



Journal of Consumer Marketing

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Tao (Tony) Gao Fareena Sultan Andrew J. Rohm, (2010), "Factors influencing Chinese youth consumers' acceptance of mobile marketing", *Journal of Consumer Marketing*, Vol. 27 Iss 7 pp. 574 - 583

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Factors influencing Chinese youth consumers' acceptance of mobile marketing

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Abstract

Purpose – The purpose of this paper is to examine factors affecting consumers' acceptance of mobile marketing in China.

Design/methodology/approach – The authors draw on technology acceptance and uses and gratifications theories to develop a conceptual model of antecedent factors (including risk acceptance related to the mobile platform and personal attachment related to mobile devices) and marketing-related and value-based mobile activity related to the acceptance of mobile marketing practice. The conceptual model is tested using data collected among Chinese youth consumers.

Findings – The results confirm the importance of risk acceptance and personal attachment in influencing mobile marketing acceptance, and support the "priming" effect of regular mobile phone usage on orienting consumers toward accepting mobile marketing initiatives.

Research limitations/implications – The study is limited to a specific sample of youth consumers in China. The findings illustrate the role of antecedent factors – including personal attachment and risk acceptance – related to acceptance of mobile marketing in the Chinese market and they emphasize the role of marketing-related and value-based mobile activity in mediating the relationships between antecedent factors and mobile marketing acceptance.

Practical implications – The findings illustrate the importance of recognizing the drivers of, and obstacles to, mobile marketing acceptance. These factors included the likelihood of providing information, likelihood of accessing content, likelihood of sharing content, level of risk acceptance, and level of personal attachment to one's mobile phone.

Originality/value – The paper adds to the growing literature on Chinese youth consumers by examining their acceptance of mobile marketing. The study reveals several implications for theory and practice relating to the antecedents of mobile marketing acceptance among the youth consumer segment within China, a large and emerging market.

Keywords Mobile communication systems, Marketing communications, Communication technologies, Young adults, China, Consumer behaviour, China

Paper type Research paper

Introduction

Technology developments in mobile communications have begun to foster new platforms for brand-consumer interactions (Shankar and Malhotra, 2007; Sultan and Rohm, 2005). The Mobile Marketing Association (MMA) defines mobile marketing as "the use of wireless media as an integrated content delivery and direct response vehicle within a cross-media or standalone marketing communications program" (MMA, 2006). Increasingly, brand managers view mobile devices as an attractive platform from which to interact with consumers through various forms of marketing communications, including location-based promotions and television-style advertising. The success of mobile information and communication devices such as Apple's iPhone has focused attention towards the use of mobile devices for marketing communications. Furthermore, the current financial crisis across the globe has led to even greater expectations for growth in mobile advertising and marketing as companies turn to this

medium to save advertising costs (Geng, 2009). In particular, attention is increasingly focused on mobile marketing in China, where, according to its Ministry of Industry and Information Technology, the number of mobile subscriptions has reached 719.8 million in September 2009 (National Bureau of Statistics of China, 2009).

Specific consumer segments – such as the teen market – are using mobile phones increasingly as single-source communication devices (Sultan *et al.*, 2009; Gong and Li, 2008; Plant, 2006; Sangwan and Pau, 2005) that allow greater access to social circles, mobile-based content, and information. Accordingly, brands have also begun to tap aggressively into mobile platforms around the world-fueled in part by the success of branded iPhone application – in order to reach specific consumer segments such as teens and young adults. Examples from the Chinese market include Madhouse's partnering with China Telecom to bring advertising to mobile search and Pioco's campaign to broadcast Coca-Cola Bluetooth video commercials to Bluetooth-enabled cell phones. The future looks bright for the mobile platform as a new way to forge brand-consumer connections with Chinese youth consumers, especially with the rollout of 3G platforms in China in 2009 (Wang, X., 2009).

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Journal of Consumer Marketing
27/7 (2010) 574–583
© Emerald Group Publishing Limited [ISSN 0736-3761]
[DOI 10.1108/07363761011086326]

The authors would like to acknowledge the financial support of the Marketing Group, College of Business Administration at Northeastern University. They also thank the research assistance of Ting Cheng, Ting Zhang and Wei Zhang.

Yet, it remains unclear to what extent consumers in markets such as China will accept and engage in mobile marketing efforts (Merisavo *et al.*, 2007; Peng and Spencer, 2006). Numerous academic studies have noted the challenges confronting mobile marketing communications acceptance, including feelings of intrusiveness as well as trust and privacy concerns among consumers (e.g. Grant and O'Donohoe, 2007). Several brands (e.g. ESPN, Sprite, adidas) have launched mobile marketing efforts only to see sparse successes amidst a number of disappointing results. The Chinese youth generation, while having readily embraced the internet and mobile phones, are more demanding than older generations, question the authenticity and accuracy of online and mobile information, and exhibit moderate to low levels of trust and satisfaction with new media (see Meyer *et al.*, 2009).

