DRIVING CONSUMER ACCEPTANCE OF MOBILE MARKETING: A THEORETICAL FRAMEWORK AND EMPIRICAL STUDY

Hans H. Bauer
University of Mannheim
hans.bauer@bwl.uni-mannheim.de

Stuart J. Barnes
University of East Anglia
stuart.barnes@uea.ac.uk

Tina Reichardt
University of Mannheim
tina.reichardt@bwl.uni-mannheim.de

Marcus M. Neumann
University of Mannheim
marcus.neumann@bwl.uni-mannheim.de

ABSTRACT

With the emergence of high speed wireless network technologies and the increasing market penetration of mobile phones the global advertising industry's interest in using this medium as a means of marketing communication is rising. However, in spite of the increasing number of companies investing in mobile marketing campaigns, there is, as yet, little academic research on this topic and the nature and implications of this channel are not yet understood fully. This research attempts to help in bridging this gap; it investigates the factors that induce consumers to accept the mobile phone as a means of communicating promotional content. Underlying the research are a set of hypotheses that have been formulated to include determinants referring to consumer personality as well as determinants referring to the form of advertising. These hypotheses form the basis for this research and are empirically tested by means of a linear structural equation model. The empirical results (n = 1,028) identify entertainment value as well as information value as the strongest drivers of the acceptance of the mobile phone as an innovative medium for advertising content communication.

Keywords: Acceptance; Mobile marketing; Theory of Reasoned Action (TRA); Structural equation model

1. Introduction

Since the mid-1990s, the penetration of mobile phones in developed economies has been explosive. Whereas in 1997 only 215 million people were using mobile communication devices worldwide, by 2001 this had grown to a massive 961 million, further growing to 1.16 billion by 2003. Today, Western Europe exhibits the highest penetration of mobile phones (79%), followed by North America (48%), and Asia (12%). However, growth in the European mobile sector has recently slowed. Operators are therefore searching for new services with the potential to stimulate demand. In this context the short message service (SMS) has exceeded all initial expectations and become a great market success. In 2002, the total number of SMS messages sent globally totalled 670 billion and this figure is expected to rise to 2.6 trillion by 2007. In view of this exceptional development, the advertising industry is becoming increasingly interested in using the mobile phone as a medium for communicating commercial content. Leading international brand manufacturers - such as BMW, McDonald's and Nike - have already launched campaigns using the mobile phone as a means of conveying commercial content to customers. International market research institutes also consider mobile marketing as a highly promising marketing instrument that will continue to gain importance [Wohlfahrt 2002].

These forecasts refer to a concept of mobile marketing that is based on obtaining permission from the message recipient [Barnes and Scornavacca 2004]. The concept of "permission marketing" addresses the widespread problem of spam in new media communication by demanding the explicit agreement of the addressee to receive marketing information. This approach thus recognises that the majority of anonymous mass advertising is despised by consumers leading them to reject the messages [Godin 2001]. The systematic adaptation of marketing impulses to individual consumer profiles is another fundamental building block of permission marketing. If thoroughly personalized, commercial messages may become perceived as valuable information services as opposed to bothersome "interrupt marketing" [Barnes and Scornavacca 2004]. Such customisation helps to reduce the likelihood of a negative reaction [Barnes 2002].

The high global penetration of mobile communication devices is only one indicator of the high potential of mobile marketing. Moreover, the specific characteristics of the mobile phone allow for marketing measures not realizable by the use of other media. A mobile phone is rarely used by any other person than its owner. It is thus

always attributable to one single person allowing for highly personalized marketing measures. In addition, most users maintain a very personal relationship with their mobile phone, regarding it almost as intimate accessory. Teenage users especially like to express their individuality by personalizing their mobile phone - choosing a particular brand, colour, size, display logo and ring tone. They continuously carry their mobile phone within reach and regard it as status symbol and an important part of their daily lives. For adults the mobile phone has likewise grown to become a highly personal utensil. They also individualize their mobile phone by saving contacts, messages and important dates. Furthermore the SIM (Subscriber Identity Module) card allows for the exact identification of each mobile phone and its user. The mobile phone therefore appears to be the ideal medium for direct and personalized customer communication. Using the mobile medium for communication also enables the advertiser to contact potential customers anytime and anywhere. Mobile phone users typically have their device with them at all times and may leave it on standby for an average of 14 hours a day.

An additional aspect of the mobile phone that lends itself to effective mobile marketing is interactivity. The mobile phone is a highly interactive medium that enables the recipient of a message to reply to it immediately. Interactive media exhibit a bi-directional mode of communication enabling the recipient to affect the communication process actively. As such, the mobile phone exhibits all characteristics necessary to establish a direct dialogue between the advertiser and the potential customer.

