige these professions had in the society. Engineering profession accounts for high prestige value (Opara et al. 2006) and similarly students feel that joining the medical profession will ensure gaining respect in the society. Different students used different expressions to communicate that being associated with medicine or engineering means earning respect:

...at that time, being an engineer was considered excellent. Secondly, engineers have their special value in society. I think engineers have immense respect in society.

(M/Waqar, Agri. 4, PMAS-AAUR)

...it is a craze and people feel charm in this field. Everyone thinks that they will gain prestige if they study this.

(M/Naeem, Agri. 4, UAF)

When someone introduces him/herself as doctor, people respect him or her more.

(M/Kashif, Agri. 4, PMAS-AAUR)

The social values give students the impression that joining ‘medical’ and ‘engineering’ professions inherently brings prestige. These general attitudes communicated to the students through ‘word of mouth messages’ in society develop preconceptions among students regarding various professions, which ultimately impact on their educational and career choices (Hemsley-Brown, 1999). This is true in the case of agriculture in Pakistan. Asma below explained how these ‘traditions’ of striving for a few professions in Pakistan influence students’ choices:

It has become part of the society that every parent wants to make their kids doctors or engineers as they think that there are no other respectable and reputable fields. Also there is lack of information about the benefits of the other fields. There are lots of other fields like economics, business, accounts etc. But people don’t think about any professions other than doctors and engineers.

(F/Asma, Agri. 1, UAF)

Students plan their choices based on these wider beliefs and eventually become the ‘victim of this tradition’ (F/Asma, Agri. 1, UAF). Zahid (Agri. 4) expressed that “80% of the people in our society think that they have to be either doctors or engineers”. He might have over-estimated the ratio; however, his point was that these notions are significantly dominant in Pakistani society. This has also been confirmed by a field

experience, when I interacted with F.Sc. students and could not find many who were considering the agriculture profession (as either their first, second or third choice). The trend of favouring a few professions (may they be medicine, engineering or any other) steals the spotlight and places other professions in the shadows. The experiences and opinions of the students in the current study are in coherence with the students in Dobbins et al.'s (2002: 6) study:

They have always heard, “Be a doctor” or “Be a lawyer,” but they never heard “Be an animal researcher,” or “Be an Agriculture Teacher” or other careers related to agriculture. The majority of the students noted that they felt pressure to pursue high profile careers.

The eminency of medical and engineering professions restricts exploration, awareness and ultimately consideration of other professions. The belief that there are only a few professions that earn high respect, prestige and are higher in status (Johnson, 1996) places barriers in choosing agriculture sciences and pursuing career in agriculture. Students' choices emerge as a result of ‘the desire for respectability, coupled with a lack of knowledge regarding alternatives’ (Siann et al. 1990 in Lightbody et al. 1997: 69).

5.3.2 Disregard of Agriculture Profession

“You bloody agrarian! Do anything but just don’t be an agrarian”.

(M/Abbas, Agri. 1, UAF)

This was the response Abbas received from his friends when he told them about his decision to study agriculture and he was not the only one who faced such opposition. The disregard for the agriculture profession emerged as a poignant phenomenon.

Speaking about the lack of respect given to the agriculture profession, Abbas said ‘*I have observed that only agrarian respects agrarian. Nobody else respects them*’. Especially in comparison to doctors and engineers ‘*agriculture scientists do not have equal status in the society*’ (Noor, F.Sc.). While making a comparison of receiving respect in different professions, Rabia highlighted the position of agriculture scientists in the society.

I do not think that the people give respect to the agriculture scientist... If I would be an ordinary doctor then people would still respect me. If I say that I am an agricultural scientist then people will not respect me.

(F/Rabia, Agri. 4, PMAS-AAUR)

Tahir shared his personal experiences during the course of his education as evidence of society’s lack of acceptance and appreciation of agriculture education and profession.

I have experienced it myself. When I used to go somewhere and people used to ask me what I was studying. When I replied that I am studying agriculture, they used to respond in a strange way as if it is a weird thing that I am studying agriculture.

(M/Tahir, Agriculture Alumnus)

The ‘public profile’ and ‘public understanding’ of disciplines related to agriculture is significantly low (Opera et al. 2006). This might be due to the perceptions of the general populations that farming and agriculture means paucity of wealth and resources along with tough and tedious nature of work (Forsythe et al. 2010). Agriculture education needs positive projection (Dexter, 2003) because misconceptions of this field and occupational opportunities within this field may damage effective recruitment in

agriculture education (Krueger and Riesenber, 1991). Among other scientific and technological disciplines, agriculture sciences are disparaged (Levine, 2009).

Such drawbacks due to disregard are evident from the account of an agriculture student below whose friend (a high achiever) refused to consider and study agriculture just because it is not perceived as a ‘respectable’ profession.

In intermediate, one of my friends secured very good marks... I suggested to him to take admission in Agriculture University but he flatly refused... said his marks are so good that studying agriculture is disgraceful to his academic achievement. People do not consider this field respectable. They just think that if someone has to do something respectable, they can only do it in medicine or engineering field.

(F/Saba, Agri. 1, PMAS-AAUR)

As can be seen from the choices of the student above, lack of respect associated with agriculture profession can steer students away from considering agriculture for the future. During the early stages of the choice process, students subjectively explore career choices and discard a few professions, which do not fit into the ‘acceptable prestige threshold’ (Gottfredson, 1981). For many people, being associated with the agriculture profession means that one can only be a farmer and the majority hold severe negative perceptions of this field (Dobbins et al. 2002). These perceptions among people can be attributed to the invisibility of scientific and technological professions within agriculture discipline (Johnson, 1996). Students do not comprehend agriculture graduates as professionals or a discipline having professional status (Onuekwusi and Ijeoma, 2008).

Such misconceptions are apparent from the account of a non-agriculture student. She recalled that when she took admission in agriculture university:

At that time I did not know about agriculture... then I came to know about this field. I found it very strange and I wondered what they (agriculture students) will do in future because they will be farmers at the end of the day.

(F/Sadia, Non-Agriculture)

The importance of information in the educational and occupational choices of agriculture students has already been highlighted at various stages of the choice process in the previous chapter. However, the public are also not educated about the career possibilities in agriculture profession (Johnson, 1996) which gives rise to a distorted image of this field. Students and parents with prior agriculture education and experience hold more positive attitude towards agriculture education as compared to the general population (Osborne and Dyer, 2000) and these attitudes further affect the decision to enrol in agriculture education.

People can form ‘limited and highly distorted’ images of jobs which are not publicly visible and whose work dimensions remain largely unseen (Foskett and Hemsley-Brown, 2006). Since the most visible job in agriculture sector is farming, many people discourage students from choosing agriculture sciences. A few statements below show that students were discouraged due to the perception that studying agriculture sciences means becoming a farmer:

You know people say to agriculture students “You are becoming farmers!” They discourage and taunt us on studying agriculture.

(M/Israr, Agri. 1, PMAS-AAUR)

Some of them said that are you going to become a farmer. Some were in doubt that there is even a degree in this field. Many people do not even know that there is a degree in this field and there are many misconceptions about this field as well.... However, the thing people do not know is that there are new technologies coming in this field, but the farmers do not incorporate them in their farming practices.

(M/Waqar, Agri. 4, PMAS-AAUR)

Inability to comprehend the link between agriculture education and professional prospects within the job market restrains students and their parents from choosing agriculture (Talbert and Balschweid, 2006). Due to such perceptions, people overtly and strongly discourage those who decide to study agriculture. A female agriculture student details the discouragement she faced during her choice process from the people in her family who did not know the reality of this field.

...everyone in my family like uncles and aunts think that there is nothing to study in agriculture, this is not a professional field... in my own family people tease me about what am I studying and that this is not science. They have a firm concept that there is no importance to agriculture... But people don't know that this field is also an extension of science... my uncles and aunts discourage me as they do not know and do not have much information about this field.

(F/Asma, Agri. 1, UAF)

Lack of prestige about the agriculture profession first restricts development of interest and even if students do develop interest in this field, they face considerable discouragement and disapproval from their social circle for their choice. Dealing with the social misconceptions about the agriculture profession and defending one's own degree is part of the package for students who decide to study agriculture. The majority

of the respondents of the current study expressed that they were dejected by their social circle for their decision to study agriculture at least once during their choice process and mostly at the third stage of the choice process.

The information students gathered about the prospects of the degree play a significant role during the third stage of the process for facing opposition of choices. Students, who made a well-informed and deeply rooted decision to study agriculture adhere to their idea of studying agriculture and develop a career in this profession even though people ridicule them. The following two students recall how they had to take a stand on their choices.

People used to make fun of my choice. They all asked me that what was I doing and that I should study medicine or engineering. They said that this university holds no value and I should not study agriculture... they all discouraged me. They asked me what kind of study is this and what am I doing? However, I am proud of this subject that I am studying in one of the top universities of Asia and my degree has some value.

(M/Fehmeed, Agri. 1, UAF)

They (friends) all degraded me and discouraged me a lot... one of my fellows said to me that will I grow wheat or melons. But when I told them the techniques then they went silent. No one showed interest in this field.

(M/Fawad, Agri. 1, UAF)

People perceive that the agriculture profession has no advancement (Dobbins et al. 2002) and thus discourage those who choose this field. This discouragement can prove detrimental for the career choices of those who step into this field with a lack of information, e.g. Tahir above who expressed how he never gained respect for studying

agriculture, and at the completion of his education he changed his field when he saw the first opportunity. Many students received direct messages from people regarding abandoning the agriculture field, like Omer below:

The majority of people I met discouraged me about what I was going to do. They said that it is not a field and there is no scope in this field. They said “do MBBS or engineering, just don’t do agriculture”.

