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# **CONSUMER PERCEPTIONS OF MOBILE PHONE MARKETING: RECENT EVIDENCE FROM AUSTRALIA**

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## **Abstract**

Over the past decade developments in telecommunication technology have created opportunities for new and interactive electronic marketing channels, such as the mobile phone. In particular, the ubiquitous and personal nature of this device suggests strong potential for its use as an advertising and direct marketing platform. Despite this, several issues surround the use of this device for marketing purposes, and as such, consumer acceptance of mobile phones as an electronic marketing medium remains relatively low. This study explores Australian consumers' perceptions of mobile phone marketing, defined here as an electronic marketing innovation. Through the application of Rogers's (1995) innovation attribute theory, this research makes an important contribution to understanding how consumer perceptions of the attributes associated with this innovation affect their acceptance of mobile phone marketing campaigns. Here, three attributes were examined: relative advantage, compatibility and complexity. Statistical analysis using a multiple hierarchical regression model revealed that consumers' perceptions of compatibility and relative advantage were significantly associated with their perceptions of mobile phone marketing. The identification of compatibility as the key driver of acceptance supports previous research which identified permission, privacy, control, and the delivery of the message as key drivers of mobile phone marketing acceptance. Interestingly consumers' perceptions of the complexity associated with mobile phones had a positive rather than negative relationship with their acceptance of this marketing medium.

*Keywords: Mobile phone marketing, Innovation adoption, Relative advantage, Compatibility.*

*Track: E-Marketing.*

## Introduction

Over the past decade, innovative marketing communication channels that deliver relevant and personalised messages to target audiences have emerged as major components in the electronic marketing programmes of many organisations (Harmon, Webster and Weyenberg 1999; Watson, Pitt, Berthon and Zinkhan 2002). In particular, the Internet, alongside ubiquitous devices such as the mobile phone, is facilitating new channels for reaching and interacting with consumers (Moffett, Stone and Crick 2002; Trappey and Woodside 2005; Xu 2006). Despite these apparent opportunities, the technological complexities and privacy issues surrounding the implementation of mobile phone marketing have meant its diffusion within the Australian marketplace has been comparatively slow (Howarth 2007).

The focus of this research is on the three innovation attributes found by Tornatzky and Klein (1982) to exert significant influence over individuals' adoption decisions: relative advantage, compatibility and complexity. Recently, researchers have used innovation attribute theory to explain the adoption of technology driven innovations, and for understanding consumer behaviour in relation to new product development (Chen, Gillenson and Sherrell 2002; de Ruyter, Wetzels and Kleijnen 2001; Hung, Hu and Chang 2003). Consumers' perceptions of the aforementioned attributes in the context of mobile phone marketing, forms the basis of two principal research questions:

- To what extent are consumer perceptions of innovation attributes associated with their adoption of mobile phone marketing?
- And which, if any, innovation attribute has the greatest effect on consumer adoption of mobile phone marketing?

The next section turns to consider the conceptual framework and associated hypotheses which underpin this research.

## Literature Review and Hypotheses

### *Mobile phone marketing*

A diverse range of definitions of mobile marketing exist (see for example, Mort and Drennan 2002; Pousttchi and Wiedemann 2006; Salo and Tähtinen 2005). In view of these, mobile phone marketing is defined here as the use of mobile phones to provide consumers with time and location-specific, personalised information, which promotes goods, services and ideas. The novel status of this communication device suggests it is reminiscent of an innovative form of electronic marketing. Several researchers have studied the factors which influence consumer acceptance of marketing messages sent via this medium (Barnes and Scornavacca 2004; Barwise and Strong 2002; Bauer, Reichardt, Barnes and Neumann 2005; Carroll, Barnes, Scornavacca and Fletcher 2007; Kavassalis, Spyropoulou, Drossos, Mitrokostas, Gikas and Hatzistamatiou 2003; Leppäniemi and Karjaluo 2005). Overall their findings reveal consistent support for three main factors: user permission, wireless service provider (WSP) control, and brand trust.

A similar stream of literature has found the characteristics of the marketing message and its delivery to be key factors driving consumers' level of acceptability (Merisavo, Kajalo, Karjaluo, Salmenkivi, Raulas and Leppäniemi 2007; Trappey and Woodside 2005). However, until now,

there has been little research which has explored whether the nature of this innovative form of marketing influences a consumer's decision to accept or reject marketing communications via their mobile phone.

#### *Innovation adoption*

Innovation adoption refers to “a decision to make full use of an innovation as the best course of action available” (Rogers 1995, p. 21). The dominant theoretical framework for analysing the relationship between an innovation's attributes and its adoption is that proposed by Everett Rogers (1995). A number of researchers have used Rogers's (1995) framework for studying consumer adoption of electronic channels (see, for example, Foulds and Burton 2006, for multimedia messaging services; Kleijnen, de Ruyter and Wetzels 2004, for mobile gaming; Lin and Yu 2006, for the Internet as a communication channel; Pedersen 2005, for mobile Internet services). However, less research has concentrated on the adoption of process innovations, such as mobile phone marketing, as opposed to product innovations.