Geo-location technologies such as the Global Positioning System (GPS) or Cell of Origin (COO) enable operators to localize the user and to adapt the marketing impulse to his current position [Barnes 2003]. By utilising these technologies consumers can be informed about new product offers at the point-of-sale thereby inducing them to engage in impulse purchases. Currently, however, these kinds of push-services have barely been realized due to poorly developed positioning technologies. More widely spread are location-based pull-services, the use of which necessitates active demand from the customer. In this model, the user provides the service operator with information about his current position; subsequently, the user receives offers of close-by product and service providers (e.g., grocery stores, gas stations, or ATMs).

The development of positioning technologies has led many experts to forecast a promising future for mobile commerce applications; location based services (LBS) are predicted to become the “killer application” of mobile commerce [Kölmel 2003, p. 88]. By adapting a service to take into consideration the position of the user, the provider is able to perform a pre-selection of services that would normally need to be done by the customer himself. It thus becomes easier for the customer to pick the best service, and, as a result, his satisfaction and willingness to pay rises [Rao and Minakakis 2003].

The attributes inherent to mobile marketing -i.e., personalization, ubiquity, interactivity and localization - generate significant potential for this innovative form of commercial communication. It is ideal for individualized and dialogue-oriented communication and is thus superior to measures of mass communication, which in present-day markets are hardly ever noticed. In addition, the mobile phone lends itself to enlarging a campaign’s reach through viral effects. A viral effect develops if recipients of advertising messages forward these to further recipients who do not belong to the initial target group of the campaign [Wohlfahrt 2002]. The advertising message received from a familiar sender can also be expected to have a greater effect on the receiver than a message directly from the advertiser. It has been proven that messages from neutral senders are perceived as more trustworthy than those coming from a self-interested sender [Kroeber-Riel and Weinberg 2003]. Through viral effects it is thus not only possible to enlarge the reach of mobile marketing campaigns, but also to enlarge their effectiveness.

The performance features presented above substantiate the great potential of mobile marketing as a new instrument of commercial communication. However, the success of a new marketing instrument depends largely on its acceptance by consumers. In this research we attempt to provide some insight to this important area. In the next section, we develop a model of consumer acceptance of mobile marketing, along with a number of associated hypotheses. The model is then tested in section 3, which describes the methodology and research findings. Finally, we round off with a summary, conclusions and implications for research and practice.

2. Developing a Model of Consumer Acceptance

2.1 Acceptance as the Main Driver of Successful Mobile Marketing

Since the mid-1990s, acceptance has gained considerable importance as a field of research. Acceptance research has provided important insights in explaining the success or failure of new products or services [Silberer and Wohlfahrt 2001]. Use innovations provide a special case. Use innovations are peculiar due to their market success being determined not only by their adoption but also by their continuous use thereafter [Kollmann 1998]. As the success of an innovative marketing instrument such as mobile marketing can only be ensured if it is continuously used by consumers, mobile marketing is to be considered as a use innovation. The communication of advertising content over mobile media can only be effective if consumers permit the continuous reception of advertising

messages on their mobile phone. For a well-grounded forecast of the acceptance of mobile marketing it is necessary to examine the adoption and use decisions as combined processes.

As mobile marketing is still in an embryonic stage of commercial deployment, most consumers have not yet had the chance to adopt and use it as an innovation. It is thus impossible to empirically measure adoption and use acceptance; consequently, as is typical in these scenarios, overall acceptance should be forecasted by measuring the attitude toward acceptance. The Theory of Reasoned Action (TRA) provides some important direction for this [Ajzen and Fishbein 1980]. As such, it is of major relevance to the development of a model for testing mobile marketing acceptance. The basic assumption of Ajzen and Fishbein's theory is that individuals consciously decide on performing or not performing a specific behaviour; they consider and evaluate various criteria concerning the behaviour before actually performing it. To give an advertising company the permission to send advertising messages to an individual's mobile phone can certainly be considered as a decision made consciously.

The most basic proposition of the TRA is that behaviour (B) is determined by behavioural intention (BI). The behavioural intention is in turn postulated to be a function of the individual's attitude toward the act (A_{act}) and the social norms (SN). Whether the attitude toward the act or the social norms exerts the greater influence on the behavioural intention depends on the individual and the decision object [Ajzen and Fishbein 1980]. This relationship can therefore be written as:

$$(1)\quad B \sim BI = w_1 A_{act} + w_2 SN$$

The parameters w_1 and w_2 each reflect the strength of the relative impact of the attitude toward the act and the social norms on the behavioural intention. The attitude toward the act in turn is determined by the individual's beliefs about consequences (B_i) and his evaluation of those consequences (E_i). That is:

$$(2)\quad \sum_{i=1}^{n} A_{act} = B_i \cdot E_i \qquad i = \text{number of consequences}$$

The social norms are a result of the individual's normative beliefs (NB_i), i.e., his assumption about what another person wants him to do, and his motivation to comply (MC_i) with the expectations of this person. It may be written:

$$(3)\quad \sum_{i=1}^{n} SN = NB_i \cdot MC_i \qquad i = \text{number of norm givers}$$

The third level of explanation specified above provides some additional insight about how the constructs "attitude toward the act" and "social norms" emerge. Nevertheless, the reliability of behavioural prediction does not increase by considering these additional constructs [Schiefele 1990]. Measuring the second level constructs, i.e., "attitude toward the act" and "social norms", will therefore be sufficient for this study. Reflecting these considerations the following hypotheses can be formulated:

H_1: The more positive the attitude toward mobile marketing the higher the behavioural intention to adopt mobile marketing.