(M/Omer, Agri. Alumnus)

However, Omer did not leave this field because he entered by choice. Students who planned their choice had the rationales to defend their choices ensuring retention in the agriculture sector. For example, Kashif below faced multiple oppositions by his family and friends; however, he stood firm in his decision because he knew the details of the choice he made:

All my friends started laughing at me... they said what are you doing? Is there anything in this field to study? They said that I would become just a farmer thus I should leave this field. I told them that I will work in genetic engineering or tissue culture. Then they said that it’s okay as they were familiar with these terms. I got discouraging remarks from everywhere and I had to assert to my friends repeatedly that I was studying B.Sc. agriculture. They used to say to me “Are you mad, what are you doing, is this a subject to study? Study MBBS or something related to medicine but don’t study this”. Then I used to feel very embarrassed. I always defended my field...

(M/Kashif, Agri. 4, PMAS-AAUR)

To conclude, the comparative social value and prestige associated with professions limits the considerations of students to a limited numbers of professions only. Students do not seek information regarding the range of alternatives and especially agriculture, because apparently they feel that nobody regards agrarians as professionals. The poor image of agriculture sciences leads people to disapprove and discourage the choice of studying agriculture, which eventually complicate the choice process. Neither of these socio-cultural values favours the development of students' interest in the field of agriculture but rather place limitations at the first stage of the choice process, as well as at the third stage of deciding to join Agriculture University.

If the majority of the students focus on only a few occupations alone, there will be a greater number of people with unfulfilled dreams and desires. More people will join agriculture as a compromise rather than a choice and continuous discouragement might drift them away from this field. Even those who consider agriculture as their second or third option will give less attention to the process. In order to encourage students to consider the range of potential options at the level of higher education, it is necessary that respect and regard should be given to various professions and promulgation of negative images of agriculture should be strongly dispelled (Forsythe et al. 2010).

5.4 The Role of Parents

The educational and occupational choices of young people always occur under the influence of the family (Foskett and Hemsley-Brown, 2001). Career choices shape within family experiences (Young et al. 1997; Furlong, 1992) and parents are among the salient stakeholders of students' choices (Hodkinson, 2008). Being the important stakeholder, students have confirmed that parents have had the greatest impact on their

educational and occupational choices (Colombo, 2011; Ferry, 2003) and on their decision to enrol in agriculture education (Esters, 2007).

The influence of parents and family on the choice process transpires in multiple ways (many have already been discussed in Chapter 4). However, the current section revolves around the way parents operate in the partnership of the educational and occupational choices with their children and eventually the impact of their support on the choice process of agriculture students.

‘Choice’ corresponds with ‘autonomy’ whereas parental involvement puts a question mark on the ‘degree of autonomy’ practised by the students. Students rely heavily on the support of their parents for their educational decisions (White, 2007a) may it be financial or emotional (Fouad et al. 2007). Since education in Pakistan (at all levels) is not free, financial support from parents becomes inevitable. However, agriculture education costs significantly less than other professional degrees in Pakistan, thus students or their families did not face issues of bearing the cost of the degree. However, emotional support has emerged in multiple categories influencing the choice process differently. Each is discussed in detail below.

5.4.1 Parental Support Based on Expectations to Succeed

The first type of parental support reflects provision of ‘autonomy’ and ‘freedom’. Parents allow children to make their own choices and decisions regarding academic and career paths and give clear messages that the final decision has to be taken by the students. Transferring the power and responsibility of making the decision to the students by parents does not imply that parental role vanishes from the choice process.

Parents do not direct students towards particular educational and career paths, rather they engage with the students regarding their choices by exhibiting support, encouragement, along with the liberty to choose, as in the case of Nayab below:

They never instructed me on anything in my subject selection. They said whatever you want to study go for it. My father and mother are very supportive in this case... my mother always maintained that wherever our interests are, we should go for that... I don't have any pressure from my family in choosing the majors.

(F/Nayab, Agri. 1, PMAS-AAUR)

The provision of liberty to students in the educational and occupational choices represents a 'laissez faire attitude' of parents, placing supremacy on the satisfaction and pleasure of their children (Swift, 2009). This can be seen from the response of Faiza's parents:

They say 'do whatever you like and whatever is easy for you... I asked my mother that if I do not get admission (in medical) then I want to join agriculture so is there any issue with that. She said 'No! It is all up to you. Do whatever is easy for you'.

(F/Faiza, F.Sc.)

However, giving autonomy in decisions regarding educational and occupational pathways did not include support to leave education. Support and permission to practise choice was conditional to continuing education and limited to choice within academic and professional alternatives. Parents gave implicit and explicit messages to their children that they are supposed to continue their education to degree level. Such support becomes very important for those students who do not succeed in gaining admission to their first (and sometimes only) choice of higher education. Failure to join the preferred

field can make students emotionally disturbed and disheartened. They might lose hope of succeeding in academic and vocational paths. However, parental support and encouragement to continue studying in any alternate area of interest can actively engage them in the choice process.

E.g. Kahif failed to secure admission to medical college and started losing hope; his father played an active and encouraging role:

My father said that 'You have to continue education'. Whatever field I choose, he will support me but he stressed that I should continue my education... My father said that whatever field I study, education would benefit me in the end...

(M/Kashif, Agri. 4, PMAS-AAUR)

This encouragement led Kashif to explore other available options and after careful evaluation, he decided to join agriculture education. Furthermore, parents also communicate while delegating power to their children that it is expected that whatever choice they make, it leads to success in life. It is not merely autonomy that is being handed over to children; rather they are also made to feel the responsibility that has come on their shoulders. The following excerpt shows that Mishayel's parents gave 'freedom' of choice yet communicated that she has to make a responsible decision that will allow her to excel:

They said 'Do whatever you can do the best'. They gave me full freedom... So the whole decision is my own.

(F/Mishayel, Agri. 4, PMAS-AAUR)

Similarly, Ali's father gave him freedom in his educational choices but gave him very detailed ideas of his expectations from him:

My father always encouraged me in every respect; he used to say do whatever you want to do but do it well rather than doing it poorly in the end... He just wishes that whatever I do, I should do it well enough, because he thinks that if I am not committed and honest with whatever I study, it will be of no use in the future.

(M/Ali, F.Sc.)

In cases like the above, students are advised to choose those paths which warrant success in academic career, profession and broadly speaking, life. However, students do not perceive that their parents are being restrictive; rather they comprehend their expectations and implicit conditions as supportive behaviour because of their receptive attitude. Such parental support in an empathetic and warm family environment encourages students to actively engage in career exploration (Kracke, 1997). Students look for avenues that have the potential of providing them with a successful life and search for detailed information regarding available alternatives.

This ultimately facilitates the choice process. If students come across stimulating and detailed information regarding agriculture while exploring their avenues, there is greater likelihood that they will join this field 'by choice'. Although parental encouragement appears to have an explicit and prominent role until a student joins a particular field, as discussed in Chapter 4, entry by choice has lasting impressions on the educational and occupational choice process of students and thus the significance of parental support is very long lasting rather than temporary.

However, if the gendered and social image of agriculture (see discussion above) intercepts with such kind of parental support, it might not have equally fruitful results for agriculture recruitment. Since students are advised or encouraged to join the ‘best’ and ‘successful’ educational and career paths, agriculture does not appear to be among such options due to social barriers accompanied with lack of information. An example can be Atia’s case where her parents were highly supportive, as she recalled:

She (mother) did not interfere in my studies as such. She just said that ‘Do whatever you want but do it well and study something in which you have some scope’...

(F/Atia, Non-Agriculture)

Although she was given full liberty to make her educational choice, she was also encouraged to opt for a field of study which had ‘scope’. She knew about agriculture education because her cousins studied at an agriculture university. However, she did not consider agriculture as an option due to social values attached to the medical profession. Even when she could not realize her dream, she did not opt for agriculture because of the social barriers involved in the gendered perception of fieldwork in agriculture.

The parental support discussed in this section might appear unconditional to the students. However, in reality parents are profoundly involved in the choice process through communicating and setting standards for students. “It is a natural instinct for parents to want the best for their children” and to feel “ambitious for their children and want them to do well” (Swift, 2009: 171). However, parents’ receptive and compliant responses give students the chance to practise choice. This also facilitates career exploration and active involvement in the choice process facilitating entry into an

academic and vocational field by ‘choice’. The findings contrast with Jones et al. (2004) stance that such kind of parental behaviour diminishes young people’s confidence and accounts for loss of maturity rather than making students feel more responsible and accountable for their decisions and thus attempt to contemplate intellectually on their choices.

5.4.2 Support with Suggestions

The second type of parental support delivers to young people autonomy to choose their own educational and career path. However, rather than merely advising to aim for success, parents also indicate particular paths for their children to follow. This type of parental involvement plays a significant role in providing information about plausible educational and occupational choices (see section 4.1.1.2). Parents explicitly give ideas, guidance and suggestions regarding desirable and preferable educational and occupational choices. Although they communicate to their children what they want, they also show full support and tolerance to their children’s career choices. Both elements, of recommendation and liberty, stimulate ideas and instigate the choice process (Swift, 2009).

In the excerpt below, Natasha recalls why she chose to study biology and how her parents guided and supported her:

My father was a doctor. He wanted me to study science and I like biology myself as well. I liked science... Biology was my personal choice. My parents wanted that but they never forced me... After matriculation my mother said that whatever I wanted to study, I should go for that.

(F/Natasha, Agri. 1, PMAS-AAUR)

Many parents who keenly regard the education of their children also show interest in their future career. However, while projecting their ideas and making suggestions, they remain open to any decisions and choices children make on their own. Sial in the excerpt below clearly shows this combination:

Because I was an intelligent student, my father and teachers suggested that I should study science. My father wished that I should be a doctor or engineer but at the same time he did not impose anything on me. He said “Do whatever you like”.

