Received 24 June 2008
Revised 6 January 2009
Accepted 13 May 2009

Factors affecting purchase intention on mobile shopping web sites

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Abstract

Purpose – The purpose of this paper is to explore a conceptual model for analyzing customers' perceptions of using mobile commerce services for online shopping. This paper provides insights into consumer behavior, and the results have important implications for designers, managers, marketers, and system providers of mobile shopping (m-shopping) web sites.

Design/methodology/approach – An empirical investigation was carried out to test the hypotheses. The samples include 369 professional participants. For testing the relationships of the model, structural equation modeling (SEM) is used.

Findings – The results demonstrate that anxiety, which is an affective barrier against using innovative systems, is a key negative predictor of a customer's intentions to use mobile phones. Also, the consumer's self-perception of mobile skillfulness significantly affects anxiety, enjoyment, and usefulness. Furthermore, enjoyment, usefulness, and compatibility have an impact on a customer's behavioral intentions.

Practical implications – The findings of this study help to understand what hinders or encourages the m-shopping intention of online customers.

Originality/value – The results not only help develop a sophisticated understanding of mobile commerce theories for researchers, but they also offer useful knowledge to those involved in promoting m-shopping to potential purchasers. The value of the paper is that the results could be applied to other portable information technology service adoptions, such as personal digital assistants (PDA), smart phones, advanced mobile phones, and portable global positioning systems (GPS).

Keywords Mobile communication systems, Internet shopping, Consumer behaviour

Paper type Research paper

1. Introduction

In recent years, the phenomenal growth in the use of the internet and in the number of mobile phone users has resulted in an unprecedented growth of mobile commerce (MC) for meeting people's needs in all areas of their lives. A forecast from the Market Intelligence Center (MIC) (2006) suggests that the number of mobile phone subscribers worldwide will increase from 2 billion in 2005 to 3.3 billion in 2010 – almost a 10.1 percent compound average annual growth rate.

This phenomenal growth is even more dramatic in Asia, including Taiwan. For instance, a report by Taiwan's National Communications Commission (NCC) stated that in 2007 Taiwan's mobile penetration rate (i.e. the number of mobile phone subscribers divided by the population) was 104.7 percent, and that the number of subscribers in Taiwan to third-generation (3G) mobile phones, which enable

Internet Research
Vol. 19 No. 4, 2009
pp. 442-458

1066-2243
DOI 10.1108/10662240910981399

broadband wireless data services, surpassed 5.9 million, a growth rate of 119.4 percent from 2006. A report from eMarketer states that the percentage of internet users who have wireless Internet grew from 16 percent in 2001 to 56.8 percent in 2007. In other words, the global wireless/mobile internet population is now larger than the population that uses fixed lines, such as desktop personal computers (PCs), to access the internet. The growth of this mobile population has great financial potential, especially for business-to-consumers (B2C) retailing markets. A survey of global MC by Jupiter Research projected 2009 revenues at US $88 billion.

As the popularity of this technology has grown, so have fancy varieties of MC services, which have made possible the use of advanced mobile phones for mobile shopping, mobile banking, booking, ticketing, making payments, and conducting other kinds of online banking transactions. Mobile shopping (m-shopping) allows customers to shop online at any time and in any location. However, very few consumers use their mobile phones for online shopping. In fact, potential customers seem to avoid using the existing systems.

Research into m-shopping services (MSS) on web site is still in its infancy, but what is needed is a much better understanding of the factors that influence the adoption of m-shopping. Although many MSS have been provided in different ways by online productions retailers, what appears to be missing "is a clear understanding of the motivations and circumstances from the perception of consumers themselves" (Sarker and Wells, 2003, p. 35). Researchers need to find out how customers' beliefs and attitudes affect their use of MSS. Through a proper understanding of customers' considerations and emotional feelings, managers can develop proper strategies for promoting and building specific MSS that consumers will want to use.

Recent statistics indicate that the failure rate of new shopping web sites is very high (Lin, 2007). Customers can easily switch from one mobile web site to another with just a few presses of their thumbs. And because MSS are still in their beginning stages, system providers have to invest a great deal of money to integrate different mobile Internet infrastructures as well as web-dedicated software and hardware. The new fashions and robust functions of computers are developing rapidly, with the result that greater capabilities and efficiencies are constantly being introduced into advanced mobile phones for MSS transactions. For example, a mobile web site can now supply customers with comparisons of thousands of products to help them find products at competitive prices. It can also support the whole flow of the shopping experience, including logging in, delivering e-catalogues, searching for products, comparing prices, ordering, paying, conducting after-services, and advertising. Thus, many shoppers face many new and complex features when they use mobile shops.