H_2: The more positive the subjective perception of social norms concerning the adoption of mobile marketing the higher the behavioural intention to adopt mobile marketing.

Additionally, Shimp and Kavas [1984] were able to prove a causal relationship between the subjective perception of social norms and the attitude toward the act. For the research object examined in this study the following hypothesis can thus be formulated:

H_3: The more positive the subjective perception of social norms concerning the adoption of mobile marketing the more positive the attitude toward mobile marketing.

In the model developed for this study the acceptance construct is represented by the constructs "attitude toward the act" and "behavioural intention". The two factors are additionally connected by a causal relationship such that "attitude toward the act" predicts "behavioural intention". To identify and understand the determinants of the consumer acceptance of mobile marketing it is thus necessary to measure the factors determining the attitude toward mobile marketing. The following sections therefore focus on "attitude toward mobile marketing" as the central construct.

2.2 Consumer-Based Acceptance Drivers

2.2.1 Innovativeness

The first construct we will consider is innovativeness. For a precise conceptualisation of the "innovativeness" construct some authors differentiate the concepts of "innate innovativeness" and "actual innovativeness" [Im et al. 2003, p. 62]. "Innate innovativeness" constitutes the "innovativeness" that is part of each individual's personality. "Actual innovativeness" refers to the actual adoption of a specific innovation by a particular individual. As yet, mobile marketing has not been keenly used as marketing instrument and only a few consumers have experience in receiving advertisement on their mobile phone. The idea of "actual innovativeness" thus appears to be of little importance for this study. Notwithstanding, the concept of "innate innovativeness" is highly relevant for

investigating the acceptance drivers of mobile marketing. The following considerations therefore all refer only to this concept.

Consumers characterized by a high degree of innovativeness are usually very open to new experiences and tend "to make constructive use of information received" [Leavitt and Walton 1975, p. 549]. Considering the high advertising investments of the telecommunications industry as well as the strong media presence of topics related to mobile communications, individuals with a high level of innovativeness are likely to receive a large amount of information on mobile communications [Peter and Olson 2002]. This, in turn, leads such individuals to gain a substantial knowledge of all issues related to mobile communications and allows the formulation of the following hypothesis:

H_4: The higher the degree of innovativeness the larger the individual's knowledge about mobile communications.

2.2.2 Existing Knowledge

A central psychological determinant of consumer behaviour is an individual's knowledge. Existing knowledge affects the cognitive processes related to a consumer's decisions and is thus also an important determinant of the acceptance decision. A consumer's existing knowledge determines his ability to understand the features and usage of an innovation. Existing knowledge thus affects the consumer's perception of the innovation's complexity [Moreau et al. 2001, p. 15]. The innovation is perceived to be less complex if the consumer already possesses a certain amount of knowledge about the innovation itself or about a product similar to it [Sheth 1968]. In this case, the knowledge relevant to reducing the perceived complexity of mobile marketing is the knowledge about mobile communications. Mobile communications technology provides the technological basis for mobile marketing. The more familiar a consumer is with mobile communications in general the less difficult the use of mobile marketing services will appear to him.

According to diffusion theory, a negative relationship can be presumed between the perceived complexity of an innovation and its acceptance. In compliance with the conceptualisation of the acceptance construct in this study, the relationship between the perceived complexity of mobile marketing and the attitude towards it can be assumed as being negative. Since the perceived complexity of mobile marketing is again negatively influenced by existing knowledge about mobile communications, it can thus be hypothesized [Harnischfeger et al. 1999]:

H_5: The higher the existing knowledge about mobile communications the more positive the attitude towards mobile marketing.

2.2.3 Information Seeker-Behaviour

An individual's propensity to search and use information is an important construct in the analysis and explanation of consumer behaviour [Kroeber-Riel and Weinberg 2003]. Mobile marketing messages can be precisely adapted to individual preferences. They are thus more relevant to the consumer than non-personalized messages. However, the personal relevance of advertising messages also depends on the individual's propensity to receive information. It is plausible to assume that an individual's propensity to search and use information partly determines his attitude toward mobile marketing. In this regard it is possible to differentiate two archetypical consumers on opposite ends of a continuum. At the high-end of the continuum individuals characterized by a high degree of information sensitivity can be detected. They are commonly called "Information Seekers" [Becker 1976].