(M/Sial, Agri. 4, UAF)

As in the case of Sial above, some parents guide and motivate their children in particular career pathways, communicating their desires regarding the career choices of the children. Meanwhile, they also encourage them to explore and choose among available alternatives in case they do not feel contented with their proposals. Such advice does not categorize as pressure or compulsion because parents act in a way receptive of their children’s educational and occupational decisions even when they are different from their own. Imran’s statement below shows that his parents gave him full support in his educational choices when he was at the stage of getting admission to a degree course. His parents told him that they will be happy if it were be a technical field.

They said that if I could get admission in a technical field then it would be great. So basically they supported me. They said that I should study devotedly... I should get a good GPA in it so that I could easily get admission to M.Sc.

(M/Imran, Agri. 1, PMAS-AAUR)

There are two possible outcomes of such kinds of parental support. If students do not feel satisfied with the proposed options, they search for plausible alternatives since they have the liberty to choose. This facilitates career exploration and searching for alternatives that are better than the one proposed by their parents. In order to find sound rationales for their choice, they actively search for detailed information. Thus the decided outcome may be either the one proposed by the parents or the one students researched themselves represents true elements of choice and active engagement in the choice process.

However, some students will simply accept the suggestion made by their parents rather than searching for and choosing among alternatives (Hodkinson and Sparkes, 1997). This supportive character of the parents can have an inspiring effect on their children where they internalise the aspirations of their parents and make goals that correspond to the wishes of their parents. This is evident from the case of Rabia below who explained her career goals in terms of her mother's desires.

I will do my best effort to become a doctor. I want to become a doctor because my mother wants this... She motivates me a lot... my mother makes an effort. She taught us from class 1 until matriculation but now she says that 'You are at such a stage that you have the sense to go ahead yourself'. However, my mother always says, in fact even last night she was saying, that I should become a doctor and to my younger sister she was saying that she should become an engineer.

(F/Rabia, F.Sc)

Although Rabia's mother clearly expressed a preferred career path, it is worth noting that she also explicitly stated that they could choose as they liked and they have the power to make their own decisions. However, Rabia chose to follow the academic and

vocational path that her mother suggested. Making educational and career choices solely in order to fulfil parents' desires restricts actively engaging in the choice process. The situation becomes complicated when students fail to realize the dreams of their parents. Planning and concentrating on only one option can place students in a situation where they find themselves emotionally disheartened and disturbed in case of failing to achieve their goal. Similar to the above case, Aqsa desperately wanted to become a doctor just because it was her mother's wish but she failed to secure admission in a medical college and joined an agriculture university; yet she clutched on to the thought of becoming a doctor:

I just wonder if I can ever fulfil my mother's wish as she really wanted me to be a doctor and supported me a lot throughout my Matriculation and F.Sc. So I just wanted to do MBBS still, just for her.

(F/Aqsa, Agri. 1, UAF)

Feelings like this can hinder the choice process and adaptation to the new choices in case of failure to realize the first one. The desire to please parents might place pressure on young people (Swift, 2009). Students get emotionally disturb when they feel that they have disappointed their parents by not fulfilling their wishes. During fieldwork a female respondent broke into tears while explaining how disillusioned she felt for not being able to secure admission in a medical college because she desperately wanted to do so in order to make her parents happy although they did not put pressure on her. She felt ashamed for letting her parents down. Thus, continuous and explicit directions given by the parents can limit students search for alternatives and they might merely internalize the choices of their parents without engaging in the choice process.

5.4.3 Parental Pressure

Jones et al. (2004) argue that while evaluating parental involvement, differentiation between encouragement and pressure can be a challenging task. However, in the current research this was not the case. There was an obvious difference between the two categories because those parents who put pressure on their children regarding their educational and career decisions did not give them autonomy to choose otherwise. Pressurising parents compel their children to fulfil their expectations, and exhibit a coercive role. They neither ‘convince’ nor ‘encourage’ children for particular career paths nor reason with them for the decision they make. They merely communicate what they have decided for their children giving clear messages that there is nothing to ‘choose’.

Nasira’s father directed the educational and occupational destinations of all of her siblings. Her father throughout his life worked with doctors as a dispenser and his fascination grew so strong that he imposed his fascinations on his children regardless of the fact that the particular student never wanted to be a doctor.

I took biology in intermediate because my father wanted me to become a doctor... Since my childhood my father wanted any one of his children to become a doctor. My elder sister took arts and he wanted the rest of his children to study science... I never wanted to be a doctor; it was not my choice ever.

(F/Nasira, Agri. 4, PMAS-AAUR)

The imposing and restricting role of the parents in the educational and occupational choices of the students ultimately leads to no ‘choice’. Parents give a readymade decision with limited or no alternative. Eventually, students simply take on what has been decided by their parents based on parents’ perception of what is most appropriate

(Fearn, 2010). Even if a student has an articulate interest in some particular profession, still parents ‘force’ them to opt for particular choices. E.g. Anum expressed that even when she had a lucid choice her father did not allow her to practise that choice:

My first and last choice was to be a lawyer but my father forced me to choose biology in F.Sc... My father said, “No, you have to study biology” because he wanted me to become a doctor. Then I had to study biology, as I had no other choice.

(F/Anum, Agri. 1, UAF)

Parents force their children to comply with their choices because they have different aspirations from their children (Jones et al. 2004). The ‘pushing’ and ‘controlling’ behaviour of parents is categorized as negative (Way and Rossmann, 1996) because the directive, demanding and forceful attitude of parents does not produce many fruitful results but rather give rise to anxiety and displeasure among children. Kanwal (F.Sc.) experienced extreme parental coercion mainly because her parents wanted her to be a doctor. She expressed great displeasure in her parents’ reaction towards her choices and their stern stance on the career path they chose for her.

I studied biology because my father wished there to be one doctor in our family so the first experiment was done on me... My mother wished this more than my father did since my childhood... I wish to teach Urdu but I cannot do it.

(F/Kanwal, F.Sc.)

When Kanwal was asked that if, by chance, she failed to secure admission in a medical college, had she thought of an alternate choice, she replied:

No, they do not think about anything besides MBBS. They said that I should concentrate on MBBS and do not think of anything else. They said if you know that you can do something other than MBBS then you will not do it well, so just concentrate on MBBS... the second choice would be my parents' choice, and the third choice would also be my parents' choice. I don't have a choice of my own.

(F/Kanwal, F.Sc.)

Restricting contemplation regarding alternatives represents extreme parental control. Kanwal wanted to study Urdu but her choice was rejected. Then she told her parents that if it were essential that she studied science, she would prefer to study engineering. However, they again refused to support her choice and ultimately she surrendered. Students either do not feel like engaging in their choice process because they know it will be of no use or they are not allowed to do so because parents have made the final decision regarding the career of students and they accept that they have to comply 'at any cost' (F/Kanwal, F.Sc.).

Fulfilling 'parents' expectations regarding education and careers can cause a poor relationship between the individual and the chosen career, as well as estranged family relationships and poor mental health (Way and Rossmann, 1996). Parental pressure leaves lasting impressions on the choice process as well as on academic and professional life. E.g. Ghulam (Agri. 4, PMAS-AAUR) and Ahmed (Agri. 4), both were forced by their parents to take admission to agriculture university. Although they resisted the choice of their parents, they failed to convince them. Since they did not enter the field 'by choice', these students faced numerous challenges in developing interest and securing good grades in the agriculture university.

The data revealed that parental pressures were more pervasive during the early stages of

the choice process and students did not refer to the choices and decisions of their parents influencing the later stages of the choice process. This can be attributed to the young age and weaker power to resist parental pressure. Ahsan (Agri. 4, UAF) pointed out this phenomenon. He faced considerable resistance from his father on his choice of studying agriculture because his father desperately wanted him to be a doctor and for that reason, he forced him to study premedical.

Q: Why premedical?

A: Because he had made up his mind that his son should be doctor, that is why he pushed me towards medical.

Q: Did you tell your father that you did not want to be a doctor?

A: Yes but that is an age when a person has weak willpower and cannot resist. So I could not say anything and continued according to my father's suggestions.

(M/Ahsan, Agriculture. 4, UAF)

A notable similarity in the cases that experienced parental pressure or directions regarding academic and career choices was parents' over-emphasis on a few 'preferred' professions. Parents prefer that their children opt for professions other than agriculture (Johnson, 1996). If parents keep forcing children to join 'respectable' professions and do not allow them to participate in their own decisions based on their interest or ability, it will significantly influence their commitment and satisfaction levels as regard to their education and their profession. Moreover, due to high merit in a few professional fields, not all students are able to enter the preferred professions. When students are unable to fulfil the demands of their parents, they step into a position where they know almost

nothing about which way to go. This in turn makes it comparatively difficult for them to move forward in the choice process.

With a highly demanding, directive and restrictive role, parents hardly leave room for the student's own input in the decision and unlike Swift (2009), Payne (2003) and Foskett and Heskeht (1997) conclusion, there have been considerable numbers of cases where parents dictate educational and career choices to their children. In fact, such parental pressures are explicitly expressed and widely recognized by students. Tahir (Agriculture Alumnus) based on his observation and experiences spoke for the common practice of parents in Pakistan.

If you ask a parent today, whose son is in F.Sc., what do you want to make your child, they will either say engineer or doctor or they will say that they want to make him an army officer. If you ask the students in a solitary situation, they will start crying. They will say that they neither want to become an engineer nor a doctor; they do not want to become either of them. The daughter will say that she wants to make sculptures. Parents do not listen to the voices of their children's hearts in what they want to do.... These are our social constraints, and into these issues we need reality based insights.

(M/Tahir, Agriculture Alumnus)

Rather than promoting awareness about the possible consequence of various options and then letting the students become involved in their own decision, parents oppress the educational and occupational aspirations of their children. Such parental involvement is detrimental in facilitating the choice process or even practising any choice at all. This in turn can damage the 'confidence, maturity and experience' of young people in making choices of their own (Jones et al. 2004: 213). Such parental practices regarding the

educational and occupational choices of students need immediate attention if students are to be encouraged to make their own choices and engage in the choice process.