Hence, the extent to which consumers in global markets such as China will accept commercial mobile marketing efforts remains unclear. Mobile carriers, advertisers, and policy makers are confronted with the perception of mobile marketing communications as intrusive, annoying, and as posing a threat to personal privacy. Yet, despite widespread evidence regarding the significant growth of the wireless market and its emerging role as a marketing communications medium, there is little empirical research on factors that influence mobile marketing acceptance among consumers across global markets, particularly within the Chinese market (Peng and Spencer, 2006; Xu *et al.*, 2009).

To address the paucity of academic research on consumers' acceptance of mobile marketing, one recent study (Sultan *et al.*, 2009) develops a conceptual model that investigates the influence of marketing-related and value-based mobile activity – including the use of mobile devices for information provision, sharing content, and accessing content – on consumer acceptance of mobile marketing practice. These factors are drawn from technology acceptance as well as uses and gratifications perspectives that emphasize the influence of usage factors and motives on behavioral intent. It also examines two additional antecedent factors, perceived risk acceptance and personal attachment, in order to better understand the role of risk acceptance and personal attachment to mobile phones (a construct somewhat unique to mobile devices) in indirectly influencing acceptance of mobile marketing practices among the youth market. This model received empirical support from data collected in a developed market (USA) and an emerging market (Pakistan). In the current study, we adopt the model proposed by Sultan *et al.* (2009) to empirically examine the acceptance of mobile marketing practices in the fast-growing and influential Chinese market and compare the findings with their previous study. We test our hypotheses by estimating a structural equation model of mobile acceptance.

In comparison with the few existing studies examining Chinese consumers' acceptance of mobile marketing, our study adopts a more general measure of mobile marketing acceptance than simply SMS (Xu, 2006; Zhang and Mao, 2008) or location-based advertising (Xu *et al.*, 2009). Furthermore, our conceptual model emphasizes the impact of consumers' prior involvement with the mobile medium through non-marketing mobile activities on their intention to accept the medium as a marketing platform.

In the next section, we review the extant literature and present the conceptual model of mobile marketing acceptance. We then detail our research methodology and

analyze the conceptual model. Finally, we discuss the study results, implications for theory and practice, study limitations, and directions for future research.

Conceptual model of mobile marketing acceptance

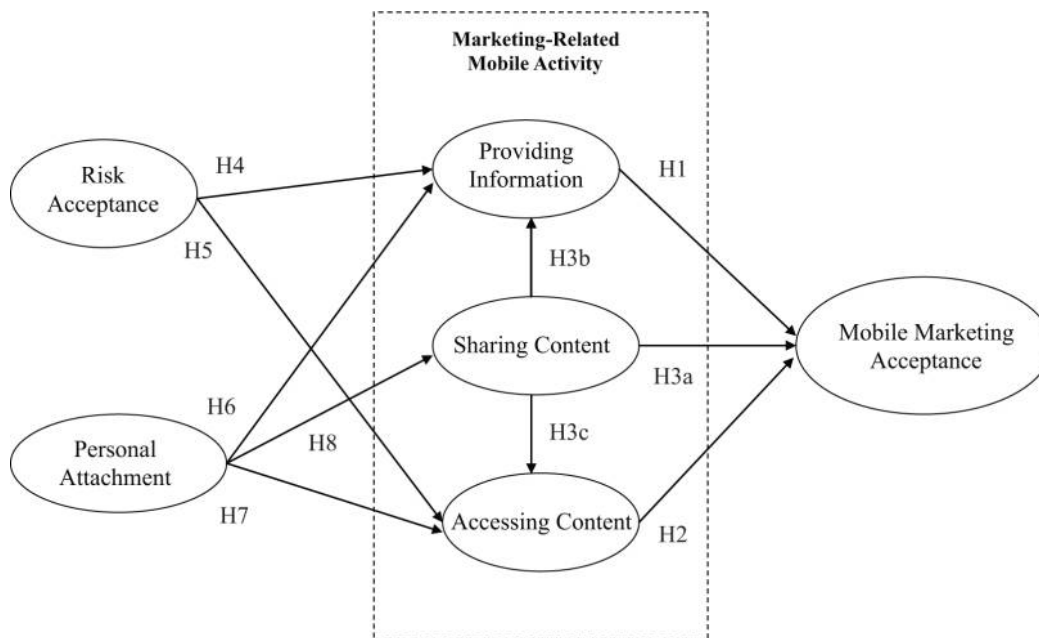
The growth in wireless and mobile communications worldwide has significantly changed the way individuals communicate, access, and share information. Two theoretical areas – the technology acceptance model (TAM) and uses and gratifications theory – have been widely applied in the marketing literature to explain individual behavior related to the adoption and usage of technology. We draw on these two perspectives to develop and estimate a conceptual model of consumer acceptance of mobile marketing.