According to Optimum Stimulation Level (OSL) theory individuals strive to achieve a certain level of stimulation and are intrinsically motivated to collect information. Consumers with a high OSL aspire to a higher degree of stimulation, which they can reach by taking in external stimuli [Hoffman and Novak 1996]. As advertising stimuli are among these external stimuli, consumers with a high OSL can be expected to be fond of taking in advertising stimuli and having a positive attitude toward advertising in general.

In his study Raju [1980, p. 280] finds that individuals showing a high tendency towards "Exploratory Behaviour" are also characterized by a high OSL. Individuals displaying a strong tendency towards "Exploratory Behaviour" also tend to exhibit a high propensity to search and use information. They can therefore also be classified as "Information Seekers", which implies that "Information Seekers" also exhibit a high OSL, are fond of receiving advertising messages and have positive attitude toward advertising in general. This assumption has been empirically proven [Becker 1976]. It can thus be hypothesized:

H_6: The more distinctive the information seeker behaviour, the more positive the attitude toward advertising in general.

2.2.4 Attitude toward Advertising

The Theory of Cognitive Dissonance developed by Festinger is one of the most important theoretical concepts in explaining the integration of a single attitude into an individual's attitudinal system [1978]. The theory is based on the assumption that an individual is always aiming to keep his cognitive system in balance. If inconsistencies between several cognitions - i.e. opinions, attitudes, or expectations - arise, consumers experience a feeling of

discomfort. To overcome this displeasing feeling, consumers try to reduce the inconsistencies between their cognitions. One usable strategy is to reshape the attitude featuring the lowest resistance to become more consistent with the other attitudes of the system [Güttler 2003].

These considerations hold important implications for this study, as they allow us to determine the relationship between the attitude toward advertising in general and the attitude toward mobile marketing. Both attitudes are related: mobile marketing can be considered to be a subset of all available instruments for communicating advertising content. Consumers are likely to be highly familiar with advertising in general, as they are exposed to it on an everyday basis. Consequently, they can be expected to hold a stable and consistent attitude toward advertising in general. Mobile marketing on the other hand is to be classified as an innovation, to which only few consumers have yet been exposed. Consumers' attitudes toward mobile marketing can thus be assumed to be less stable and easily changeable. The attitude toward mobile marketing has a lower resistance to change than the attitude toward advertising in general. It therefore appears obvious that the attitude toward mobile marketing will be highly dependent on the attitude toward advertising in general. Therefore:

H_7: The more positive the attitude toward advertising in general the more positive the attitude toward mobile marketing.

2.3 Innovation-Based Acceptance Drivers

2.3.1 Perceived Utility

Many authors claim that consumers will only accept mobile marketing if they perceive a benefit in receiving advertising messages on their mobile phone [Kavassalis et al. 2003]. The information economical model of communication provides a theoretical basis for this claim. The model assumes the consumer as an active organism, who consciously decides on which advertising stimuli he or she perceives. During this decision process the consumer not only has to trade off the perception of advertising against other activities, but also has to select from different advertising sources. Time is the central restriction of this allocation problem [Kaas 1990].

According to Kaas [1990], a consumer perceives the advertising stimuli if its marginal utility exceeds the marginal utility that results from using an additional time unit to engage in an alternative activity. This implies that a consumer's attitude toward mobile marketing will be more positive the higher he perceives the utility of this marketing service.

H_8: The higher the perceived utility of mobile marketing the more positive the attitude towards mobile marketing.

Another theoretical concept offering an explanation for the utility perception of mobile marketing as a prerequisite for its acceptance is the uses-and-gratification-approach. According to this concept consumers consciously select and use certain media and contents to gratify specific needs. Katz et al. [1973] identify the following three categories of needs as being the most important:

1. "Needs related to strengthening information, knowledge and understanding";
2. "Needs related to strengthening aesthetic, pleasurable and emotional experience"; and,
3. "Needs related to strengthening contact with family, friends, and the world".

This cognition allows us to elaborate on the need for utility perception derived from the information economical model of communication. The uses-and-gratification approach implies that mobile marketing will only be accepted by consumers if perceived as an opportunity to gratify the needs for information, knowledge and social acceptance.

H_{8a}: The higher the perceived information utility of mobile marketing, the higher the overall utility perception of mobile marketing.

H_{8b}: The higher the perceived entertainment utility of mobile marketing, the higher the overall utility perception of mobile marketing.

H_{8c}: The higher the perceived social utility of mobile marketing, the higher the overall utility perception of mobile marketing.

2.3.2 Perceived Risk

Consumer behaviour is strongly influenced by perception of risk; consumers are usually uncertain about the consequences of a decision or an action [Bauer 1976]. Furthermore, it has been revealed that consumers try to minimize risk rather than maximize utility. A consumer's subjective risk perception can thus strongly determine his behaviour [Mitchell 1999]. This is especially true for the adoption of innovations, as consumers lack experience with the new product and find themselves in a situation of high risk. Consumers therefore try to reduce the risk associated with a certain behavioural decision. During an adoption decision this can result in the refusal of an innovation.