#### *Innovation attributes*

Rogers (1995) considers that an individual's perception of the innovation's attributes will largely drive their adoption decision. As mentioned previously, the innovation attributes that are held to be applicable to mobile phone marketing in this study are relative advantage, compatibility and complexity. Relative advantage refers to the degree to which an innovation is perceived as being better than the idea it supersedes (Rogers and Shoemaker 1971). In the context of mobile phone marketing, relative advantage is conceptualised as the degree to which consumers perceive this channel as better than its alternatives, such as direct mail or email. The current innovation literature has established that relative advantage is one of the best and most consistent predictors of adoption (see, for example, Onkvisit and Shaw 1989; Plouffe, Vandenbosch and Hulland 2001; Robinson 1990; Teo and Pok 2003; Tornatzky and Klein 1982). Thus, it is proposed that a consumer's perception of the relative advantage offered by mobile phone marketing will be positively associated with their adoption decision:

*H1 – Relative advantage is positively and significantly related to consumer adoption of mobile phone marketing.*

Compatibility refers to whether an innovation is perceived as compatible with the existing values, past experiences and needs of potential adopters (Rogers and Shoemaker 1971). In terms of mobile phone marketing, this construct may simply denote a consumer's familiarity, or level of comfort, with this form of marketing. Prior research has established a clear and consistent relationship between compatibility and the adoption of technology driven innovations (Agarwal and Prasad 1997; Black, Lockett, Winklhofer and Ennew 2001). Within this study, the personal nature of the mobile phone suggests that consumers' perceptions of compatibility will affect their acceptance of marketing communication sent via this medium:

*H2 – Compatibility is positively and significantly related to consumer adoption of mobile phone marketing.*

Complexity, as defined by Rogers and Shoemaker, refers to “the degree to which an innovation is perceived as relatively difficult to understand and use” (1971, p. 154) and is considered by many to be a close substitute to the ‘perceived ease of use’ factor acknowledged in Davis's (1989) technology acceptance model. Several studies have established a clear association between complexity and innovation adoption (Kleijnen et al. 2004; Pagani 2004; Teo and Pok 2003).

Given the perceived intricacies associated with mobile phone technology, it is proposed that consumer perceptions of complexity will be negatively associated with their adoption of mobile phone marketing:

H3 – *Complexity is negatively and significantly related to consumer adoption of mobile phone marketing.*

## **Methodology**

Data were collected from a non-random sample of undergraduate university students at an Australian institution. Undergraduate students were chosen primarily for their accessibility, but additionally they represent a key target market for mobile phone marketing due to the majority of them having grown up in the technological age. A self-administered questionnaire was developed, and then pretested to enhance its overall design. To ensure a common frame of reference, the opening section of the questionnaire contained a definition and brief explanation of mobile phone marketing. A total of 271 questionnaires were distributed in mid-2007, of which 254 were returned and deemed valid for data analysis, representing a response rate of 93.7 per cent. Bernard (2000) suggests that a valid response rate for face-to-face surveys, as were used here, is approximately 80 per cent.

All measures, apart from those for compatibility, were drawn from previous research on technology driven innovations (see for example Davis 1989; Merisavo et al. 2007; Moore and Benbasat 1991; Pavlou 2003) and were adapted for consumers' adoption of mobile phone marketing. The measures for compatibility were created by the researchers to suit the unique requirements of the current research setting. In all cases, a seven point Likert scale was used, where 1 equalled strongly disagree, and 7 equalled strongly agree.

Consumer adoption of mobile phone marketing, the dependent variable, was measured by three items reflecting the consumer's perception of, and commitment to, mobile phone marketing. Exploratory factor analysis using a principal component analysis method revealed that all three items loaded substantially ( $>.40$ ) on the extracted factor. The reliability of the measure was confirmed with an alpha value ( $\alpha = .89$ ) well above the minimum recommended level (Nunnally 1967). Relative advantage, compatibility and complexity, the independent variables, were each measured by five items reflecting the consumer's perception of the respective attribute of mobile phone marketing. Each scale was individually subject to factor analysis. All but three of the total 15 items loaded substantially on their respective factors. Thus, these items were excluded from data analysis. The subsequent alpha reliability values were .86 for relative advantage, .77 for compatibility, and .71 for complexity.

## **Results**

Hypotheses 1, 2 and 3 were first tested using simple correlation, prior to performing multiple hierarchical regression on the data. A correlation matrix was also produced to confirm the order in which the attributes were regressed against the dependent variable, consumer adoption of mobile phone marketing. The results of the correlation matrix revealed that relative advantage had a significant and positive correlation with adoption ( $r = .75, p < .01$ ) in support of H1.