The TAM is based on two elements that are predictive of intentions to technology adoption: perceived ease of use and perceived usefulness (Davis, 1989). It has typically focused on technology adoption and usage at the organizational and systems level and is based, in part, on normative and extrinsic motives. Although models related to TAM are typically applied to technology adoption within the organization (see Davis, 1989), it has been applied as well to more general contexts relating to consumers' adoption and usage of technology (e.g. Davis *et al.*, 1989; Venkatesh, 2000). This perspective is relevant to our research in that we incorporate marketing-related mobile activity (related to motives such as information provision, accessing mobile content, and sharing content within the mobile platform) as factors mediating the relationship between risk acceptance and personal attachment and acceptance of mobile marketing practices.

Uses and gratifications research, on the other hand, has focused more exclusively on individuals' use of technology for both rational or utilitarian reasons as well as hedonic purposes of fun seeking and enjoyment (Lin, 1996; Stafford *et al.*, 2004). In comparison to other perspectives related to technology adoption and use such as TAM, the uses and gratifications model is based directly on explaining factors related to consumer choice of new media (Stafford *et al.*, 2004). For example, related to individuals' Internet usage, Stafford *et al.* (2004) found that consumers' usage was defined by process, content, and social gratification factors. Further, in a study specific to the mobile setting, Nysveen *et al.* (2005) found that perceived expressiveness and perceived enjoyment directly influenced intentions to use mobile data services. Hence, the uses and gratifications perspective helps to explain the role of personal motives related to areas such as communications media, where personal motives for media consumption can range from utilitarian (functional) to non-utilitarian (e.g. enjoyment, entertainment, social status).

By examining the literature on technology acceptance and uses and gratifications theory, we extend these theoretical bases to the mobile setting and identify factors that are likely to affect consumer acceptance of mobile marketing practices. Accordingly, we propose the following parsimonious conceptual model shown in Figure 1 that incorporates the factors discussed below. This model is based on antecedent and mediating factors related to mobile marketing acceptance that have not yet been tested in cross-market settings.

Figure 1 Conceptual model of mobile marketing acceptance



Dependent variable

Mobile marketing acceptance

Mobile marketing acceptance, as measured by behavioral intent toward mobile marketing, is the key outcome variable in this study. Behavioral intent has been defined as “the strength of one’s intention to perform a specified behavior” (Fishbein and Ajzen, 1975, p. 288). Specific to our research, this construct relates to respondents’ receptiveness and intentions to engage in activities such as receiving product- or information-related marketing communications and promotional offers on their mobile phones. Several studies (e.g. Bauer *et al.*, 2005; Nysveen *et al.*, 2005) have examined behavioral intent to use mobile data services such as text messaging. Similar to these studies, we propose a model that incorporates behavioral intent related to consumer acceptance of mobile marketing practice.

However, our research differs in that the dependent measure employed in this study – consumer acceptance of mobile marketing – relates specifically to intentions to engage in mobile marketing activities (beyond mobile data services) that involve interactions between marketing entities (e.g. brands) and consumers. Also, our measure of acceptance of, and willingness to engage in, mobile marketing activity is associated with past research suggesting that explicit consumer permission to receive mobile advertisements (through opt-in approaches) can influence relatively high acceptance levels (Barwise and Strong, 2002). As such, we measure intentions such as willingness to receive marketing or promotional offers on one’s cell phone, willingness to receive offers from companies selling products related to a sporting event one is attending, and willingness to receive solicitations from companies to whom one has given permission.

Aside from certain regions such as Japan, South Korea, and parts of Europe, the concept of mobile marketing, by which firms and consumers interact via wireless, handheld devices such as mobile phones, is a relatively new one. We suggest that continued consumer acceptance of mobile marketing

practice in large and influential markets such as China will be driven by two antecedent factors, namely risk acceptance and personal attachment related to one’s mobile phone.

Mediating effects of marketing-related mobile activity

Mobile phones represent a medium that, up to now in many markets (such as the USA), has been used primarily for voice and data communications rather than for marketing activities. Given that mobile communications represents a relatively new marketing platform, we propose that marketing-related mobile activity such as accessing content, sharing content, and providing information acts as a mediator in explaining consumer acceptance of mobile marketing. Our mediators associated with marketing-related mobile activity are different from mobile marketing acceptance in that they pertain specifically to activities that might prime or condition consumers toward acceptance of mobile marketing.

