

Mobile Advertising in Different Stages of Development: A Cross-Country Comparison of Consumer Attitudes

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Abstract

Mobile technologies imply many opportunities for marketing, in particular a direct communication with consumers without time or location barriers. However, some aspects of mobile marketing such as mobile advertising still require further research. The diffusion of mobile technologies is considered a factor that may impact consumers' perceptions and behavior. Consumer attitudes toward mobile advertising are an important issue, but little is known about the role of m-commerce diffusion in attitude formation. Consumer attitudes toward mobile advertising may therefore differ across countries. This paper investigates whether consumers in more advanced markets concerning m-commerce show a different attitude toward mobile advertising than consumers in less developed markets. We present two empirical studies conducted in Japan and Austria. The results indicate that entertainment and informativeness are significant antecedents in both samples, but with different strengths of relationship.

1. Introduction

Successful innovative technologies are often applied by firms for commercial purposes. After the emergence of electronic commerce this development can now be observed in mobile commerce. Like Web-based e-commerce, mobile technologies allow a large variety of different innovative approaches in business model design. One important area is marketing, where m-commerce-related marketing instruments can benefit from an advanced degree of personalization and interactivity. Due to the mobility of the involved electronic devices, mobile marketing can, more than any other medium, take the customer's context into account [4]. While many e-commerce-specific marketing instruments are limited to the location of a non-portable computer, m-commerce allows their application in physical stores, offices, pubs, public

transportation, and other locations where a personal computer is not available.

The high number of opportunities to use creative and innovative marketing activities in m-commerce implies, however, that marketers need to gain insights into relevant issues of consumer behavior in the m-commerce context. Particularly due to the high degree of innovativeness, knowledge about consumers' reaction to m-commerce-based marketing activities is vital for m-commerce success. When marketing activities are related to innovative technologies, consumers' attitudes are likely to be influenced not only by the marketing activity itself, but also by perceptions of the underlying technology. Since attitude toward technology is likely to change during the technology diffusion process, we can also assume that attitude toward commercial applications of a technology and their usage as a marketing tool are also influenced by the stage of technology adoption. Therefore marketers have to take different stages of diffusion into account when designing mobile advertising campaigns.

Attitude is a key variable of consumer behavior which is highly relevant both from the marketing and the information systems perspective. Marketing research revealed that attitudes toward advertising are strongly associated with the success of an advertising campaign [19], [2], [30]. In IS research, the technology acceptance model (TAM) [10], [11] clearly indicates the strong impact of attitudes on intention to use and therefore to accept a technology.

These considerations lead to the research motivation of this paper. To gain insights into the question whether consumers' attitudes toward mobile marketing activities differ between markets at different stages of the technology diffusion process, we propose a model of antecedents of attitudes. To address this research goal in one particular context of mobile marketing, we focus on mobile advertising (i.e. advertising via mobile devices). Our research model is based on findings from research on Web-based

advertising [15], [16]. It is validated in two different settings, i.e. a country in which m-commerce is in an early stage of the diffusion process (Austria) and a market which has adopted mobile commerce to a larger extent and is therefore more advanced in the diffusion process (Japan). The investigation is based on consumer surveys in these two markets.

The paper is organized as follows: In the next section, a literature review on m-commerce research and technology diffusion is provided. Then, we give an overview on mobile advertising in the two investigated countries. After that, we propose the research model on consumer attitudes toward mobile advertising and investigate whether it is applicable in both markets in the same way. For this purpose we compute a structural equation model with two groups. On the basis of the results we identify the differences that arise between the two analyzed countries. The paper closes with an outlook on further relevant research issues in this field.

2. Literature Review

Research related to mobile advertising has shown that this marketing instrument is very effective as a branding vehicle and in stimulating a response, thus increasing brand attitude and purchase intentions [39]. Mobile advertising messages turned out to experience a high level of attention as they are usually read completely and frequently immediately after receipt [5]. In contrast to other forms of advertising, via classic mass media or Web-based advertising [9], [21], [50], [31], mobile advertising is a very young research topic. In marketing and IS literature findings on mobile advertising are increasingly becoming available. Most of this research is related to the analysis of antecedents of attitude toward mobile advertising (e.g. [28], [48], [50], [51], [29], [8]) or conceptualizations on an optimal delivery of mobile advertising messages to customers (e.g. [13], [47]). In the light of the increasing relevance of global marketing campaigns, however, deeper knowledge on cross-country comparisons is gaining importance. [51] stresses the fact that attitudes toward mobile advertising significantly differ across countries. For example, Finland, Germany, and Greece show completely different attitudes toward mobile advertising [49].