The risk associated with mobile marketing is mainly perceived as one of data security. New media services users tend to have concerns about data manipulation, unauthorized data access, and unwanted tracking of usage patterns. Another security issue concerns consumers' privacy. By using the mobile medium it is possible for

marketers to reach consumers anytime and anywhere. This characteristic provides the basis for high-potential, personalised mobile marketing on one hand, but also accounts for consumer's fear of privacy violations on the other.

As mentioned above, risk perception strongly influences consumers' willingness to adopt mobile marketing as an innovation. The causal relationship between risk perception and attitude toward mobile marketing can be assumed as being negative. We therefore hypothesize:

H_9: The higher the risk perceived, the more negative the attitude toward mobile marketing.

Figure 1 gives a graphical representation of the hypotheses described above. This model forms the basis for this research. It is empirically tested in the next section, which also outlines the methodology used in the research.

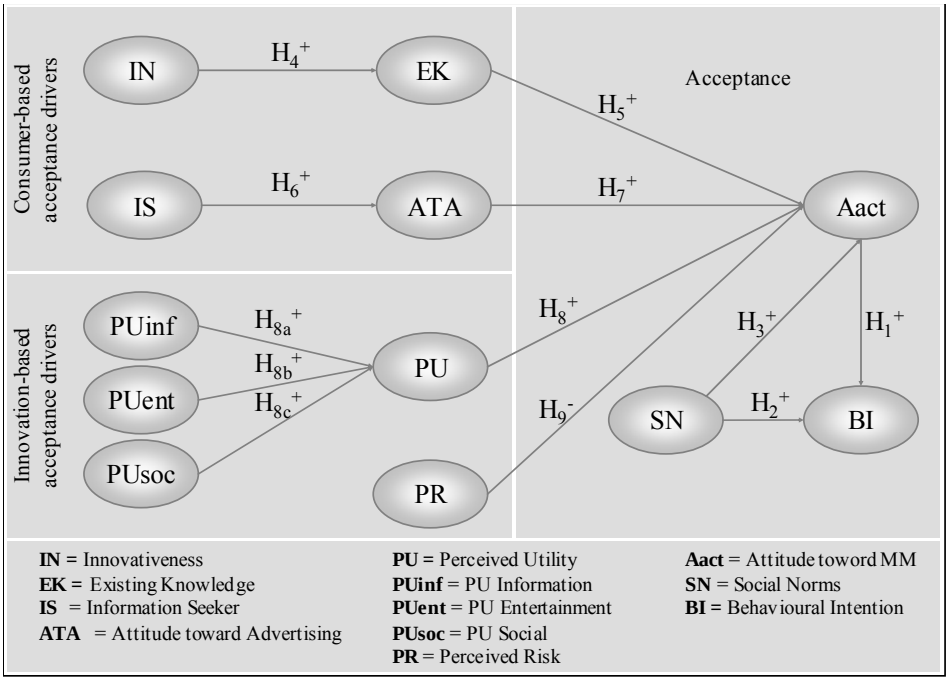

Figure 1: A model of consumer acceptance for mobile marketing

3. Empirical Test of the Developed Model

The hypotheses developed in the previous section were empirically tested by means of an online questionnaire. As is typical for such studies, a 7-point Likert scale was used to measure the constructs presented in the suggested model. The conceptualisation and development of the questionnaire was based on the existing literature. Table 1 summarises the informing literature for the concepts and items in our survey.

The survey instrument was refined during a pilot phase: a total of 41 individuals were asked to complete the questionnaire during a pre-test to ensure the internal consistency of the measurement instrument. Cronbach's α and the item-to-total correlation was brought in as orientation for the choice of items for the main study [Aaker et al. 2001]. As indicated by Table 1, the measurement instrument is based on existing inventories and could be considered rather long and unwieldy. Subsequently, the instrument was reduced to 29 items by deleting items with high cross-loadings. Further analysis showed that the construct validity was similar for the longer and shorter versions. Following the recommendations of Homburg and Giering [1996] we decided to use the less complex measurement instrument.

During a four-week period, 1,103 respondents completed the survey. The survey was mainly promoted online through e-mail-alerts, links on our department's website and on www.meineumfrage.com. Additionally, an online-panel was used for the recruitment of respondents. As an incentive for participation respondents were given the opportunity to take part in a lottery and win a mobile phone or mobile phone accessories. After sorting and removing duplicate submissions, a net sample of 1,028 usable questionnaires remained. A total of 420 (40.9%) of these participants were female and 608 (59.1%) were male. The average age was 30.51 years, ranging from 14 to 72 years. The majority of respondents (96.9%) own a mobile phone and use it mainly for making phone calls (96.3%). SMS is also very widely used by the respondents (88.5%). WAP (8.7%) and MMS (4.7%) are in contrast not very frequently

used by the consumers of the selected sample. However, this usage pattern for mobile communication services appears representative of the present usage of mobile communication services in general.