Prior research in similar contexts has investigated the extent to which the Internet (e.g. Novak *et al.*, 2000; Silk *et al.*, 2001) and mobile devices (e.g. Carroll *et al.*, 2007; Peters *et al.*, 2007) were viewed as viable commercial and advertising mediums. Past research has shown that familiarity with a medium (e.g. the internet) as an information tool and communications medium correlates with the use of that medium for marketing purposes, such as online shopping. For example, Novak *et al.* (2000) found that consumers’ skill and sense of control related to internet use correlated highly with their task-oriented activities such as online shopping and accessing product information.

We also draw on findings from more recent research suggesting that acceptance of mobile marketing is, in part, influenced by consumers’ acceptance of the mobile medium itself (Carroll *et al.*, 2007; Peters *et al.*, 2007). Peters *et al.* (2007) found that mobile phone usage among college students was motivated by a need for diversion, and that this motivation was linked with positive views towards mobile advertising. Hence, this past research indicates that

consumers' use of a medium for one set of activities or purposes can prime them to accept this medium for a new set of activities. A similar finding was obtained by Laforet and Li (2005) in a study of Chinese consumer adoption of online and mobile banking where the authors noted a significant influence of previous experience with computers on consumers' use of online banking.

Findings from recent studies related to digital communications employing the TAM and uses and gratifications perspectives suggest that, from the point-of-view of the individual consumer, digital media are used for purposes of both entertainment, or play, and utility (e.g. Bruner and Kumar, 2005; Haghirian *et al.*, 2005; Nysveen *et al.*, 2005; Venkatesh, 2000). For instance, Bruner and Kumar (2005) apply TAM to consumers' use of mobile devices (e.g. cell phones) and suggest that enjoyment of mobile device usage is a stronger predictor of attitude toward usage than such traditional TAM constructs as perceived usefulness. Similarly, Nysveen *et al.* (2005) find that both perceived usefulness and perceived enjoyment are directly related to intention to use mobile data services. Further, Haghirian *et al.* (2005) find that both the entertainment and the information associated with advertising content are related to perceived advertising value in the mobile context, and Grant and O'Donohoe (2007) suggest entertainment, social stimulation, escapism, and purchase information and advice are motives for young consumers to engage in mobile marketing communication.

Consistent with the above research, we propose that the relationships between our antecedent factors – risk acceptance and personal attachment – and our dependent variable, consumer acceptance of mobile marketing, will be mediated by marketing-related mobile activities such as accessing and sharing content and providing information. We incorporate the following three marketing-related mobile activities as mediating factors influencing consumer acceptance of mobile marketing practices in a cross-market setting:

- (1) providing information;
- (2) accessing content; and
- (3) sharing content.

We also propose two additional hypotheses, namely that greater propensity to use mobile phones as a platform for sharing content will influence likelihood for providing information to firms for marketing-related purposes as well as for accessing mobile content.

- H1.* Greater extent of mobile activity related to providing information to firms for marketing-related purposes will lead to greater levels of mobile marketing acceptance.
- H2.* Greater extent of mobile activity related to accessing content will lead to greater levels of mobile marketing acceptance.
- H3a.* Greater extent of mobile activity related to sharing content with others will lead to greater levels of mobile marketing acceptance.
- H3b.* Greater extent of mobile activity related to sharing content with others will lead to greater mobile activity related to providing information to firms for marketing-related purposes.

- H3c.* Greater extent of mobile activity related to sharing content with others will lead to greater mobile activity related to accessing content.

Antecedent factors

We consider risk acceptance and personal attachment as antecedent factors in our conceptual model.

Risk acceptance

The construct risk acceptance refers to the likelihood for respondents to provide personal information to online entities such as web sites. In this study, we define risk acceptance as the propensity of individuals to provide personal information in order to enter into online marketing promotions to receive gifts, enter a contest or get future discounts. Research has shown that establishing trust between consumers and marketers and providing consumers some degree of control over the disclosure of their personal information in the online setting may reduce privacy concerns (Malhotra *et al.*, 2004; Milne *et al.*, 2004; Urban *et al.*, 2000). Research related to mobile privacy has also discussed spamming and privacy invasion as central issues related to consumers' willingness to receive mobile advertisements (e.g. Barnes and Scornavacca, 2004; Grant and O'Donohoe, 2007; Leppaniemi and Karjaluoto, 2005).