In analogy to the development of e-commerce, a central condition for mobile marketing opportunities is the available technological infrastructure and its adoption. Innovation diffusion theory (IDT) describes the process of the penetration of an innovation through certain channels over time in a social system [41], [42] and provides a theoretical basis for the adoption of

various kinds of innovative products, thus also for technological innovations. In the case of mobile communication services, it has to be mentioned that the product innovation is a medium itself. This leads to the implication that network effects [25], [26] which are related to mobile service technologies may turn out to be another important driver for diffusion.

Different research streams focus on user perspectives of diffusion and explore their drivers to adopt innovative products. In the widely accepted TAM, [10] and [11] have shown that perceived usability and perceived ease of use are good indicators of attitude toward an information technology and as a further result also on intention to use the technology. [24] analyze the innovation decision process in the context of information technology diffusion and combine the IDT approach with the theory of reasoned action. Their findings indicate that adopters are frequently intended by normative pressures whereas user intentions are determined by attitude. The study by [36] about the adoption of a particular information technology reveals that the decision not to use a technology is caused by external influence, interpersonal influence, perceived usefulness, and service utilization. Beyond those decision-oriented approaches, other research approaches focus on the underlying processes that drive innovation adoption. In the context of the diffusion of telecommunication systems, [37] show that the information flow, its characteristics and reception as well as adoption resistance are determining factors that require deeper investigation. In their empirical investigation of the diffusion of WAP services in Taiwan, [23] reveal that connection speed, service costs, ease of use, peer influence, and facilitating conditions are key influencing factors.

However, diffusion processes happen gradually in different markets, worldwide diffusion thus shows time lags [38]. These time lags also influence consumers and their attitude toward technology. Overall, the influence of technology diffusion on the usage of technology-related applications can be threefold: in a first instance, penetration of technology is a limitation to potential users. Only those consumers can be addressed with technology-based applications that have access to the respective technology. Furthermore, characteristics of the technology can determine the users' willingness to apply it. [34] for instance, showed that consumers accept broadband Internet access mainly due to its attributes. Finally, technology users' habits and expertise can determine their attitudes toward applications of the technology. Consumer attitudes are a major impact factor for innovation adoption [12]. [24] report that the users' attitudes toward a technology are influenced by the adoption

stage. Attitudes are much more based on perceived usefulness and image enhancements among users who already have adopted the technology. Accordingly, attitudes toward new technologies among inexperienced and experienced users differ [33]. Consumer attitudes are therefore strongly connected to the diffusion stage of the technology.

3. Mobile Technology Diffusion in Different Markets

The diffusion of wireless communications depends on a country's characteristics, its culture, and its adoption timing [45]. A country that adopts an innovation early usually shows a slower diffusion process than a country that is imitating the innovation from another country. This effect becomes stronger if the imitating country is similar to the innovating country [14], [18]. Not surprisingly, this development offers many future opportunities for marketers. By now the efficiency of mobile devices as marketing tools has not been sufficiently investigated. The research gap on this topic can be explained by slow technological developments in the telecommunications sector in Europe or the US.

The two countries involved in the present study show considerable differences concerning their diffusion of m-commerce applications. Japanese consumers, who are active users of m-commerce and the mobile Internet for about 5 years, may give insights on the reactions of consumers who will be confronted with these technologies in the near future. Austria on the other hand, is a country where consumers are also exposed to mobile marketing to a high extent which was mainly influenced by its low cultural distance to Sweden, the most innovative country in its cluster [45]. But the level of technology development is much lower than in Japan. Hence there are considerable differences in diffusion between Japan and Austria concerning the communications channel, the time dimension, and the social system, which led to differences in the diffusion of mobile telecommunication technology in Japan and Austria.

As a consequence, we can assume that Japan is situated in a more advanced status of mobile telecommunication services and m-commerce than Austria. We therefore investigate whether the stage of the diffusion process also reflects on consumer attitudes toward mobile advertising. To do so we compare the two markets described above, i.e. Japan and Austria, and analyze a structural equation model on consumers' attitude toward mobile advertising. In the following sections the model development and hypotheses formulation takes place.