Table 1: Informing literature for developing the survey instrument

Concept	Literature source	Survey questions
Attitude toward mobile marketing	Shimp and Kavas [1984]	Aact1, Aact2, Aact3, Aact4
Social norms	Shimp and Kavas [1984]	SN1, SN2, SN3
Innovativeness	Oliver and Bearden [1985] Leavitt and Walton [1975] Darden and Perreault [1976]	IN1 IN2, IN4 IN3
Knowledge about mobile communications	Flynn and Goldsmith [1999]	EK1, EK2, EK3, EK4, EK5
Information seeker-behaviour	Raju [1980]	IS1, IS2, IS3, IS4
Attitude toward advertising	Pollay and Mittal [1993]	ATA1, ATA2, ATA3
Perceived information utility		PU1, PU2
Perceived maintenance utility		PU4, PU5, PU6, PU7
Perceived social utility		PU8, PU9, PU10
Perceived utility		PU3, PU11
Perceived risk	Hess [1995]	PR1, PR2, PR3

In order to verify the hypotheses developed in section 2, the LISREL approach was used. In particular, each of the research hypotheses H_1 to H_9 was subject to a validation process. As part of the research design phase, we have already developed a demanding set of chosen rating criteria to ensure an appropriate adaptation rating (see conditions column in Table 2). We selected a two-step procedure, as it allows for the best possible evaluation of LISREL models [Anderson and Gerbing 1988]. The model evaluation was conducted using the maximum likelihood method; this is particularly efficient since the maximum likelihood method features a number of desirable characteristics such as consistency and asymptotic efficiency.

Table 2: Test statistics of the optimised universal model

Category	Criteria	Condition	Value
Preconditions	Plausibility		Yes
	Identifiableness	$t < ½ p (p+1)$	Yes
Global adjustment indices	χ^2/df	< 3.0	3.0
	GFI	> 0.9	0.93
	AGFI	> 0.9	0.91
	SRMR	< 0.08	0.051
Local adjustment indices	R^2 of measuring equations	> 0.3	0.61 (Min)
	R^2 of structural equations	> 0.3	0.31 (Min)
	FR	> 0.6	0.823 (Min)
	DEV	> 0.5	0.700 (Min)
	Standard error	< 0.14	0.076 (Max)
	t-values	> 1.645	2.84 (Min)
	Fornell-Larcker-criterion	DEV > squared correlation	Yes

The first confirmatory factor analysis included all of the available indicators to measure each of the constructs and provided the following rating values: RMSEA = 0.045, standardized RMR = 0.051, CFI = 0.97, and GFI = 0.983. The modification indices provided by LISREL [Jöreskog and Sörbom 1996] serve as indicators for the refinement of the measurement inventory and tend to suggest a reduction in the items used. The basic criteria of plausibility and identification were met and all the global adjustment indices reached the requested values. This suggests that the model very well reflects the covariance structure. The model fit can be regarded as being excellent and the tested model can be accepted. Figure 2 illustrates the solution found after 17 iterations.

The acceptance of the tested model allows for the confirmation of all the hypotheses tested in section two. The assumptions referring to the acceptance construct conceptualised on the basis of the Theory of Reasoned action are

confirmed. The attitude towards mobile marketing thus strongly determines the behavioural intention to use mobile marketing services (H_1). Likewise the behavioural intention is positively influenced by social norms (H_2). However, with a total effect of 0.1 this relationship appears rather weak. The significantly stronger total effect of the personal attitude (0.79) on behavioural intention is plausible as the mobile phone can be categorized as a highly personal medium. The model generated also suggests that the attitude is strongly influenced by social norms (H_3). This implies that for mobile marketing social norms have only a slight direct influence on the behavioural intention, but that they determine it indirectly by influencing attitude. The total effect of social norms on the behavioural intention is 0.38.

The hypotheses about the consumer-based constructs driving the acceptance of mobile marketing are also confirmed in this empirical analysis. "Innovativeness" influences "knowledge about mobile communications" positively (H_4), and the "information seeker-behaviour" construct determines "attitude toward advertising" (H_6). "Knowledge about mobile communications" again effects the "attitude towards mobile marketing" positively. The magnitude of this relationship is, however, very low (H_5). The hypothesis can thus be claimed as being confirmed, but the deduction of any further implications is not really possible. This is also true for the relationship between the constructs "attitude toward advertising" and "attitude toward mobile marketing" (H_7).