However, the popularity of social networking sites such as Facebook and the willingness of members to post intimate, personal information suggests a lack of privacy concern (perhaps due to lack of awareness of the consequences of posting personal information) and greater risk tolerance among young consumers (Gross and Acquisti, 2005). Risk acceptance is therefore an important construct to consider with respect to the youth consumer and mobile marketing, since this population is also active in online communications and perhaps more willing to take part in promotions or other mobile offers (Selian and Srivastava, 2004).

Despite industry and consumer issues regarding mobile privacy, there is little empirical research in the mobile platform that has examined constructs such as risk acceptance with respect to intentions to engage in mobile marketing practices. Because privacy issues in the online setting have been shown to influence attitudes toward, and intentions to use, web sites (Malhotra *et al.*, 2004), we propose that greater levels of risk acceptance will lead to greater mobile activity related to providing information to firms and to accessing content. We do not propose that risk acceptance (as defined in this study) will influence sharing content since that interaction is between peers. Hence, we consider the role of risk acceptance in our proposed model as shown below.

- H4.* Greater levels of risk acceptance will lead to greater mobile activity related to providing information to firms for marketing-related purposes.
- H5.* Greater levels of risk acceptance will lead to a greater mobile activity related to accessing content in the mobile setting.

Personal attachment

The construct personal attachment refers to the extent to which consumers seek to personalize their mobile phones with unique content, wallpapers, and ringtones as ways to present their phones as extensions of the self. Related to personal attachment and mobile devices, numerous studies have

examined the role of personal attachment and mobile phone use, including studies of teens in Norway (Skog, 2002), children and teenagers in Finland (Kasesniemi and Rautianinen, 2002), the use of mobile phones among Korean consumers (Kim, 2002), and youth consumers in the USA (Harris Interactive, 2007). The central theme in these studies is that the mobile phone represents more than just a communications device; it also is used to represent the self through personalized features. However, there is little or no research that has empirically examined the relationship between personal attachment and behavioral intent towards mobile marketing practice. One exception is the study by Peng and Spencer (2006) where the authors confirm the positive impact of phone personalization on favorable attitudes toward mobile advertising. Based on the concept established in the literature that mobile devices are an integral part of one's self-concept, we empirically examine the relationship between personal attachment and marketing-related mobile activity and propose the following hypotheses:

- H6. Greater levels of personal attachment will lead to greater mobile activity related to providing information to firms for marketing-related purposes.
- H7. Greater levels of personal attachment will lead to greater mobile activity related to sharing content with others in the mobile setting.
- H8. Greater levels of personal attachment will lead to greater mobile activity related to accessing content in the mobile setting.

Methodology

This study is based on data from written surveys administered in 2008 to both undergraduate and graduate students at a large university in Northern China. **The surveys were written and administered in Chinese.** The choice of a student sample for this study was based on widespread usage characteristics of mobile devices for communications and data services among the Chinese youth market. For young consumers, mobile phones represent not only a communication device, but also a way to express one's individuality through items such as customized faceplates, wallpapers, and ringtones. Further, the penetration of mobile phones within the Chinese youth markets is significant (Zhang and Mao, 2008).

Survey development

As we sought to test the conceptual model developed in a prior study (Sultan *et al.*, 2009) in a new setting (China), we drew our survey instruments from the same study (Sultan *et al.*, 2009). The survey contained several constructs related to mobile marketing acceptance, including perceived risk acceptance, defined as the propensity for individuals to provide personal information in order to enter into online marketing promotions; personal attachment (or the degree one's mobile phone represents a personal and customized device); marketing-related mobile activity (information provision, accessing content, and sharing content); and acceptance of mobile marketing practices. Prior to administering the survey, it was reviewed by three outside executives familiar with mobile marketing practice as well as a research assistant for clarity and applicability to the topic being investigated.

Overall, the survey consisted of 70 questions designed to gauge attitudes toward and acceptance of mobile communications and marketing practices, as well as classification questions related to gender, age and region. Each construct was represented by multiple scale items that were either adapted from existing scales (e.g. Bauer *et al.*, 2005; Pagani, 2004) for application to the mobile setting or developed for this study where existing scales did not exist. Scale items are shown in Table I. The initial English survey was first translated into Chinese by two researchers (an author with a research assistant) and was then back translated into English by a third researcher (another research assistant) to ensure accuracy of translation.

Data collection

A total of **250 responses** were obtained over a one-week period during the summer of 2008 through a **judgmental non-probability sampling** approach where students were asked to distribute surveys within established social networks. The respondent characteristics are as follows: 49.2 per cent were male and 50.82 per cent were female; respondents ranged in age from 18 to 34 years, although a majority – 66.42 per cent of respondents – were between 18–24 years old; 59.22 per cent were undergraduate students, while 40.82 per cent were graduate students.