4. Attitudes toward Mobile Advertising

[27] refers to advertising as "any paid form of non-personal presentation and promotion of ideas, goods or services by an identified sponsor" (p. 590). This activity can also be performed via a wireless (mobile) medium, which provides constant access to the internet. Mobile advertising can therefore be defined as "the usage of mobile Internet-based media to transmit advertising messages to consumers in form of time and location sensitive, personalized information with the overall goal to promote goods and services". The transmission media are any kind of mobile devices, such as cellular phones and pagers, cordless telephones, personal digital assistants, two-way radios, wireless networking systems, global positioning systems (GPS)-based locators and maps [3].

Attitude toward advertisements is considered a significant explanatory variable in measuring advertising response [30]. Attitudes in general are mental states used by individuals to structure the way they perceive their environment and guide the way they respond to it [1]. An attitude toward advertisements is "a learned predisposition to respond in a consistently favorable or unfavorable manner toward advertising in general" [30, p. 54]. It is important to note that attitude toward mobile advertising pertains to consumers' attitude toward this advertising type in general and not to the exposure to one particular advertisement.

Consumer attitude toward mobile advertising is influenced by a number of antecedents [35]. As [28] point out, there is a strong relationship between the intention to receive m-advertising messages and the attitude toward them. [29] investigated which factors impact consumers' willingness to accept mobile advertising messages based on the design of the message and the related technology. The identified factors are the role of the mobile medium in the marketing mix, the development of technology, individualization, i.e., the character as a one-to-one marketing medium, and a regulatory framework. [4] investigated consumers' acceptance of mobile advertising and identified user permission, wireless service provider control, and brand trust as key impacting factors. Similarly, [8] posit that permission and the message content are key drivers of consumers' acceptance of mobile advertising messages. The following subsections present the components of our model explaining consumer attitudes toward mobile advertising. The independent variables of the model

are advertising value, entertainment, information, and irritation (Figure 1).

5. Antecedents of Attitude towards Mobile Advertising

Advertising value is a measure for advertising effectiveness and “may serve as an index of customer satisfaction with the communication products of organizations” [16, p. 1]. It is defined as “a subjective evaluation of the relative worth or utility of advertising to consumers” [15], [16, p. 1]. Value is potentially derived from the expectations about an offering itself, from experiences accompanying the exchange, and from the residual of having engaged in behaviors necessary to achieve the exchange [22]. Values are the base of actions, attitudes, and judgments in advertising as well as in other aspects of social life [6]. This is also true for advertising values. Advertising value of Web-based advertising has a significant impact on attitude toward Web-based advertising [16]. We thus conclude that a highly perceived value of mobile advertising also reflects positively on the consumers’ attitude toward mobile advertising.

H1: A high advertising value is positively associated with consumer attitude toward mobile advertising.

Entertainment of the advertising information is significantly related to the perceived value of

providing games and prizes via text messaging (SMS) yields high participation. Games, ringing tones and other entertainment contents are standard in Japanese mobile phones. This trend is expected to be reinforced by faster network speeds, increasing processing power [17]. Japanese consumers accordingly regard their mobile not as a mere communication tool but as portable entertainment players [20]. An entertaining advertising message is therefore being perceived more positively by recipients and reflects on their perceived advertising values and attitudes. Therefore we hypothesize that:

H2a: A high entertainment factor of the advertising message is positively associated with consumer attitude toward mobile advertising.

H2b: A high entertainment factor of the advertising message is positively associated with the perceived value of mobile advertising.

Informativeness: The quality of the information placed on a company web site has a direct influence on the customers’ perceptions of the company and the company’s products. Accordingly, the information delivered to them via mobile devices also needs to show qualitative features like accuracy, timeliness, and usefulness for the consumer [44]. In any event, consumers want the content of mobile services to be relevant for them and to be tailored to their interest [32], [40]. Not surprisingly, informativeness of the advertising information is therefore strongly related to