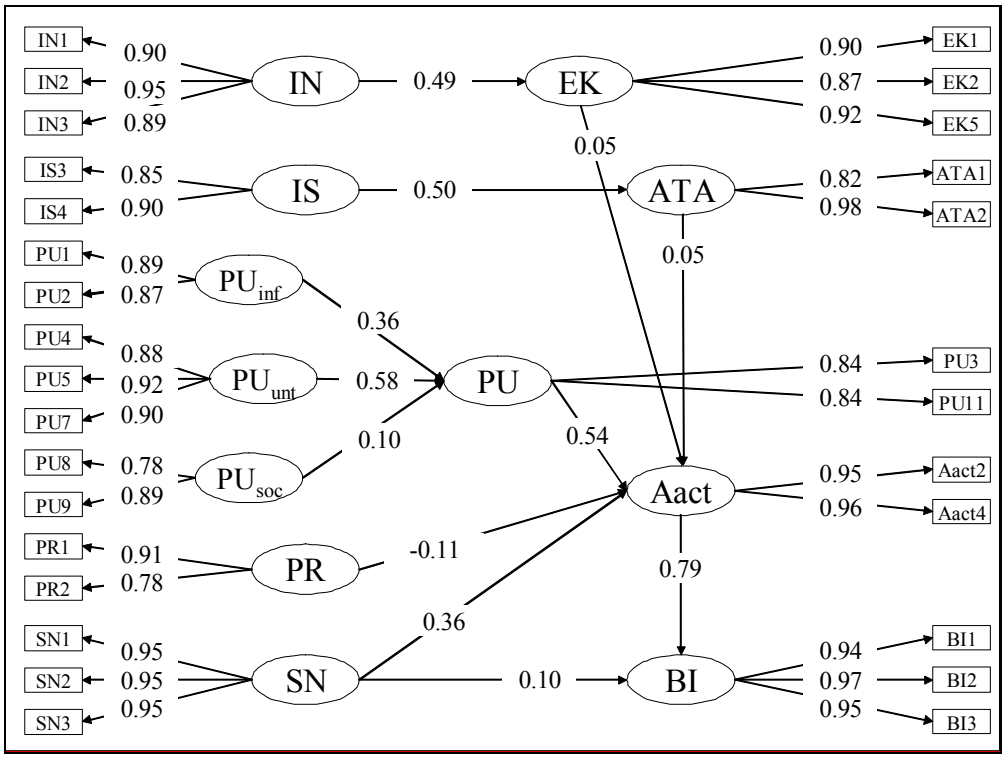

Figure 2: Results of testing the research model

Additionally, the positive relationship between "perceived utility" and "attitude toward mobile marketing" (H_8) is confirmed as well as the positive influence of information, entertainment, and social utility on overall utility (H_{8a}, H_{8b}, H_{8c}). Confirmation can also be found for the negative influence of "perceived risk" on the attitude toward mobile marketing (H_9).

Table 3 shows the total effects of the model constructs on the target variable. The quantitative analysis of the effects of each construct on "behavioural intention" reveals that "perceived utility", with a total effect of 0.43, is the central driver of the consumer acceptance of mobile marketing. Among the utility types determining the overall utility perception are the perceived entertainment value and the perceived information value, with total effects of 0.25 and 0.15 respectively. These can be identified as the most important drivers of utility perception.

Table 3: Total effects of the model constructs on "behaviour intention"

Construct	Sum of partial effects	Total effect
Attitude toward mobile marketing	0.79	0.79
Social norms	0.36 • 0.79 + 0.10	0.38
Innovativeness	0.49 • 0.05 • 0.79	0.02
Knowledge about mobile communications	0.05 • 0.79	0.04
Information seeker-behaviour	0.50 • 0.05 • 0.79	0.02
Attitude toward advertising	0.05 • 0.79	0.04
Perceived information utility	0.36 • 0.54 • 0.79	0.15
Perceived maintenance utility	0.58 • 0.54 • 0.79	0.25
Perceived social utility	0.10 • 0.54 • 0.79	0.04
Perceived utility	0.54 • 0.79	0.43
Perceived risk	- 0.11 • 0.79	- 0.09

4. Summary and Conclusions

This study has proved the validity of the Theory of Reasoned Action for research in the area of mobile marketing. The empirical results also imply that social norms only have a slight direct influence on behavioural intention, but are a strong indirect determinant via personal attitude towards the act. The research failed to deliver empirical evidence for a significant influence of the consumer-based determinants "knowledge about mobile communications" and "attitude toward advertising" on the attitude toward mobile marketing. A segmentation of potential mobile marketing users based on the consumer characteristics mentioned does not appear promising. The research data provides evidence for the positive relationships between the constructs "innovativeness" and "knowledge about mobile communications" as well as for "information seeker-behaviour" and "attitude toward advertising". Further, the frequently mentioned necessity for mobile marketing to demonstrate some value in order to be accepted has been empirically validated in this study. Entertainment and information value are identified as the central acceptance drivers of mobile marketing.