Summary

Educational and occupational choice has emerged as a complex process that transpires in a combination of multiple factors and “even strong research findings seem to ignore such complexities and fail to take into account the socially embeddedness of the choice process” (Paton, 2007: 2). These complexities are explored by analysing the way various personal and social factors influence the choices and the choice process of agriculture students. As the findings in Chapter 4 revealed, studying agriculture was not always (in fact rarely) the first choice of agriculture students in Pakistan due to the factors discussed above. These factors (locality, gender, social prestige and parental support) can either facilitate or hinder the choice process in various forms that extends our understanding that why students choose or do not choose to study agriculture.

The first factor discussed was the role of locality in which a student has been brought up or his residential background. Locality displayed its effects in three different ways at different stages of the choice process. Firstly, prior experiences leading to knowledge regarding agriculture among rural students helped them perform better especially during the first year of agriculture education which impacts on their academic performance in the coming years, major selection decisions and career decisions. Secondly, rural students’ landholdings²² direct their major selection decisions and occupational choices. Having access to agriculture land or an agriculture business, they aim to return to their native villages and work on their farms whereas urban students do not have access to

²² They might not own landholdings themselves; however, their parents own agriculture land which they will inherit.

such resources and thus aim to find jobs and choose specializations, which have job openings in industries, or research centres within urban areas. Thirdly, the emotional attachment with the rural community and empathy towards farmers' pitiable situations develop aspirations to work for the development of rural areas. These themes also indicate the reasons behind the shortage of qualified and committed agriculture researchers in Pakistan. As the majority of the students in agriculture sciences come from a rural background, thus for the reasons stated above, they prefer career opportunities in hometown and rural areas.

The second theme discussed the role of gender in the choice process because it influences the attitudes and beliefs regarding studying agriculture sciences (Sutphin and Stewart, 1995). Although female participation in agriculture sciences has increased over the years, the non-agriculture female students in this study still perceived gender as a barrier in choosing agriculture sciences due to the fieldwork involved. The same issue was highlighted by the female agriculture students in the study. The male as well as female respondents felt that it was difficult for girls to employ physical strength during field work and thus this field is more appropriate for boys as compared to girls. Furthermore, due to the social and religious issues regarding female safety and security, students and their parents feel that field work in professional life is not a good option. These issues influence the choice process at the first stage where females do not consider agriculture sciences. Moreover, at the fourth and last stage of the choice process, female major and occupational choices also reflect the gendered effects discussed above.

One of the most recurrent themes explaining why students chose particular careers other than agriculture was the degree of ‘respect’ associated with various professions in Pakistani society. People at large consider few professions (mainly medical and engineering) as highly dignified and this in turn shapes students’ aspiration²³. Furthermore, the social image and respect of agriculture sciences and professionals are considerably low. Students who chose to study agriculture faced stern opposition and discouragement for their decision at the third stage of the choice process. This particular factor restrained students from aiming for agriculture sciences at the first stage of the choice process, creating difficulties at the third stage and proving detrimental for agriculture retention especially for those who did not ‘choose’ or aim to study agriculture.

Lastly, the chapter discussed parental involvement in the choice process highlighting three types of parental support. Parental involvement profoundly impacts the degree of ‘choice’ practised by the students. In the first type, parents show full support and provision of autonomy to their children in their educational and occupational choices. However, they give explicit messages that support is conditional to choosing an educational and occupational path and not leaving education. Furthermore, their support also comes with strong encouragement aiming for success in life. In contrast to Jones et al.’s (2004) conclusion, such attitudes facilitate students to engage actively in the choice process and in making careful, calculated and cognisant choices. It also encourages them to actively explore career paths in the second stage of the choice process.

²³ These findings are in contrast to Avan et al. (2003) where medical graduates in Pakistan did not consider social factors such as prestige and encouragement while choosing their specialization. However, in light of the current findings, their conclusions might stand valid in their context because medical graduates have already catered to the social factors of prestige and respect by joining the medical profession and thus consider other factors while choosing specialization.

However, combined with the gendered perceptions and social image of careers in the society, it might lead students away from agriculture sciences.

The second type of parental support exhibits a combination of autonomy along with suggestions of plausible career paths by the parents²⁴. Parents give clear indication to fields of study and professions they feel are the best; at the same time, they allow career exploration and are receptive of their children's decisions. In certain cases, such support can also lead to accepting parental suggestions without any career exploration due to the desire of fulfilling parents' aspirations. The third type exhibits extreme parental coercion and pressure where parents impose their choices on their children, eventually eliminating 'choice' from the whole decision. Contrasting with the findings of Swift (2009), Payne (2003), Foskett, and Heskeht, (1997), parents dictate educational and career paths to their children. In the long term, this can lead to confusion, displeasure and issues of career instability among children.

In light of the analysis presented in Chapter 4 and Chapter 5, some recommendations arise which can facilitate the enrolment of students in agriculture sciences and can retain graduates in the agriculture sector. These along with recommendation for future research and limitations of this study are presented next in the conclusion chapter of this thesis.

²⁴ In most of the cases, parents' preferences were in line with the general 'trend' of the society which focuses on medical and engineering professions.

Chapter 6

CONCLUSION

Introduction

This chapter is divided into five sections. The first section summarises the main findings of the research. In doing so, it refers to the main objectives of the study delineated in Chapter 1 and how those objectives have been achieved by answering the research questions. The second section illuminates the contributions this research has made in the field of educational and occupational choice, especially in the context of agriculture students. However, these contributions were subject to the various limitations encountered during the research, which are outlined in the third section. The fourth section makes recommendations stemming from the findings of the study. The chapter concludes with my brief final remarks on the study.

6.1 Summary of the Findings

The first objective of this study was *to develop an understanding of the educational and occupational choice process of agriculture students in order to deal with the poor enrolment in agriculture sciences, and the career choices of agriculture graduates outside the agriculture sector in Pakistan*. To achieve this research objective, it was necessary to understand the educational and occupational choice process of agriculture students in Pakistan and through investigating the role of various and their effect on the choices.

The analysis of the data revealed six stages, from the beginning of the choice process to the final point of entry into employment. These six stages helped in suggesting policy solutions for ensuring the recruitment and retention of agriculture graduates.

The choice process in Chapter 4 has been presented through a plant analogy, where a farmer undergoes a number of stages in the process of growing a plant. The analogy has helped to capture the combination and complexity of individual agency and structural features. The farmer represents the student, the chooser. The seed which eventually grows into a plant bearing fruit represents the choice and the way it matures, whereas the soil and environment within which the plant grows represent the structural influences on the choice process.

The first stage, ‘Sowing the Seed’, comprises of two features: *knowledge or awareness* about agriculture sciences, and *consideration* to pursue that option in the future. Neither *information* nor *consideration* alone can move the choice process forward. The sources of information at this stage include personal experiences, family, friends and community members, and these sources work as ‘choice initiators’ or ‘catalysts’ (Foskett and Hesketh, 1997). These sources, besides developing awareness regarding the academic field of agriculture sciences, also stimulate ideas by providing rationales to consider it as a future option. Although the majority of students start thinking about their profession early in their lives, this is not uniform and universal. Some students do not contemplate their future academic and career paths until their HSE.

The second stage, ‘Sprouting Roots’ involves maturing early aspirations by acquiring *detailed information*. Since the information gained during the first stage is not detailed,

students purposefully and actively search detailed information about their initial goals and preferences in order to make a planned decision. However, neither do all of the students display equal levels of inquisitiveness nor does every student instantly start to collect information after having considered one or more options for higher education. The earlier the first stage is experienced, the sooner the student moves forward to the second stage and enjoys ample time to seek relevant and adequate information.

The social structure plays an important part by providing the required information without much effort or deliberation. The spontaneous flow of information from the social circle helps to move the choice process forward. This stage not only builds upon the first stage, but can also lead a student to re-experience the first stage by exposing him or her to a new field of study, in turn resulting in multiple options being considered by students. This highlights the non-linear nature of the choice process and important ‘turns’. Students then gain information about those options in order to choose one option at the later stage of the choice process.

The third stage of the choice process, ‘It is time to Sprout’, transpires when students decide upon their admission for higher education. The timeframe within which this stage is experienced is strongly connected to the prior experiences of the students. Those who initiated the choice process early, and utilized time and resources to gain information, make decisions about higher education and institutions during their HSE. In contrast, those who started the process late are more likely to experience this stage after they complete HSE. Those who considered multiple options, based on the information they collected in the previous stage, contemplate which options are reasonable and which are unrealistic (see Section 4.3.3). Some students experience

shifts in choices because of the realization that their earlier plans are not possible, either due to the structural barriers such as institutional merit or due to their personal circumstances such as financial constraints (see Section 4.3.4). Furthermore, some students decide on Agriculture University without long term educational and career planning, and aspirations. Their decisions are based on insufficient and inadequate information and vision (see Section 4.3.6).

The initial stages of the choice process, which lead students to choose agriculture sciences, revealed the crucial role of information. Students who did not choose to study agriculture or did not have agriculture as their first priority, considered the lack of information to be responsible for their having little or no interest in agriculture (see Section 4.1.1). Moreover, at the second stage, students unable to acquire detailed information about the agriculture sciences feel reluctant to choose the option with confidence and vocational vision, whereas students with timely and sufficient information were able to decide ahead (of admission season) regarding their future academic pathway (see Section 4.3.2).

The analysis revealed that one of the most crucial problems in agriculture recruitment is that the majority of students do not know about agriculture sciences in the early years of their lives, and this lack of career information explaining professional opportunities in the agriculture sector features as a huge barrier in students' choices (Bell and Fritz, 1994). This can be because agriculture is invisible in the school and college educational curriculum in Pakistan. Furthermore, not everyone comes into frequent contact with agriculture professionals or agricultural scientists/researchers (like one does with

teachers or doctors). The most visible figure in the agriculture sector is a farmer, who is perceived to have no (technical or higher) education regarding his profession.