Meanwhile, the m-shopping environment faces three major challenges. First, the bandwidth of the mobile internet is narrower than that of fixed lines, and the new networks occasionally disconnect without any warning. Second, compared to the desktop PCs, mobile phones have limited input buttons, displays, computing abilities, battery power, and memory. In particular, mobile phones usually are set up to move automatically into a power-off or power-save status because of the limits of their batteries, which shorten the time allowed to look for data. With smaller screens for online transactions, MSS require more processing pages and steps than PCs do. Finally, the environments in which MSS are often used are not stable enough. Unlike transactions on desktops or laptops at home or in the workplace, a mobile-phone

transaction might occur in circumstances that have severe time constraints, such as while waiting for someone or while waiting for a traffic jam to clear.

Unfortunately, even skilled users may panic while operating these MSS functions because so many complicated application systems have been placed into such a tiny device, and these "new capabilities often negatively affect users' experience on other dimensions" (Jarvenpaa and Lang, 2005, p. 7). Several information technology (IT) researchers have explored technophobia, or even anxiety, as a significant negative inhibitor of IT acceptance (Compeau *et al.*, 1999; McFarland and Hamilton, 2006). Bandura's (1986) social cognitive theory (SCT) defines anxiety as the tendency of individual to be technophobic or apprehensive about innovative technology (Huang and Liaw, 2005). A user's anxiety functions as a kind of affective barrier and has a direct negative relationship with system usage. People fear the potential consequences of m-shopping, such as the loss of data or other problems. Understanding and eliminating the mobile innovations' affective barriers and their antecedents are major challenges for mobile phone companies.

2. Theoretical background and development

2.1 Factors that could lower affective barriers to innovation

2.1.1 Skills and skillfulness. Igbaria *et al.* (1996) examined how competent computer skills are likely to promote more favorable perceptions and beliefs about the use of microcomputers. Computer skills were defined as a combination of the users' experience with computers, the training they obtained, and overall knowledge or skills (Igbaria *et al.*, 1996). With more advanced skills in the use of mobile phones, individuals will be more likely to execute complicated mobile functions skillfully. On the basis of Bandura's (1986) social cognitive theory, many researchers have examined task-specific self-efficacy in order to further refine the concept of personal motivation. Task-specific self-efficacy is defined as the perception of one's ability to perform a specific task within the domain of general skills. Agarwal *et al.* (2000) refined the concept of software self-efficacy by dividing it into more specific Windows self-efficacy and Lotus 123 self-efficacy, citing either one as a key antecedent associated with technology usage. Staples *et al.*'s (1999) refined model found that specific remote-work self-efficacy had a significant impact on job productivity. Hsu and Chiu's (2004) extended theory of planned behavior (TPB) model studied the use of e-services for filing income taxes on the worldwide web and found that web-specific self-efficacy has a positive effect on system usage. Investigating self-efficacy from a more refined and specific viewpoint is becoming an emerging research area. However, prior studies have focused only on the influence of one's ability to complete different tasks, without considering the user's level of performance in completing that specific work.

The ability to perform specific tasks should be considered in the MSS context. Compared with traditional computer systems, mobile transactions cannot be completed successfully if the customer cannot perform skillfully under the time constraints of its power/battery supplement and system limitations. Skill at m-shopping, as a kind of task-specific self-efficacy, might also be applied to other portable information technology service adoptions, such as personal digital assistants (PDAs), smart phones, advanced mobile phones, and portable global positioning systems (GPS). The more people there are who can perform these specific tasks well in a short time, the more these technologies and services will be accepted. Personal

performance ability should be investigated as a key factor in lowering the affective barrier and obtaining the benefits of MSS. Customers may avoid using MSS because their skills at using mobile devices are inadequate, even if they understand and want a certain outcome. They may doubt their own ability to successfully execute the transaction and therefore doubt the usability of the system. A person's belief in his/her ability to bring about a desired outcome may provide an anchor for assessing the usability of an unfamiliar technology (Venkatesh and Davis, 1996). Several prior studies have provided evidence that perceived individual ability can negatively arouse anxiety in the IT context (Compeau *et al.*, 1999; Fagan *et al.*, 2003). Thus, skillfulness is worth examining closely for understanding the current underutilization of MSS and as a factor for predicting whether or not a mobile technology will be adopted.