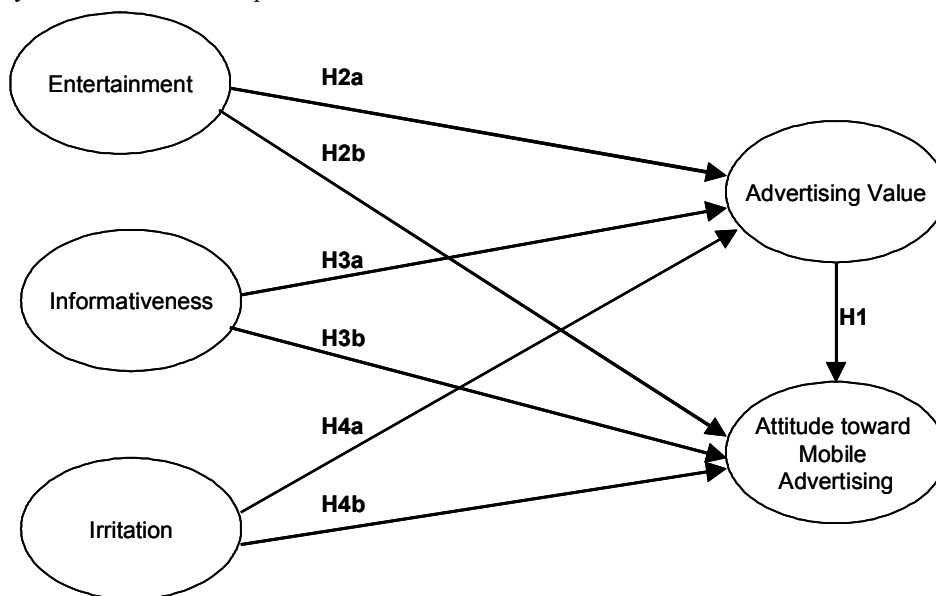


Figure 1. Research Model on Antecedents of Attitude towards Mobile Advertising

traditional advertising [15]. Entertainment services can increase customer loyalty and add value for the customer. As most people have a natural playfulness,

the advertising value when it is transferred via traditional media vehicles [15]. We conclude that:

H3a: A high informativeness of the advertising message is positively associated with consumer attitude toward mobile advertising.

H3b: A high informativeness of the advertising message is positively associated with the perceived value of mobile advertising.

Irritation: Indignity people feel when they are addressed by advertisements has a very large impact on people’s attitude toward advertising [43]. “When advertising employs techniques that annoy, offend, insult, or are overly manipulative, consumers are likely to perceive it as unwanted and irritating influence” [16, p. 23]. Mobile advertising may provide an array of information that can be distracting and overwhelming the consumer with information [46]. Consumers then feel confused about them and react negatively. We therefore conclude that irritation caused by incomprehensible or unwanted mobile advertising messages may reflect negatively on the perceived value of mobile advertising.

H4a: A high irritation factor of the advertising message is negatively associated with the perceived value of mobile advertising.

H4b: A high irritation factor of the advertising message is negatively associated with the perceived value of mobile advertising.

6. Study Method

In order to test the hypothesized model a standardized survey in Austria and Japan was conducted. In Austria 600 mobile phone owners were interviewed on their perceived advertising value. The interviewed persons were undergraduate business students of an Austrian university. 448 of the 600 questionnaires handed out were returned. 164 of them provided usable answers for this investigation. Collection of the Japanese data was conducted during a 4 weeks period. The interviewees were undergraduate business students of two different Japanese universities. 450 questionnaires were handed out, 420 of them were returned. 170 of them provided usable answers for this investigation. This resulted in a response rate of 27.3% in the Austrian sample and 37.3% in the Japanese sample.

The survey was carried out by means of standardized questionnaires in German and Japanese language. The questionnaires were first developed in English and then translated into both languages by native speakers. After a back-translation two pre-tests (Austria: 30 students, Japan: 35 students) were conducted and adaptations were integrated into the questionnaires.

7. Results and Discussion

We carried out model testing by means of a partial least squares (PLS) analysis as the sample size is small and the manifest variables are not normal distributed. The applied analysis software is SmartPLS, an open-source software developed by the University of Hamburg. To calculate the significance of the path coefficients, a bootstrapping procedure was carried out that yielded T values. Path coefficients with T values higher than 1.65 are significant at a 5% level. Table 1 and Figures 2 and 3 show the results of the PLS analysis.