This ‘invisibility’ of the profession restrains students’ choices (Foskett and Hemsley-Brown, 1999). By the time students get to know about agriculture education during their HSE (when they interact with college teachers and peers), they have already developed career aspirations in professions other than agriculture and therefore feel reluctant to opt for a subject that appears new and on which there is little or no detailed information available. Thus, “careers education, or careers awareness raising, needs to begin at an earlier age, when young people are still receptive to new ideas and perspectives” (Foskett and Hemsley-Brown, 1999: 246).

These findings imply that in order to facilitate recruitment in agriculture sciences, early interventions involving the dissemination of information are essential. Introducing career guidance at the school level should be among the prime priorities of the policymakers in the education sector. Students should be introduced to the career prospects and specializations within agriculture. The education ministry can design simple charts outlining subjects and disciplines which lead to particular professions and the types of jobs available within those professions. It should then be compulsory for schools and colleges to display these charts on notice boards. The charts can include various sources of further information, in case students feel the need to explore more. Schools and colleges should have an information centre that disseminates information regarding educational and occupational alternatives and further sources of information.

These measures would ensure that more students will ‘choose to study agriculture’ and will choose to stay in the agriculture profession after the completion of agriculture education. Beside this, students who ‘chose to study agriculture’ highlighted the positive, stimulating and active role played by professionals working in the agriculture sector. Agriculture universities should therefore encourage alumni to disseminate information regarding the nature of their work and career prospects, both formally and informally. Their firsthand knowledge and experience should be utilised to make agriculture a widely acknowledged and respectable field.

The fourth stage, ‘Flowering’, starts when students join agriculture university and matures when they choose their major field of study within agriculture. As discussed in Chapter 1 and Chapter 4, this stage predominantly determines the occupational direction of agriculture students. Those students, who planned and chose to study agriculture with strong rationales and aspirations, easily settle and successfully progress into the early semesters of the degree. This in turn facilitates their selecting the major of their choice and popular specializations.

Conversely, students who joined agriculture sciences without ample information take more time to adjust to the degree. They find it difficult to adjust into an unknown domain and attempt to develop a foundation for their educational and career choices rather than solely focusing on studies. Consequently, they are more likely to score low grades during the initial semesters of agriculture education. These issues ultimately impact on their choices at the time of major selection, because students are allocated to various departments according to departmental merit. Therefore, the failure to select the desired major due to poor academic scores or a lack of information leads students to

make, yet again, an alternative educational and occupational decision without much element of choice.

The data revealed that seminars held by universities delivered impartial knowledge and proved more helpful for students while making planned major selection as compared to partial and subjective opinions of fellow and senior students. Acquisition of detailed information regarding the scope of each specialization helps students make choices that include long-term occupational goals and priorities. Such facilities are crucially important for those students who entered the field without much knowledge, awareness and long term career goals. It is recommended therefore that universities should enhance awareness about agriculture career prospects through seminars; as such student facilities are not uniformly provided in all academic institutions. This will assist in the retention of competent graduates in the agriculture sector.

The fifth stage, 'Ripen the Fruit', involves preparation for the job market through the development of professional skills and expertise. The institution contributes by allocating students to various internship opportunities. These efforts, however, can be futile if students do not utilize them. On the other hand, students attempt to increase their career prospects through gaining education beyond the graduation level. The impact of the earlier stages is reflected in the commitment and involvement of the students at this stage. Those who chose and planned to study agriculture in the earlier stages show greater levels of commitment, show enthusiasm in internships and aspire to attain higher qualifications, whereas students who drifted into this field without much deliberation lack high commitment and do not develop high career aspirations. It is recommended that agriculture universities should also design career guidance services

for their students which aim to fill the gap they have experienced in the early stages of the choice process.

The sixth stage, 'Ready to Eat', unfolds when students decide to enter the job market. The time of entry into employment varies because many students decide to first complete their post-graduation. The occupational choices at this stage appear more definite than ever before, as students can clearly identify their preferences regarding jobs. The most anticipated and common choice for almost all students was a job that was economically rewarding. However, this was not the only parameter students were using to choose a job, many were considering the non-monetary aspects within jobs while making their choices. These included learning opportunities, satisfaction and respect. Noticeable was the fact however that such values were mostly upheld by students who planned and chose agriculture as their career during the early stages of the choice process.

The unplanned choosers highlighted an unexpected theme: looking forward to an 'easy job'. These students expressed their preference for area (rural or urban) and type of job (fieldwork or lab-based) on the perceived ease of options. Although they wanted to earn a decent livelihood, they wanted to have an occupational outlet which would not be 'tough' (see Section 4.6.1.3). These students did not have strong, long held aspirations of having a career in agriculture and drifted into this field because they were unable to realise their initial plans. Their career commitments were therefore weaker than their fellow students who chose to study agriculture during the initial stages of the choice process and aspired to jobs that were challenging (see Section 4.6.1.3).

These findings imply that learning about other advantages and developing strong career aspirations takes time. The students' aspirations for 'easy options' pose a threat to the development of their own career, as well as the agriculture sector itself. It therefore should be made a point of policy, and strategies should be developed that ensure that young people make educational choices based on their career goals. This will not only prove beneficial to the career life of young people but will also help in the recruitment of dedicated graduates into the agriculture sector.

The outcome of the process is that planned 'choices' lead to high career aspirations and increase the likelihood of retention in the agriculture sector. This was further confirmed through the professional life experiences of agriculture alumni. Those graduates who joined this field based on their aspirations to become agriculture professionals were devotedly engaged in the agriculture sector, while those who joined without much deliberation took the first exit or failed to perform professionally as agriculturists (see Section 4.6.2).

It is deduced from the analysis of the process and projected outcomes that if the stakeholders of the agriculture sector want to recruit and retain dedicated and devoted agriculture graduates, they will have to encourage young people to 'choose' to study agriculture. Students must be informed regarding professional prospects in agriculture during the early stages of the choice process. Moreover, career guidance at the university level should ensure that students choose their major based on their career goals. If more students continue to enter into this field without 'choice' and without knowledge about future careers, there is a strong possibility that they will either opt out

when they come across an alternative opportunity, or show less commitment to their profession.

While exploring the factors that influence educational and occupational choices of agriculture students, the role of locality and residential background emerged as multi dimensional with lasting effects. Rural belonging and upbringing in villages increase information, stimulates interest and strengthen aspirations to study agriculture. Furthermore, observing the deplorable conditions of the farming community and agriculture sector develop empathetic and intimate feelings, leading to the decision to return to native villages to contribute in the development of their farming families and communities. Many rural students who planned to study agriculture chose majors that allowed greater exposure to fieldwork-related concepts and techniques. Thus if rural students are given ample exposure regarding agriculture sciences, a significant majority of planned choosers looking forward for a career in agriculture can emerge from the rural areas.

The socio-cultural perceptions of gender appropriate professions deeply influenced the career choices of female participants in agriculture sciences. On the one hand increased female enrolment on agricultural degrees suggests that more women are moving into this field. However, the choices of careers and areas of specialisation of female students were profoundly gendered. The application and lack of willingness to engage in the physically active fields in agriculture sciences is socially embedded in gendered cultural norms and religious doctrines. Women are socially discouraged from working in the field or doing physical activity as it is deemed as inappropriate and ‘undesirable’. Both male and female respondents were of opinion that the restrictions on female physical

mobility shaped career pathways. Practical or field-based work was not feasible for female students because of the ways that their physical capabilities were constructed as 'weak'. It was also the case that women feared for their safety while in the field and so issues of personal security also held them back from doing this type of work. The majority of the female students therefore opt for majors that involve lab work rather than fieldwork, thereby shaping their long-term occupational choices.

An unexpected finding from the research was the impact of personal security and fear of local political conflict on career choices. Female students considered their personal safety and feared being out in the field. However, male students also had to deal with fear from political conflict and terrorism which closed universities and changed the career direction and options open to some students. This is an area that needs to be looked at more closely in future research on educational choices.

Furthermore, the general 'trend' and overwhelming preference for professions other than agriculture causes lack of attention and interest towards agriculture sciences among the parents, teachers and ultimately, students. Students explicitly expressed that there is an over-emphasis and taken for granted preference for medical and engineering professions. This social 'trend' is so strong that there is no time and space left to consider agriculture as a prospective academic and career option. This gives strong indication to the need to make changes in the education structure (by changing the titles of 'pre-medical' and 'pre-engineering' group of studies) and improving the social image of agriculture sciences.

6.2 Original Contributions of the Study

The most salient contribution of this study is the exploration and presentation of the educational and occupational choice process as a multi-stage process (see Figure 4.1) rather than a multi-layered one (e.g. Foskett and Hemsley-Brown, 2001; Hodkinson et al. 1996). In doing so, it captures the true elements of ‘transition’ and ‘progress’ (White, 2007a), while integrating the time dimension in the choice process. It distinguishes the series of steps taken, and captures the non-linear nature of the process comprising of ‘turns’ and ‘shifts’ in choices (Hodkinson et al. 1996). Each stage is presented with its connection to the previous stage, where prior differences reflect on the experience and result of the subsequent stages and outcomes. Although the model does not claim universality due to its limitations (see Section 6.3), its modest contribution to the field draws attention towards developing explanations in a stage sequence that can allow a degree of predictability regarding educational and occupational choices and the outcome of the choice process.

The findings of Chapter 5 elaborate on how various factors influence not only the choices but also the choice process at various stages. The role of the factors as choice facilitators and barriers at different stages (in this case unfortunately, there are more barriers), further strengthens the model. It allows for a greater degree of understanding of the choice process through identifying how, why and when factors influence at various stages. This allows the policymakers and stakeholders of higher education to design precise measures for each stage of the students’ choice process. For example, the role of parental support is highly crucial in the initial stages of the choice process; parents of younger children should therefore also be targeted while disseminating information.