2.2 Possible factors affecting customers' acceptance of m-shopping

2.2.1 Toward the accessibility of the mobile internet: ease of access. Sivunen and Valo (2006) pointed out that people's acceptance of different communication technologies depends on the available tools and their dispersion in the marketplace. The basic tools of MSS are handheld mobile gear and a reliable wireless communication system. Accessibility of communication refers to people's ease of access to a particular medium (Sivunen and Valo, 2006). Without an accessible MSS network system, mobile commerce will not be realized. Recently, several studies have discussed how wireless network accessibility has become a major challenge for mobile services. Virtanen *et al.* (2007) investigated the use of short messaging services (SMS) in terms of how a response reminder relies on a publicly accessible database through a mobile network system. Islam and Fayad (2003) pointed out that heterogeneous wireless networks (such as WCDMA or 802.11x) are a potential nightmare because a large number of network access technologies will be available for mobile phone users. Network heterogeneity probably increases how much customer effort is involved in choosing or switching networks while accessing the mobile internet. In addition, online MSS transactions are often delayed because so much effort is caught up in accessing that mobile internet. M-shopping's low level of accessibility presents a barrier to promoting MSS. A good mobile internet environment should have two important characteristics: system existence and system reliability. First, the customers need to know that at least one mobile internet system exists and is ready for them to access anytime and anywhere; they should not have to spend a lot of time or effort searching for a mobile internet system. Second, the communication quality of the mobile internet system should be reliable. Conditions such as insufficient bandwidth, violent high variations of bandwidth, and unexpected disconnections should not be permissible. A reliable system should provide customers with a link to the network without their having to frequently reconnect or move their physical positions in order to improve the quality of communication. Communication technologies that are easier to access will be less threatening to the consumer. An individual's judgment of perceived cognitive effort (ease of access) may serve as a key antecedent of a behavioral intention.

2.2.2 The individual's extrinsic motivation, intrinsic motivation, and compatibility. Using a mobile internet to access shopping information out of personal interest can be described in many ways. It can be depicted as useful, exciting, fun, entertaining, and even as a "flow" experience. Davis *et al.* (1992) found that both extrinsic and intrinsic factors affect the motivation to use information technology systems. The technology

acceptance model (TAM) (Davis, 1989), adapted from the generic theory of reasoned action (TRA) (Ajzen and Fishbein, 1980), has been used as the theoretical basis in many empirical studies for predicting consumers' acceptance of information technology (Igbaria *et al.*, 1997; Venkatesh and Davis, 1996). Davis (1989) posited that the TAM is a cost-benefit paradigm based on a person's cognitive assessment of the required effort and the subsequent outcome of a certain action. In this study, usefulness is defined the degree to which a person believes that using MSS would enhance his/her online shopping performance. This model predicts that the individual will use a system if he/she perceives that the usefulness benefits are greater than the effort required to use the system. Thus, customers will access some mobile shops just for "fun," such as when they surf for their favorite product or service web sites according to their personal hobbies or interests. Enjoyment, an intrinsic factor, also has been found to have a positive impact on the intention to use the Internet for m-shopping. For a large number of mobile phone subscribers, mobile handsets are compatible with their values, lifestyle, and needs. The mobile phone's mediated communication and processing style seems to fit many people's current habits and practices. Compatibility is widely considered to have a positive influence on use intention. Therefore, we have introduced these two factors – enjoyment (Davis *et al.*, 1992) and compatibility (Roger, 1995) – into the model in order to enhance our understanding of an individual's behavior. Figure 1 depicts our research model, which is based on a revised TAM, expanded to include mobile skillfulness, anxiety, enjoyment, and compatibility constructs, which are in keeping with TAM's original parsimonious properties.

3. Research model and hypotheses

3.1 Anxiety

In this study, anxiety refers to negative emotions in cognitive states; these emotions are evoked in actual or imaginary interactions with m-shopping system. As Igbaria and Iivari (1995, p. 593) have noted, "individuals who experience high levels of anxiety are likely to behave more rigidly than individuals whose level of anxiety is relatively low".