These results underline the importance of precisely embodying mobile marketing messages and campaigns according to consumer entertainment and information requirements. Only if mobile marketing messages are designed creatively and are entertaining, or if they provide a high information value, will consumers develop a positive attitude towards mobile marketing leading to the behavioural intention to use mobile marketing services. Whether the focus of marketing effort should be on entertaining or informational messages should be decided depending on the overall communication strategy for the individual product or service, taking into account the desired integration of communication efforts. However, marketers should definitely be advised against using impersonalised mass messages for communicating advertising content. These types of messages offer neither information nor entertainment value and are most likely to evoke negative reactions from consumers.

Another result of this study is that risk perception negatively determines the attitude toward mobile marketing. Risk perception in the context of mobile marketing mainly results from the fear of data misuse and the reception of unwanted mobile marketing messages. Clearly, the establishment of a well-founded basis of trust for mobile marketing as a generic form of marketing communication has to be a major goal for all advertising companies. This is the prime prerequisite for consumers' willingness to permit the reception of advertising messages on their mobile phones and to provide personal data for the personalization of those messages. Thus, it is a prerequisite for the consumer acceptance of mobile marketing.

The conclusions elaborated above not only deliver valuable implications for marketing practitioners but also reveal some major directions for future research on mobile marketing:

- One of the major limitations of the study is the bias from the older student sample (age average: 30.51 years). As section 2 indicates, the effects can be assumed to be different for younger consumers. It would therefore be very enriching to test the model with a sample of consumers of age 14-19 years. In general, it would be valuable to use multigroup analysis to see of the model operates invariantly, e.g., across gender and age groups.
- Further research is also needed on the concept of permission marketing. As this concept appears to be a prime prerequisite for mobile marketing acceptance the ideal way of implementing this idea needs to be identified. Research in this context should reveal how consumers prefer to provide permission and profile information.

- In this study, mobile marketing has been conceptualised as a single construct. However, within this there are likely to be a variety of mobile Internet tools. Therefore, it is recommended that future research provides specific examination of different advertising tools.
- Research assessing ways to create and increase the information and entertainment value of mobile marketing campaigns will be very valuable for the further development of this mode of advertising.
- Another field of future research should address the issue of risk perception of mobile marketing. In this context it will be necessary to thoroughly survey consumers' main sources of risk perception in order to be able to address it. According to current research-results concerning consumer behaviour on the internet, we assume that trust-evoking mechanism such as third trusted party, trust-intermediates and branding may be effective instruments to reduce the global risk-perception of mobile marketing.

Our future research will begin to tackle these challenges. We hope that these issues will also be given attention by other researchers in this area.

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Appendix: The survey instrument used in the study (translated from German to English)

Item		Source
IN1	Usually I am among of the first to try out a new product.	Oliver and Bearden [1985]
IN2	Often I try new products before my friends do.	Leavitt and Walton [1975]
IN3	Generally, I enjoy buying new products.	Darden and Perreault [1976]
EK1	I have a profound knowledge about mobile communications.	Flynn and Goldsmith [1999]
EK2	In comparison to my circle of friends I am an expert in mobile communications.	
EK5	In my circle of friends I am usually the first who knows about the latest mobile phones.	
IS3	I enjoy reading different advertising for the sake of comparison.	Raju [1980]
IS4	I tend to read a lot of different advertising just for the sake of a change of pace.	
ATA1	Generally I find advertising a good thing.	Pollay and Mittal [1993]
ATA2	I like advertising.	
PU1inf	Through advertising messages via the mobile phone I receive timely information.	self created
PU2inf	Through advertising messages via the mobile phone I receive exclusive information.	
PU3	The advertising messages customized to my profile are useful.	
PU4unt	I find advertising messages via the mobile phone exciting.	
PU5unt	The advertising messages customized to my profile are fun.	
PU6	Participating in an SMS lottery is fun.	
PU7	I find SMS messages are entertaining.	
PU8	I forward SMS messages I like to my friends.	
PU9	By using advertising messages via the mobile phone I can demonstrate my innovativeness to my friends.	
PU11	I can benefit from advertising messages via the mobile phone.	
PR1	There is a risk of personal data being misused when using mobile marketing services.	Hess [1995]
PR2	There is a risk of receiving unwanted SMS-messages when using mobile marketing services.	
SN1	If I use mobile marketing services most of the people who are important to me will regard me as clever.	Shimp and Kavas [1984]
SN2	If I use mobile marketing services most of the people who are important to me will regard it as useful.	
SN3	If I use mobile marketing services most of the people who are important to me will regard it as valuable.	
AACT2	I find receiving advertising messages via the mobile phone positive.	Shimp and Kavas [1984]
AACT4	I appreciate receiving advertising messages via the mobile phone.	
BI1	My general intention to use mobile marketing services is very high.	
BI2	I will think about using mobile marketing services.	
BI3	I will use mobile marketing services in the future.	