This qualitative study makes a humble contribution to the empirical literature exploring the educational and occupational choices of agriculture students. This area of investigation is dominated by quantitative studies, and researchers have strongly advocated conducting qualitative investigations in order to develop a deeper understanding of the educational and occupational choices made by agriculture students and the barriers they face on joining this discipline (Arnold and Place, 2010; Esters and Bowen, 2005; Scott, 2004; Sutphin and Stewart, 1995; Bell and Fritz, 1994). This qualitative research therefore presents a new evidence base of how agriculture students make their educational and occupational choices.

As discussed in Chapter 2 (see Section 2.4), research on educational and occupational choices in Pakistan has not gained much attention. The few studies undertaken in this field have relied on quantitative methods (some have used secondary data only). This in-depth qualitative study produces an entirely different evidence base on the choices made by Pakistani students, which is unique as they stem from an education system which does not provide career guidance facilities. Moreover, the education system in Pakistan does not offer exposure to the agriculture discipline, courses or programmes as in the case of the United States, from where most of the empirical literature on agriculture students' educational and career choice comes from. It is noteworthy that this study is a pioneer qualitative investigation on the choices of agriculture students in Pakistan.

These contributions are, however, subject to various limitations of this research, which are discussed in the next section.

6.3 Limitations of the Study

This study has a number of limitations. Firstly, it has relied on the accounts of students regarding their life experiences, preferences, thinking and choices with an assumption that they are true. The honesty and openness with which students gave interviews to the researcher deserve due credibility and consideration. Since interview studies primarily rely on participants' responses, this weakness is not detrimental (White, 2007a).

As discussed in Chapter 3 (see Section 3.4.1), due to terrorist attacks on educational establishments at the time of data collection, gaining access to academic institutions became difficult. Therefore, the number and variety of colleges that I could access were limited. I intended to include students from private colleges also but that was not possible as their security concerns did not allow my entry into the institutions. I therefore had to use personal contacts to access government colleges in Islamabad, although formal procedures were followed. Similarly, in Faisalabad it was not possible for me to access students outside the University Agriculture of Faisalabad (UAF) due to security issues. The selection of alumni was also restricted to those who were either willing to come to my residence for interview or university, due to the same reason.

Since all of the interviews were in Urdu language, their transcription and translation was a challenging issue. In order to avoid losing meanings while processing the data, I personally scrutinised the whole exercise of transcription and translation. Although this brought me closer to the data, it was a time consuming and challenging task. There is also the possibility of not being able to completely communicate the idea in another language because English is not my first language. Some words, their meanings and expressions are best understood in the original context, and I believe there remains a

gap in communicating the original expression of the respondents through the translated version of their interviews.

The qualitative nature of inquiry of the current study has an inherent limitation with regard to the generalization of the findings on larger populations. The analysis and conclusions drawn from the data describes best the respondents of the study only. Notwithstanding this, I have made a genuine attempt to have maximum variation in the study sample by recruiting participants of diverse age groups, gender, residential background, regions, study levels and specializations.

Lastly, the evidence base for the last stage of the choice process is thinner²⁵ than that of the earlier stages. Only alumni experienced post-study circumstances in reality. The final year students had opinions about how they would go about their professional life and expressed their preferences and priorities. Since many of them were planning to study further (at least two more years for Masters, or more years in the case of M.Phil or PhD), their views might change with increased knowledge, awareness and with the passage of time. Nonetheless, their ideals at the stage of completing their Bachelor's degree provided insights that proved substantial to the analysis of the whole choice process and the outcomes of the process.

It is admitted that resolving these limitations was beyond the scope of this study and the researcher alone. However, these limitations do provide opportunities for future research, which are discussed in the next section.

²⁵ Only two cohorts of students, Alumni and B.Sc. Agriculture (final year) students' interviews could provide evidence for the final stage of the choice process.

6.4 Recommendations for Future Research

The analysis presented in the study proposes some recommendations and direction for future research.

Due to limitations in terms of time, money and other resources, this study has relied on a cross-sectional design. Methodologically, future research should investigate the choice process presented in this study through longitudinal study. Following up students in their academic and professional life, and going through various stages of the choice process, will show the extent to which the outcome projected by the choice process in the current study stands valid or varies according to the differences in the experiences of various stages of the choice process.

The quality of the arguments of the choice process identified in this thesis should be tested on a large representative sample. Furthermore, a test of the choice process through quantitative methods can add strength to the findings presented in this study where each stage can be tested “as a hypothesis with varying degrees of “strength”” (Chattoe-Brown, 2010: 11).

Studying education and career choices in a specific time period only restricts the development of a holistic understanding of how choices are made. The findings of the current study indicate that the time dimension plays an important part, especially in the educational and occupational choice process. Considering the fact that the educational structure does not allow flexible timelines or infinite time to think and decide²⁶, a much promising prospect for future research is to investigate how much time is needed, is

²⁶ Not only that there are deadlines for admissions in the next level, in Pakistan, a student can take only a limited gap between his studies.

available and is adequate for various stages of the choice process and how the time spent on various stages affect the time available for the following stages. Moreover, what are the implications of the time spent on various stages on the whole choice process?

The data suggests that much can be explored in terms of the types of structure and agency proposed in this study, i.e. stiff, standard and soft and the way one type works with another at particular stages of the choice process (e.g. stiff agency with soft structure, soft agency with stiff structure). The study's data indicates that there were stages where the power of structure exceeded that of agency. At times, strong agency superseded structural barriers. Future research can explore these concepts and their relevance in the choice process of other sociologically important contexts.

The parity of esteem between agriculture and other professions is worth investigating further. Future research should explore the research puzzle of the over emphasis on medical and engineering professions and why these professions earn high prestige in the society overshadowing other potential careers. What leads these professions to be categorised as dignified? Possible answers can include salary and monetary rewards, occupational structure of the society, social image, status symbol or maybe other factors which need to be investigated.

6.5 My Final Remark

I hope that this research proves fruitful not only to the academic arena in the field of educational and occupational choices, but also to those who have been concentrating on agriculture students' academic and vocational choices in the era of cyberspace and

information technology. I hope that the stakeholders of higher education in Pakistan, especially HEC²⁷, will reap the benefits this study has to offer. While it is not being claimed that this single piece of research alone can direct policy or resolve all the issues faced by Pakistani students when making their educational and occupational choices, it is hoped that the study can facilitate the understanding of the choices made by students, and how the issues and problems within that choice process can be encountered.

This research attempted to draw attention towards *choice* and its importance through empirical evidence. People have to make numerous decisions in their lives, and there are certain spheres of life where even if one does not engage actively in the choice process, one has to decide. The ultimate decision may then be a reflection of compromise, sacrifice or a forced verdict and might have unproductive consequences. I would therefore strongly advocate that students should engage in their decisions, especially regarding their education and career. They should make choices and should be encouraged to do so by other stakeholders of higher education.

I would like to close this thesis with a short extract of poetry by Alexander Starr²⁸

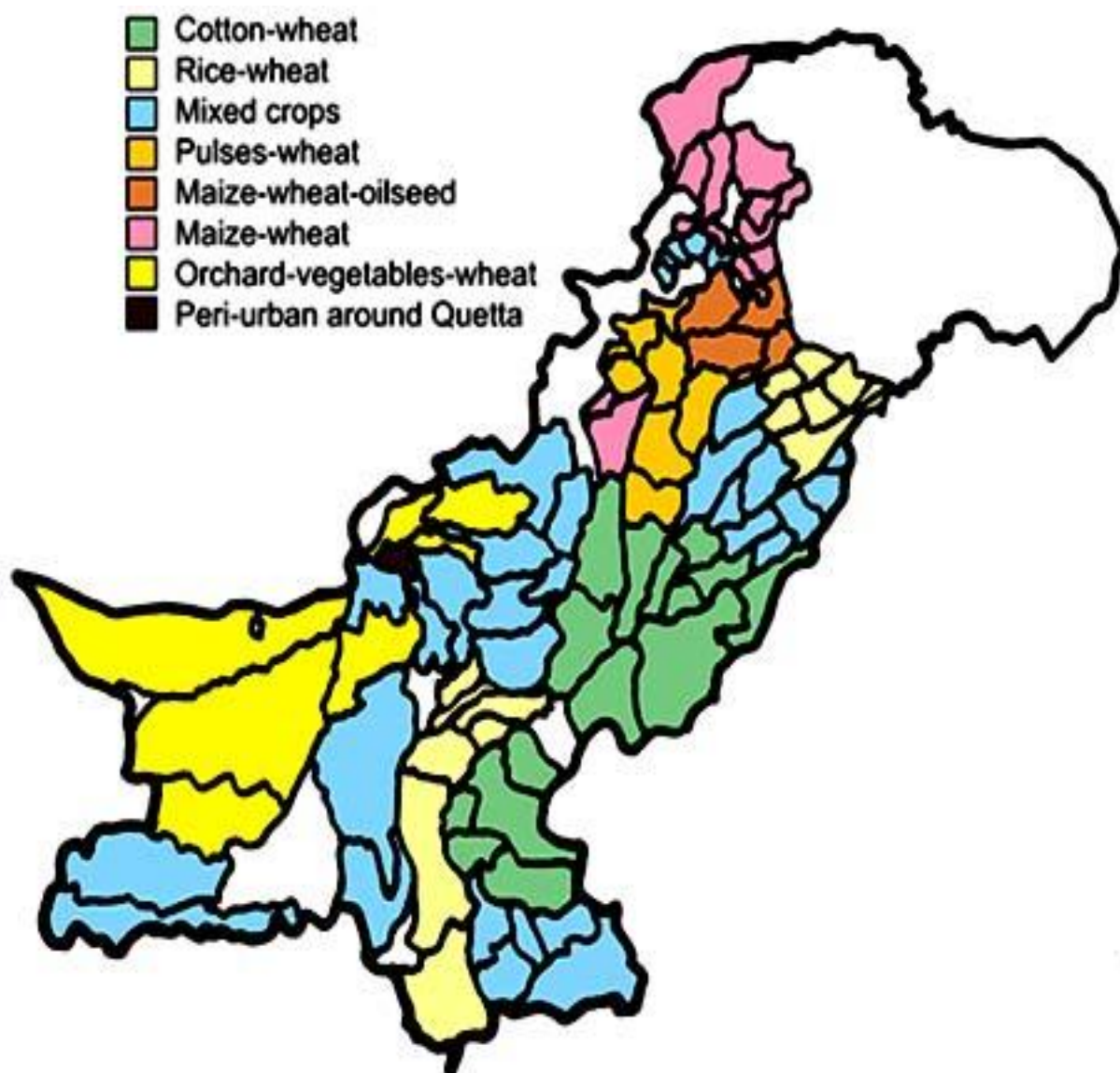
Choose to live by choice, not by chance.
Choose to make changes, not excuses.
Choose to be motivated, not manipulated.
Choose to be useful, not used.
Choose self esteem, not self pity.
Choose to excel, not compete.