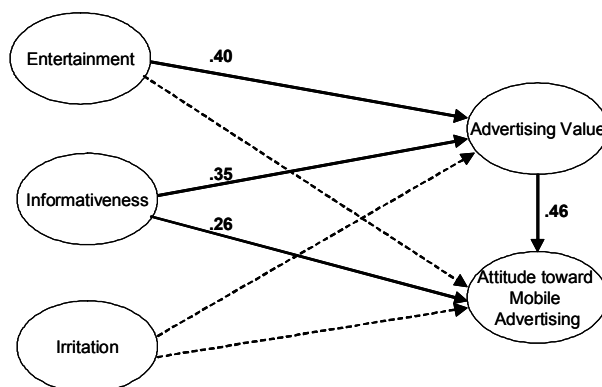


Figure 2. Results of the Austrian Model

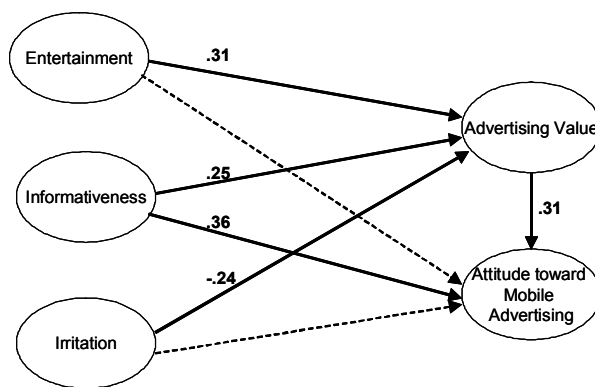


Figure 3. Results of the Japanese Model

Hypothesis 1 states that a highly perceived value of mobile advertising influences consumers’ attitudes toward mobile advertising. This hypothesis could be supported both for the Austrian and the Japanese sample. In the Austrian sample, this relationship is the strongest throughout the model (path coefficient: .456). Like in our study, prior results in advertising research also indicate a positive relationship between the value

of advertising and the attitude toward it. This relationship has been reported in Web-based advertising as well. [7]’s study on advertising on the Web confirmed [16]’s results, which also showed that a high advertising value reflects positively on consumer’s attitude toward advertisements.

Hypothesis 2a predicts that entertainment is positively associated with advertising value when addressing consumers via mobile devices. This hypothesis is supported by data of both samples. Moreover, the relationship turned out to be high. In the Japanese sample, the path coefficient of .409 is the highest throughout the model, in the Austrian sample this is the second-largest relationship. Hypothesis 2b suggests a positive impact of entertainment on attitude. This relationship could not be revealed in both groups. This result differs from findings in literature on attitude toward advertising in general. Entertainment has turned out to increase advertising value in different empirical investigations [7], [16].

and attitude toward it. Irritation turned out to show the smallest impact. Hypothesis 4a (impact of irritation on advertising value) was supported by the Japanese sample, but not by the Austrian one. The negative impact of irritation on attitude toward mobile advertising (Hypothesis 4b) could not be confirmed by both data sets.

Comparing the Austrian and the Japanese samples, we can identify several similarities. The positive impact of entertainment on advertising value, the positive impact of informativeness on both target variables, and the positive impact of advertising value on attitude toward mobile advertising could be shown among the Austrian respondents as well as the Japanese. The only difference in the significance of paths could be found in the context of irritation. Here the Japanese show a significant negative impact on advertising value which could not be confirmed for the Austrian sample. This difference may be grounded in the higher average number of received mobile advertising messages in

Table 1: Structural Model Results Austrian and Japanese Model

Paths	Austrian Sample			Japanese Sample		
	Parameter Estimates	t-values	Hypothesis	Parameter Estimates	t-values	Hypothesis
Advertising Value -> Attitude toward Ads (H1)	.456	4.306	Supported	.310	2.128	Supported
Entertainment -> Advertising Value (H2a)	.400	3.097	Supported	.409	2.715	Supported
Entertainment -> Attitude toward Ads (H2b)	.065	.511	Unsupported	.113	.622	Unsupported
Informativeness -> Advertising Value (H3a)	.354	2.956	Supported	.250	1.70	Supported
Informativeness -> Attitude toward Ads (H3b)	.263	2.401	Supported	.368	2.356	Supported
Irritation -> Advertising Value (H4a)	-.101	.738	Unsupported	-.242	2.914	Supported
Irritation -> Attitude toward Ads (H4b)	-.126	.964	Unsupported	-.068	.852	Unsupported

Hypotheses 3a and 3b indicate that high informativeness of an advertising message has a positive impact on advertising value and attitude toward mobile advertising. Both hypotheses are supported for the Austrian and the Japanese samples. Therefore informativeness turns out to be a variable that affects both advertising value and attitude toward mobile advertising which shows that this variable plays a key role in mobile advertising. The result on the positive impact of informativeness on the target variables is consistent with related prior findings [16].