Analysis

The focal dependent variable in our conceptual model is acceptance of mobile marketing among youth consumers. The independent variables are the five additional constructs related to the mobile acceptance factors identified in Figure 1. To validate the measures of our constructs, we conducted a series of confirmatory factor analyses (CFA) using LISREL 8.5 (Joreskog and Sorbom, 1999) to test the dimensionality, reliability, and convergent and discriminant validities of the measures (see Anderson and Gerbing, 1988). We conducted CFAs for individual constructs (i.e. one measurement model per construct) as well as all constructs in one overall measurement model. Table I shows the results of the overall measurement model containing factors for all constructs. The fit indices collectively show adequate fit of the measurement model with the data (Hu and Bentler, 1999).

All path coefficients from latent factors to their corresponding indicators were appropriately high (ranging from 0.66 to 0.87 for standardized coefficients) and significant. The composite reliability coefficients and Cronbach's alphas all exceeded the recommended cut-off value of 0.60 (Bagozzi and Yi, 1988), showing evidence of acceptable reliability among the remaining items for all the dimensions. The average variances explained for all constructs were higher than the cut-off level of 0.50, meeting this measure of convergent validity (Fornell and Larcker, 1981). Collectively, these indicators show adequate convergent validity for our measures in both samples (Anderson and Gerbing, 1988). We assessed the discriminant validity of the factors (see Anderson, 1987) by performing a series of two-factor CFA models for all possible pairs of factors. In each model, the Φ coefficient was constrained to unity and then freed and a chi-square difference test was then performed. Discriminant validity was obtained for all the construct factors using this test ($\Delta\chi^2_{[1]} > 3.84$ for all pair-wise comparisons).

Table I Confirmatory factor analysis

Constructs and items	α	ρ	AVE	Standardized loadings
Risk acceptance	0.87	0.87	0.70	
I would provide a web site with personal information (such as my e-mail address) to receive a small gift				0.78
I would provide a web site with personal information (such as my e-mail address) to enter in a contest				0.87
I would provide a web site with personal information (such as my e-mail address) to receive discounts on future purchases				0.85
Personal attachment	0.77	0.76	0.52	
I like to customize my cellphone with interesting screen graphics or wallpaper				0.77
The way my cellphone looks and is designed is important to me				0.72
I like to customize my cellphone with new ringtones				0.67
Providing information	0.84	0.86	0.6	
Provide your e-mail address to a web site using your cellphone				0.83
Register with a web site using your cellphone				0.81
Register for a contest or promotion using your cellphone				0.82
Accessing content	0.80	0.77	0.53	
Download content (wallpaper, ringtone, others) using your cellphone				0.76
Access fun and entertaining content such as ringtones or games using your cellphone				0.67
Pay for content such as games or ringtones for your cellphone				0.75
Sharing content	0.74	0.71	0.56	
Friends often send me cool downloads such as ringtones or screen graphics on my cellphone				0.75
I often send my friends new screen graphics or ringtones on their cellphones				0.74
Mobile marketing acceptance	0.80	0.78	0.54	
I would be willing to receive information on where to buy certain products or services on my cellphone.				0.80
I would be willing to receive offers on my cellphone from companies selling products related to an event I am attending (for instance, a sporting event)				0.73
Overall, I would be willing to receive solicitations from companies to whom I gave my permission				0.66

Notes: Measurement model fit indices: China model: $\chi^2 = 161.24$, $df = 104$, $p < 0.01$, NFI = 0.95, CFI = 0.95, IFI = 0.98, RMSEA = 0.05; this table reports the estimation results of the factor-level CFA which only contains the remaining items after item deletions; α = Cronbach's alpha; ρ = composite construct reliability; AVE = average variance extracted (Fornell and Larcker, 1981)

Results

We tested the conceptual structural equations model using LISREL 8.5 (Joreskog and Sorbom, 1999). The fit indices in both model tests show adequate fit between the conceptual model and the data (Hu and Bentler, 1999). For example, the Root Mean Square Error of Approximation (RMSEA) (0.05) was lower than the cut-off value of 0.06 for close fit (Hu and Bentler, 1999). Eight out of ten hypotheses received significant support in each country sample, while the remaining hypotheses were rejected. The results from this test are shown in Table II.

The accepted hypotheses were *H1*, *H2*, *H3b*, *H3c*, *H4*, *H5*, *H7*, and *H8*. There was no support for *H3a* and *H6*.

Discussion and implications

This study adds to the growing literature on Chinese youth consumers by examining their acceptance of mobile marketing (Li *et al.*, 2009; Wang, C., 2009). The study reveals several implications for theory and practice relating to the antecedents of mobile marketing acceptance among the youth consumer segment within China, a large and emerging market.