Compatibility also had a significant and positive correlation with adoption ( $r = .78, p < .01$ ), thus supporting H2. However, despite its significance, the direction of the relationship between complexity and adoption was a positive, meaning that there was no evidence uncovered to support H3.

Following simple correlation, multiple hierarchical regression analysis was performed to determine the strength and direction of the relationships between the innovation attributes (when all were accounted for) and the dependent variable. The results of this analysis are reported in Table 1.

**Table 1** Results of multiple regression analysis for adoption<sup>a</sup>

Variable	Stage 1	Stage 2	Stage 3
Compatibility	.781*	.509*	.502*
Relative advantage		.388*	.388*
Complexity			.035
$\Delta R^2$		.076*	.001
$R^2$	.611*	.687*	.688
$F$	395.258*	275.867*	184.156*
$n$	253	253	253

<sup>a</sup> Standardised coefficients are reported

\*  $p < .001$

At the final stage of the regression model, only relative advantage and compatibility were identified as significant predictors of consumer adoption of mobile phone marketing, thus offering further support for H1 and H2. Interestingly, the variables relative advantage and compatibility also produced relatively strong and significant coefficients at stage 2 and stage 3 of the regression model. This result suggests that the greatest proportion of variance in consumers' adoption of mobile phone marketing can be explained when both these variables are accounted for.

However, to determine which of these attributes has the greatest effect on consumer adoption of mobile phone marketing, the standardised regression coefficients for relative advantage and compatibility were examined simultaneously. As shown in stage 3 of the regression model, when compared with relative advantage ( $\beta = .388$ ), compatibility ( $\beta = .502$ ) produced a slightly larger standardised regression coefficient. Therefore, the degree of compatibility a consumer perceives has the greatest effect on their decision to adopt or reject marketing communication via this medium. This result is not overly surprising given that it is in line with the findings of previous research, which established that user permission, privacy, control and brand trust are all key factors which affect consumer acceptance of mobile phone marketing (Barnes and Scornavacca 2004; Barwise and Strong 2002; Bauer et al. 2005; Carroll et al. 2007).

## Discussion

The results of the multiple regression analysis largely appear to confirm previous research findings. However, the lack of support for the negative impact of complexity on the adoption decision contests the findings established by past technology innovation research (see, for example, Kleijnen et al. 2004; Teo and Pok 2003). Possible explanations for this lie in the nature of the innovation examined here and the age structure of the sample used. In general, the actions involved in responding to a mobile phone marketing message do not differ from those required to perform day-to-day functions, such as making a phone call or sending a text message. Thus, consumers are not required to develop new skills in order to adopt this innovation, a fact which is likely to reduce the negative influence of this attribute on the adoption decision. Furthermore, younger consumers are more likely to be proficient users of mobile phone technology (Ling and Yttri 2002), having been surrounded by such telecommunication devices since a relatively early age. This being the case, any complexities associated with mobile phone marketing are likely to be less of a concern to this age group than the level of compatibility this marketing channel presents.

## Conclusions

This research makes a number of important contributions to theory. Most importantly, the empirical findings uncovered by this research suggest innovation attribute theory is a valid and robust framework for analysing the acceptance and adoption of electronic marketing innovations. A key contribution also lies in the newly constructed measurement scales, which were specifically developed to obtain data pertaining to consumers' perception of a marketing, rather than product innovation. The proven reliability and validity of these scales offers future marketing researchers a strong foundation from which they can adapt their own questionnaire items. Given the exploratory nature of this research, the preliminary findings uncovered here should be examined further. For example, future research could examine further consumers' perceptions of the individual innovation attributes according to their level of exposure to mobile phone marketing. Moreover, given that this research measured consumers' *intention* to adopt mobile phone marketing and not their actual adoption behaviour, future research could use a longitudinal research design to determine the actual acceptance level of mobile phone marketing, and how consumers' acceptance of such may change during the diffusion cycle.

Finally, the results of this research suggest a number of implications for practitioners, of which two appear to be most prevalent. Firstly, the significance of the relationship between the relative advantages consumers perceive to be attributed to this marketing medium and their adoption of such, implies that marketers should promote the time and cost benefits receiving marketing communication via this channel provides consumers. Secondly, the relationship between compatibility and consumer adoption of mobile phone marketing suggests that obtaining user permission and sending relevant messages underpin successful mobile phone marketing campaigns. Thus, consumers who do not give permission to receive marketing messages to their mobile phone are more likely to view advertising via this channel as an invasion of privacy. If marketers choose to ignore this, then they risk consumers perceiving mobile phone marketing to be as intrusive as telemarketing and email spam.

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