Hypotheses 4a and 4b predict irritation to be negatively associated with mobile advertising value

Japan compared with Austria. Austrian consumers are less exposed to mobile advertising messages as legal regulations require firms to follow the permission marketing approach and thus prohibit firms to send out advertising messages without the recipients’ prior consent. As consumers explicitly must agree to the receipt of mobile advertising messages in Austria, they may feel less irritated by mobile advertisements than Japanese.

Concerning the strength of the impact, we can observe that the relationship between advertising value and attitude toward mobile advertising is stronger in the Austrian group. The Austrian sample also shows a

stronger impact of entertainment on advertising value than the Japanese sample does. This difference may be grounded in different advertising strategies in the investigated countries. While Austrian mobile advertising messages are primarily information-oriented, Japanese firms have right from the start very strongly promoted the mobile Internet as a means of entertainment rather than an information tool. Therefore, Japanese mobile phone users might expect entertaining advertisements to a higher extent and will thus be less surprised by humorous ads than Austrians may be.

In the Austrian sample the indirect impact of informativeness on attitude toward mobile advertising (mediated by advertising value) is higher than the direct impact. Therefore Austrians seem to appreciate and value informative advertising messages to a higher extent. But Austrians do not alter their attitude toward mobile advertising as much as Japanese do if they receive informative messages. Therefore, according to the results, Austrian consumers obviously perceive informative mobile advertisements as more valuable than Japanese, but this directly influences their attitude to a smaller extent. In the Japanese sample the opposite is true, here the direct impact is larger than the indirect one. Therefore, informative messages impact attitude toward mobile advertising more strongly than advertising value. In contrast to Austria, informative messages are the largest impact factor for attitude formation, even larger than advertising value. This result stresses the high importance of mobile advertising messages in Japan to be informative.

Given these different stages of technology diffusion and cultural differences between the predominantly individualistic Austrian and the mainly collectivistic Japanese society, the results imply that antecedents seem to be rather stable in different environments. The findings show that there must be similar mechanisms that impact advertising value and attitude toward advertising which are furthermore similar to those already identified in the context of web-based advertising [15], [16].

The findings also have implications for practice. First, informativeness seems to be a strong antecedent of attitude toward mobile advertising. Therefore advertisers should make sure that their mobile advertising messages contain information that is useful to the recipients.

The differences in the results between Austrian and Japanese consumers are resulting in different recommendations for advertisers in both countries. In Austria, the positive relationships between entertainment and advertising value and advertising value and attitude are the strongest. Therefore advertisers should focus on this aspect. It can be

assumed that entertaining messages are popular at least among young, well-educated Austrian consumers. Entertaining messages can offer a form of differentiation from competitors and in combination with interactive elements (e.g. ringing tones download, games), it is also possible to attract consumers for a longer period of time. Furthermore, if Austrian consumers are receptive for entertaining messages, firms could combine their mobile advertising messages with promotional activities, e.g. online lotteries. In general, Austrian advertisers should try to motivate consumers to use mobile Internet applications. This could be done by integrating mobile Internet activities with other marketing instruments, e.g. price reductions.

The situation is different in Japan. According to the study, Japanese consumers are more receptive to informative messages, possibly because they used to receive entertaining messages frequently. Particularly Japanese advertisers that have tended to entertain their target groups should consider a stronger informational content for their advertising message design. In contrast to Austria, Japanese firms could differentiate from competition by enriching the informational content of their messages and providing information that goes beyond advertising contents. Furthermore, as irritation is an issue in Japan, a permission marketing-based approach is recommended. It may help firms to avoid customer irritation. Japanese advertisers may benefit from such a strategy even if this is associated with a smaller amount of transmitted advertisements. If a firm sends out advertising messages with the recipients' consent, it is also more likely that detailed and enriched informational messages are read and absorbed.

8. Conclusion

The present study offers several research avenues, but certainly has some limitations. The analysis should be replicated with larger sample sizes and more representative groups of respondents. Furthermore, it is worth considering additional possible antecedents, e.g. trust, message credibility or privacy issues. Another dimension that was not addressed in the study are demographics as there might be differences between men and women but also across different age groups. Based on particularities of mobile commerce, the relevance of informativeness of a mobile advertising message should be revisited. In contrast to Web-based advertising, mobile advertising can provide valuable, time and location-oriented information for consumers. Future research must also clarify cross-cultural perceptions on entertainment, informativeness, and irritation of mobile advertising. Another issue is the

“evergreen” discussion of standardization vs. adaptation of global advertising activities. The impact on standardization or adaptation of global mobile advertising needs to be further investigated in order to develop normative recommendations for firms.

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