²⁷ Higher Education Commission, Pakistan.

²⁸ Minute changes have been made (by eliminating 'I' and 'me') in order to communicate the intended message.

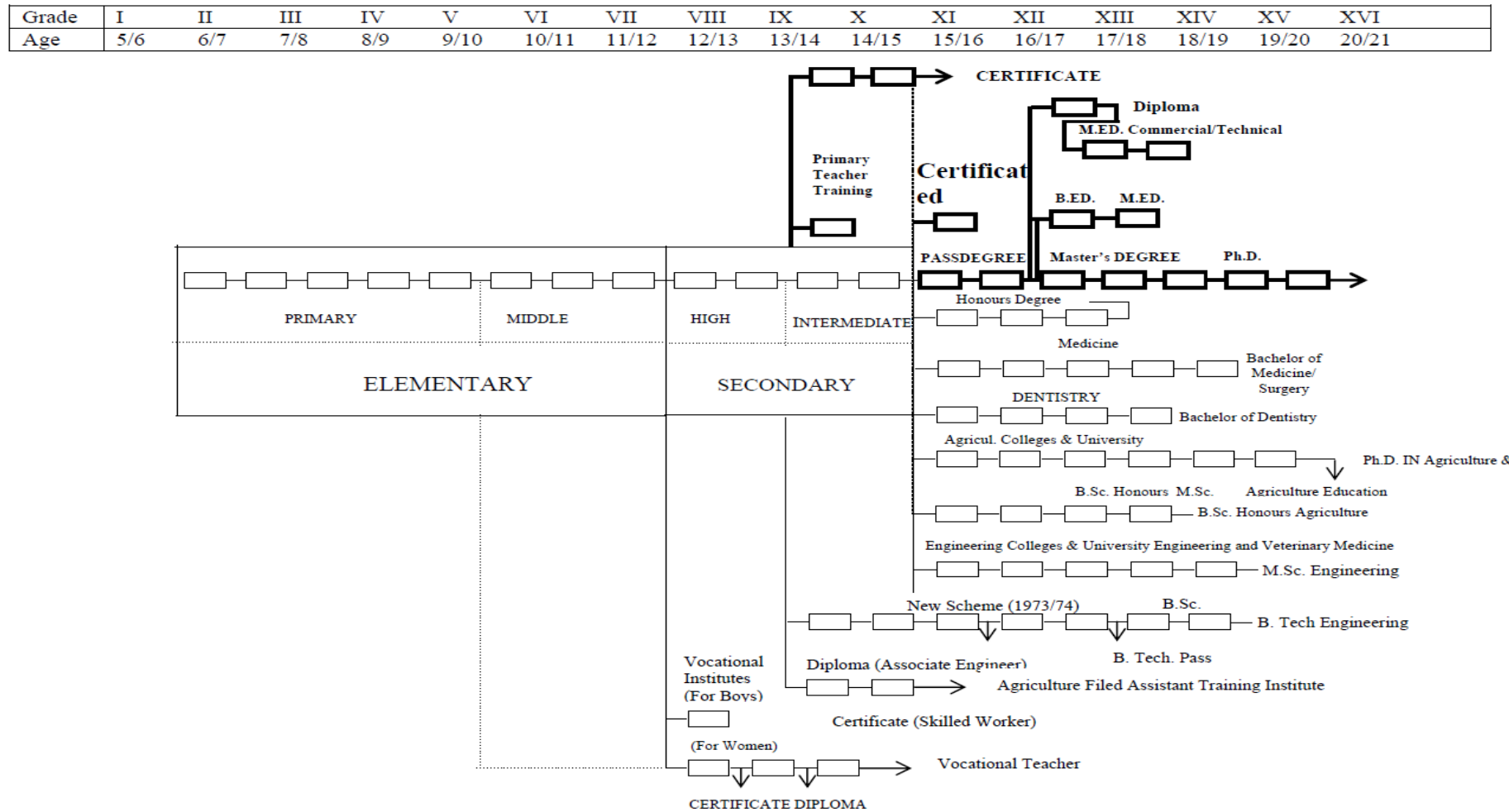
Appendices

Appendix 1.1: Various Crop Zones in Pakistan



Source: FAO, 2004. Agro Ecological Zones and Crop Production Regions. Fertilizer Use by Crop in Pakistan. Available from - <http://www.fao.org/docrep/007/y5460e/y5460e06.htm#bm06> [Accessed: 4 August, 2011]

Appendix 1.2: Educational Routes in Pakistan



Adapted from: Shah, D. 2003. Country Report on the Decentralization in the Education System of Pakistan: Policies and Strategies. AEP, Ministry of Education, Pakistan.

Appendix 1.3: List of Majors offered in Agriculture Universities in Pakistan

1. Agronomy
2. Agriculture Extension
3. Biotechnology
4. Entomology
5. Environmental Science
6. Forestry, Range Management and Wildlife
7. Food Technology
8. Horticultural Sciences
9. Marketing and Agriculture Business
10. Plant Pathology
11. Plant Breeding and Genetics
12. Seed Science and Technology
13. Soil Science
14. Weed Science

Appendix 3.1: Interview Schedule

The following interview guide was utilized to collect data from the five cohorts of respondents (F.Sc. Students, B.Sc. Agriculture first and forth year students, Alumni and Non-agriculture). Basic questions were asked from all respondents, whereas additional questions were added for the advance level students.

❖ Tell me about yourself.

- Where are you from and where do you currently reside?
- What is your parents' education and occupation?
- How many siblings do you have? What do they do? What is your number among your siblings?

❖ Tell me about your school life and your academic history.

- Where did you do your primary and secondary education?
- What was the medium of instruction at your school?
- What role did your school play in shaping your choices for your further study?
- Did you have any favorite subject during school life? If yes, which one and why?
- Did you receive any career guidance in your school?
- Did your school teachers ever give you advice and information about possible educational and occupational options available to you?

❖ How did you choose your subjects at the Matriculation level?

- Which options were available to you in matriculation? Which one did you chose and why?
 - Can you recall when you started thinking about which subject to study? What motivated you to study that subject?
 - When was the first time you started thinking about your career? What were your thoughts at that time? What triggered your aspirations/inspirations at that time?
 - Tell me about your family's first meaningful involvement in your subject choice?
 - Did anyone guide you at the time of your subject selection? If so, who was it? What did they tell you? How did you decide?
 - How did you score in your matriculation?
 - Did you know about agriculture education by that time?
- ❖ How did you make your choices at the F.Sc. level?
- Which options were available to you at F.Sc.? Which subjects did you choose and why?
 - How did you come to know about the range of subjects/degrees you can study after F.Sc.?
 - Had you developed an idea about your higher education/degree or career by that time?
 - What was the role of your parents in your choices?

- Did your friends influence you in any respect?
 - Did your teachers guide you in any respect at that time?
 - Did you discuss with someone about future academic and vocational options? What kind of information/advice did you receive?
 - What were your sources of information about future educational and occupational options at that time? What information did you receive? What was your level of information at that time?
 - Were you aware that you could study agriculture at that time? If yes, how much information did you have and what were your sources?
 - What were your preferences at that time? How and why did you prioritize your choices?
 - Have you decided about your degree education? What have you decided and why?
 - If you did not plan to study agriculture, or had it as your second or third choice, what was the reason?
 - Was finance an issue?
 - If your initial plans and priorities about higher education and career changed, why, when and how?
 - Did any particular incident inspire you and guide your choices?
- ❖ Tell me in detail your story after having received your F.Sc. result till the time you gained admission in the agriculture university.

- How many marks did you secure in your HSE?
- Did you ever receive advice on professional education and career from anyone? What was told to you in the advice?
- How did you come to know about the university? What did you know about it? Why did you chose to study in this university?
- How many colleges and universities did you apply to and why? How many places did you secure admission to and why did you finally chose agriculture?
- What response did you get from family and friends about your choice of studying agriculture?
- Is this degree affordable or are there any issues of finance?
- At the time of admission, did you have any career goals? Were you thinking about studying any particular major at that time? If yes, which one and why?
- Were you influenced by the choices made by your friends? Did you discuss your options with them?
- If you were to relive your F.Sc., would you do/choose something different this time? Or would your choice be the same?
- What were your educational and occupational future expectations at the time you secured admission in the agriculture university?

❖ How was your university experience?

- Did you find any difference in your perception and actual experience of agriculture education since you joined this university?

- How are the teachers? Do they guide you in terms of future academic and career paths? If yes, how? What do they tell you? How does that influence your future choices and goals?
- How is the hostel life? Do you face any challenges? Does your living expence place any financial burden on you or your family? How do you cope with that? Does living in the hostel help you in gaining knowledge and information? (for outstation students)
- Do you receive any career guidance from the university?