Theoretical implications

The findings from our research extend the current marketing communications and mobile marketing literature in two areas. First, the findings reported here illustrate the role of two antecedent factors – including personal attachment and risk acceptance – related to acceptance of mobile marketing practices in the Chinese market. Second, our proposed model emphasizes the role of marketing-related and value-based mobile activity in mediating the relationships between these antecedent factors and mobile marketing acceptance.

Antecedent factors related to mobile marketing acceptance

Our research indicates that risk acceptance and personal attachment influenced mobile activities such as providing information, sharing content, and accessing content, which in turn led to greater acceptance of mobile marketing practice. Greater degrees of risk acceptance significantly influenced the likelihood of Chinese youth consumers to engage in mobile activity related to providing information (*H4*) and accessing content (*H5*). Meantime, greater degrees of personal attachment influenced mobile activity related to accessing (*H7*) and sharing content (*H8*), yet not providing information (*H6*).

Taken together, our findings support past research by illustrating the importance of perceived risk and privacy

Table II Results of model tests using the structural equations modeling approach

Hypotheses	Parameter estimates	Results of hypotheses testing
H1: Providing information → Mobile marketing acceptance	0.39 ***	Supported
H2: Accessing content → Mobile marketing acceptance	0.41 ***	Supported
H3a: Sharing content → Mobile marketing acceptance	-0.21 *	Rejected
H3b: Sharing content → Providing information	0.36 ***	Supported
H3c: Sharing content → Accessing content	0.55 ***	Supported
H4: Risk acceptance → Providing information	0.44 ***	Supported
H5: Risk acceptance → Accessing content	0.28 ***	Supported
H6: Personal attachment → Providing information	-0.06	Rejected
H7: Personal attachment → Accessing content	0.45 ***	Supported
H8: Personal attachment → Sharing content	0.19 **	Supported
R ² for providing information	0.33	
R ² for accessing content	0.57	
R ² for sharing content	0.20	
R ² for mobile marketing acceptance	0.31	

Notes: *Significant at 0.05; **significant at 0.01; ***significant at 0.001; model fit indices: $\chi^2 = 213.26$, $df = 108$, $p < 0.001$, CFI = 0.96, IFI = 0.96, NFI = 0.93, RMSEA = 0.06

intrusion in the mobile context. Risk acceptance was operationalized as a willingness of the respondent to engage in mobile marketing in return for something of value (coupon, enter sweepstakes, access content). Accordingly, this finding reaffirms past research (e.g. Barwise and Strong, 2002; Bauer *et al.*, 2005; Harris Interactive, 2007) that has stressed the delivery of value in consumer acceptance of mobile advertising.

Our research also adds support to past studies (e.g. Harris Interactive, 2007; Peng and Spencer, 2006) illustrating the role of personal attachment (through unique and personalized phone content and features) as an antecedent factor indirectly influencing mobile marketing acceptance through the activity of accessing and sharing mobile content. This suggests that young individuals view their mobile phones as both a reflection of the self as well as a status-based accessory with which to convey personal identity, similar to the role of other fashion items. In turn, personal attachment may influence mobile activity in the form of accessing and sharing content. This finding is important to future theory development in that it further illustrates the role of social acceptance within certain consumer groups as an indicator of technology acceptance.

Mediating effects on mobile marketing acceptance

Our research also shows the mediating effects of mobile activity involving information provision, accessing content, and sharing content on mobile marketing acceptance. The likelihoods of respondents to provide information (H1) and access content (H2) were significant influencers of acceptance. This suggests that Chinese consumers' use of mobile phones for providing information and for accessing content may serve as a priming factor for future engagement in mobile marketing.

Researchers have argued that through globalism – the extent to which markets are alike with respect to cultural, social, and technology influences – the world is increasingly becoming a homocultural marketplace (Jenkins, 2006; Khanh and Hau, 2007). Our results lend credence to this argument. Specifically, we noted the same results on seven out of ten hypotheses (H1, H2, H3b, H4, H5, H6, H7, and H8) for China, the USA, and Pakistan (see Sultan *et al.*, 2009).

Furthermore, we obtained the same results for H3c between China and Pakistan (see Sultan *et al.*, 2009), and for H5 between China and the USA.

A surprising finding was that the likelihood of sharing content has a significant negative influence on mobile marketing acceptance (H3a), contrary to our expectation and differing from the results comparing consumer acceptance in the USA and Pakistan (see Sultan *et al.*, 2009), where this effect was not significant. This finding may be explained by the fact that youth consumers in China who are immersed in using the mobile phone as a tool of interpersonal communication with friends may have a particular tendency to keep their world free of outside commercial interferences. Meantime, the likelihood of sharing content did significantly influence the likelihood of providing information to marketing-related firms (H3b) and likelihood to access content (H3c), thereby exerting indirect positive effects on mobile marketing acceptance among Chinese youth. Jointly, these findings highlight the need for firms to respect the privacy of their users and only provide services highly valued by them on an opt-in basis. Future research might examine how cultural differences among countries, especially between emerging and developed markets, influence usage and acceptance of mobile marketing.