❖ How did you choose your majors?

- When was the first time you started thinking about majors?
- How were you approaching choosing your majors during the early years of your university education?
- Why did you prefer one major over the other?
- Were you thinking about career prospects at the time of major selection?
- What was your CGPA at that time and did it affect the range of options available to you at the time of major selection?
- How did your family, friends, seniors or teachers influence your major selection?

❖ What were your plans after graduation?

- How did you choose your internship? Which sector/place did you preferred to do your internship in and why?
- What are your career plans now? How are they different from the time you decided to study agriculture?

- Where and why would you like to work after graduation?
- Are you planning to study further? What? Up to which level? Why?
- Where will you prefer to get a job, in rural areas or urban, and why?
Does belonging to the village matter in career plans? If so, how do it matter to you?
- Which sector and area will be your least preferable choice in terms of a future career and why?
- Would you like to develop your career in agriculture or leave this field?
Why? If given a choice between agriculture or any other sector, how will you compare your options? On what grounds will you evaluate a “better option” for yourself?
- What do you think and feel is the career scope of agriculture scientists?
- How do you define an ideal job?
- How do you gather information about career opportunities?
- Where do you see yourself five years from now?

❖ Questions about other influences on choice process

- Is the government playing any role in facilitating students in making their educational and career choices? What should they do?
- Does NARC/PARC or other agriculture research institutes have any role to play in the choices of agriculture students?
- What are the problems students faces in making their choices?
- Does agriculture receive equal regard when compared to other professional degrees in Pakistan?

- In your opinion, why do students prefer not to study agriculture?
- What advice would you give to students who are in the process of deciding their subject of higher education and career?
- What role does gender play in choice of agriculture?

Additional Questions for the Agriculture Alumni

- When did you start applying for jobs? What kind of jobs are you interested in?
- Where do you get information about job openings? Did your internship or the university help you in your career?
- What led to your career decisions? What makes a good job?
- Do you think that more students should opt for agriculture? Does Pakistan need more agriculture scientists?
- Did you ever recommend this field to someone?
- Do you think that a professional degree and career in agriculture is not credited in our society? If so, why is that? What can we do to change this perception?

Additional Questions for HSE Students Who Were Not Intending to Study Agriculture

- Do you know that studying agriculture is also an option available to you? What do you think about that option?

- Which options have you chosen and why?
- Why are you not interested in further education in agriculture? Why do you think it is not a plausible option?
- In what circumstances would you prefer to study agriculture? Can something change your mind and incline you towards considering agriculture as an option? If so, what would that be?
- Have you ever seen, met or heard about any agriculture professional?

Appendix 3.2: Respondent's Consent Form

I am willingly participating in the research entitled "Educational and Occupational Choice Process; The Case of Agriculture Students in Pakistan" carried-out and interviewed by **Sameen Masood**, PhD student at Leicester University, UK.

- Researcher has informed me about the research objectives and I understand the objectives.
- My consent is conditional upon anonymity of personal identity.
- Interview will last for approximately 75-90 minutes. However, I can leave the interview at any stage, if feel uncomfortable.
- I can refuse or reject to answer any questions.
- I have consent for recording the interview.

Participant's Signature

Participant's Name

Research objectives have been adequately explained to the participant and reasonably understand all the information provided.

Interviewer's Signature

Appendix 3.3: Poster for Research Participants

I am a PhD scholar conducting research on,

‘Educational and Occupational Choices of Agriculture Students’

I am looking for volunteers to interview about their educational choices. As a participant in this study, you would be interviewed to recall and share your memories from your own life and answer questions about how and why you chose to study a particular subject of study, your educational and occupational choices. The interview session will take place in the university and will take approximately 60-75 minutes.

For participation, questions and further information please contact:

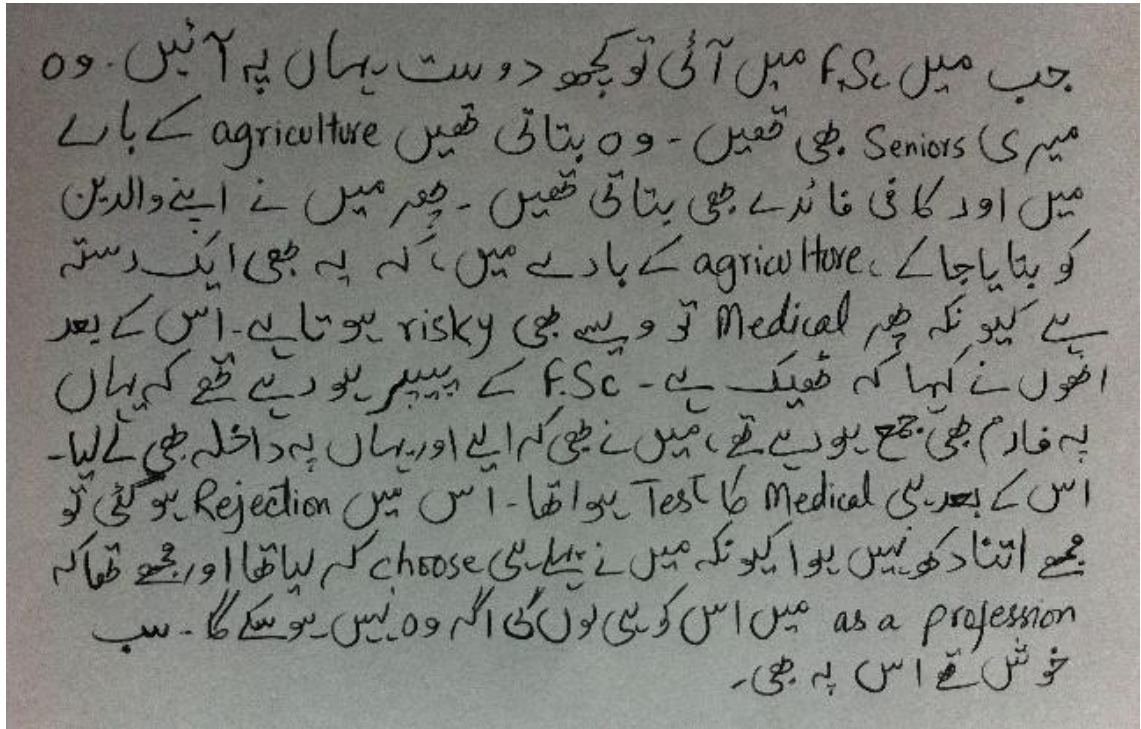
Sameen Masood
Department of Sociology, University of Leicester, UK.

Tel: 051-285****

Mobile: 0333-551****

Email: sm431@le.ac.uk

Appendix 3.4: Interview Excerpt in Urdu along with English Translation



When I started my F.Sc., few of my friends came here (in this university) who were also my seniors. They used to tell me about agriculture and also told about its benefits. Then I told my parents about Agriculture University that there is another path of study and as medical is always risky. They said Okay. During the final exams of F.Sc, forms were being submitted here (in agriculture university). So I also applied here and secured admission in this university. After that I was appeared in the entry test for MBBS and I got rejected. I did not feel too sad because I had already chosen this and thought that if I will not get admission in MBBS then I will take agriculture as a profession. Everyone was happy on this (profession/field).

Appendix 3.5: Illustration of Coding from NVivo

Alumni Agri

Tariq Alumni

Q: Which subjects you had in matriculation?

A: I studied science in matric. We had no other choice. The only choice I had was to study in science. Then afterwards I took pre engineering in F.Sc in Khadim Rasheed College. This was due to my family trend. A lot of people of my family were engineers. My father was in army and everybody in my family was either a doctor or engineer. So due to family pressure I had to choose that.

Q: You never thought about army?

A: I had a teacher who said that I won't be able to make it in medical college frankly. So I was clear about this. My biology was weak and so was my zoology. In my F.Sc I scored 755 marks, at that time in 1995 these marks were good enough to qualify me for an engineering university. Again my father was pressurizing me to join forces. So I applied for Pakistan Air Force. At that time I was quite slim and smart. Anyways I was unable to make it to Pakistan Air Force because of severe heart perforation and I was unable to qualify. Finally I made it to engineering university I spent one year over there in Peshawar in electrical engineering. I got admission in electrical engineering. There were a lot of student politics over there. So I sort of got diffused in that environment. My first year was so successful; I still have my first year Detail Marks Sheet with me. I scored 1200 something marks out of 1400 marks. I was so unfortunate that due to a political activity and dispute my whole batch got rusticated for one year. I was so dissatisfied and dishearted and I thought that I cannot do this. My heart sort of got bad about that place. It was really a bad story and very unusual one. After that I spent one whole year at my home. Often when I talk to my mother she says that your story is a very long story.

Q: After your one year of engineering you still gave a gap of one year?

A: Yes I gave a gap of one year because admissions were closed everywhere. The results of first

The image shows the NVivo software interface. On the left, a text document titled 'Tariq Alumni' contains interview questions and answers. On the right, a list of codes is displayed, organized into a hierarchical structure. The codes are color-coded and include terms like 'Confused', 'Lectures on career', 'Personally grooming', 'Inspiration from teachers', 'Lack of Facilities', 'Professional Degree', 'Desperate', 'Continuing studies', 'Govt. Sector', 'Policies', 'Favorable Environment', 'Shifted', 'Change agri sector', 'Undequally prepared', 'Poor', 'Student Support', 'Job Offer', 'regaining interest', 'City matters', 'Music', 'Imposed', 'Need of Agri Scientist', 'Diverse Profile', 'Lack of Info', 'Change Agri', 'Job Interviews', 'Social Pressure', 'Coding Density', 'academic history', 'Disappointed', 'Break in Studies', 'Engineering', 'First choice', and 'Politics in Edu'.

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