Managerial implications

It is important for managers to recognize the various drivers of, and obstacles to, the acceptance of mobile marketing practices among consumers across global markets. The findings from this study suggest several implications to managers involved in the development of mobile marketing strategy and programs within growing mobile markets such as China. These findings also suggest that managers will want to develop mobile strategies that stimulate viral mobile activity such as content sharing, which then could lead to greater propensity to engage in mobile marketing programs.

Drivers of, and obstacles to, acceptance of mobile marketing

We found several factors that directly and indirectly influenced mobile marketing acceptance, including likelihood of providing information, likelihood of accessing

content, likelihood of sharing content, level of risk acceptance, and level of personal attachment to one's mobile phone. For managers, this suggests that mobile programs targeting youth consumers in China, such as Coca-Cola's Bluetooth video commercials via Pioco in 2008 and China Mobile's launch of its Mobile Market app store in 2009, will need to:

- emphasize meaningful incentives and value propositions in order for consumers to provide information;
- make available compelling content that will stimulate viral activity; and
- recognize the trade-offs consumers may make in terms of risk tolerance and benefits offered.

Willingness on behalf of Chinese consumers to engage with firms in mobile marketing programs will most likely be fueled by economic incentives such as free text messaging services in return for permission to receive mobile advertisements and promotions and fixed-rate pricing plans, as well as personalized content that offers value and which matches personal profiles offered on an opt-in basis.

The finding that young Chinese consumers who are heavily engaged in sharing content may actually dislike commercial interferences in the mobile space should caution marketers about differences among youth consumers in China and suggest the need to tailor their programs to smaller consumer segments based on the extent of content sharing among friends. In the meantime, success with these consumers may still be possible if the mobile marketing programs are shared among consumers by their peers, rather than coming directly from a marketer.

However, these findings point to numerous obstacles that managers must consider related to the growth of mobile marketing practice among young consumers. In markets such as China there are significant public policy considerations, fueled by consumer concern, that have led to active industry self-regulation of mobile marketing practice and privacy policies. To develop strategies to get consumers to opt-in and participate in the commercial mobile space, managers will need to understand the degree to which privacy issues across various Chinese consumer segments (beyond the youth consumer) and markets may inhibit this participation.

Therefore, it will be important for practitioners to consider the trade-off between delivering customer value without seemingly capitalizing on, or abusing, consumer risk acceptance in the mobile marketing context. One approach to permission-based involvement in the mobile space discussed previously is personalization – that is, is to finely target individuals with value-based content, features, and applications that suit their needs. Another approach would again involve an incentive-based model in which consumers agree to accept advertising “pushed to them” in return for free access and mobile content. Managers will need to emphasize personalization and trust models or incentive-based models to foster greater participation in mobile marketing programs and promotions.

Growing numbers of people in emerging markets such as China (as well as India) have access to voice and data mobile communications. Even though spending power still may be limited with respect to services or retail goods in these markets, there is increased willingness on the part of consumers in these markets to engage and interact in the mobile space, particularly with respect to the rapid emergence

of 3G networks and the increasing economic availability of mobile phones.

Brands entering or competing in both emerging as well as established markets may seek to emphasize the mobile platform for advertising and promotional efforts in order to capitalize on favorable acceptance characteristics such as current mobile activity and the growing usage of mobile devices. Furthermore, the prominence of mobile activity – hedonic and utilitarian – as a factor influencing mobile marketing acceptance factors in this study points to the importance of delivering value and content that is acceptable and desirable (e.g. entertaining content or informative content such as location-based search tools) to consumers in the mobile setting.

Study limitations and future research

This was an exploratory study employing a non-probability sample of the youth segment in China. The choice of this sampling strategy may limit the generalizability of our findings: while the sampling technique helped to gather data from an important consumer segment within the mobile market (i.e. the youth market), the findings from this research are limited in that the data are taken from narrow sampling frames of primarily university students. Future research within a broader sampling frame should further examine differences related to age and gender as well as socio-economic and cultural factors. Additionally, our correlation-based structural equation tests of sequences among the antecedents, mediators, and outcome variable might not be final, and other causal sequences not tested in this study might in fact be plausible and worth investigating in future research. Despite these limitations, this was an initial attempt at a parsimonious, yet integrative model linking an array of antecedent factors to acceptance of mobile marketing practices within the China market.

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