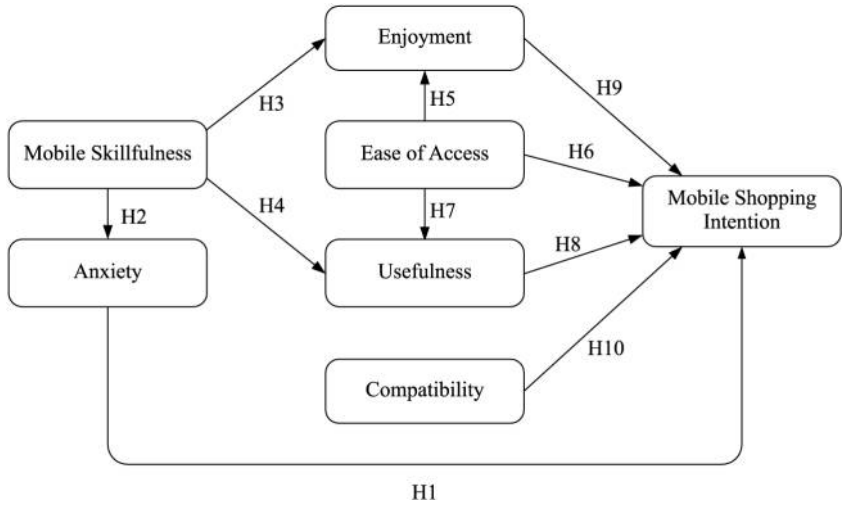


Figure 1.
Research model

In general, people are expected to avoid behaviors that invoke anxious feelings (Compeau and Higgins, 1995), especially when they face the sometimes problematic environment of m-shopping. On the other hand, individuals who feel comfortable with using a mobile phone are more likely to aim toward the desired consequence. An individual's apprehension, or even fear, will decrease the possibility of using MSS, whether the person is physically using the services or just imagining the negative emotion. For example, when the customers are in payment processes, they worry about pressing the wrong buttons on the complicated mobile device, thus losing money. The negative emotion may come from their imaginations or physical experiences. A number of previous studies found that anxiety had a significantly negative influence on information system adoption (Compeau *et al.*, 1999; McFarland and Hamilton, 2006). Investigating the role that negative emotional responses play in whether or not to adopt innovative technology is an important area of concern. The following hypothesis is proposed:

H1. Anxiety will negatively affect customer's intention to use MSS on m-shopping web site.

3.2 Mobile skillfulness

In this study, mobile skillfulness refers to the individual's assessment of his/her ability to perform a specific task well while using a mobile phone. Several studies have found that people feel anxiety in attempting to perform particular behaviors that they do not perform skillfully; conversely, one's emotional arousal anxiety has been found to have a negative effect on one's perceived capability (Compeau *et al.*, 1999; Fagan *et al.*, 2003). Several researches examined that the greater the user's capability belief will lead to the greater the user's intrinsic motivation (Compeau and Higgins, 1995; Deng *et al.*, 2004). Bandura (1977, p. 193) also pointed out that "individuals can believe that a particular course of action will produce certain outcomes, but if individuals entertain serious doubts about whether they can perform the necessary activities, such information [about outcomes] does not influence their behavior". It is necessary to understand the impact of one's perceived level of skillfulness on the expectations of the usefulness of MSS. The relationship between a person's specific self-efficacy and a system's usefulness has been supported in several previous studies (Huang and Liaw, 2005; Staples *et al.*, 1999). However, very few researchers have investigated the link between one's performance ability and usefulness. Thus, the following hypotheses are proposed:

H2. Mobile skillfulness will negatively affect anxiety of using MSS on m-shopping web site.

H3. Mobile skillfulness will positively affect enjoyment of using MSS on m-shopping web site.

H4. Mobile skillfulness will positively affect usefulness of using MSS on m-shopping web site.

3.3 Ease of access

In this study, ease of access refers the degree to which a customer believes that accessing the internet via a mobile phone will be free of effort. In computer-related

research, many studies have investigated ease of use but not ease of access. For example, several studies examined that user's ease of use perception influences significantly user's intrinsic motivation (enjoyment or playfulness) (Hsu and Lu, 2007; Moon and Kim, 2001). MSS that is easier to access the mobile internet will be less threatening to the customer. Therefore, ease of access is expected to have positive impact on customer's perception of enjoyment in mobile shopping context. Ease of use has been shown to play an important role in determining the intention to use (Mao *et al.*, 2005; Ong *et al.*, 2004; Pijpers and van Montfort, 2005). Davis (1989) identified the freedom from effort in using a system as an important predictor for its adoption and subsequent usefulness. Much research has confirmed that the construct of freedom from effort has a strong effect on usefulness (Igbaria *et al.*, 1997; Luarn and Lin, 2005; McFarland and Hamilton, 2006). Very little research has looked at the effect of the ease with which an individual obtains a connection to a mobile internet. This research focuses on examining the plausibility of a relationship between ease of access and the intention to use. The customer's perception of the amount of effort needed to access the Internet will improve his/her performance in m-shopping. Thus, the following hypotheses are proposed:

H5. Ease of access will positively affect enjoyment of using MSS on m-shopping web site.

H6. Ease of access will positively affect customer's intention to use MSS on m-shopping web site.

H7. Ease of access will positively affect usefulness of using MSS on m-shopping web site.

3.4 Usefulness

Usefulness is the individual's perception of the act of performing a behavior to gain specific rewards. Besides the output rewards or level of a behavior's performance, people tend to be fulfilled by the behavior itself under particular situations. The ability to have immediate access to information about products or services anywhere, anytime, may be attractive to customers. The choice of mobile internet access also makes online shopping more effective. Additionally, the TAM suggests that individuals accept information technology if they believe in its positive performance. Davis (1989, p. 320) asserted that "people tend to use or not use an application to the extent they believe it will help them perform their job better". Based on previous research (Cheong and Park, 2005; Davis *et al.*, 1992; Mao *et al.*, 2005; Ong *et al.*, 2004; Pijpers and van Montfort, 2005), the following hypothesis is proposed:

H8. Usefulness will positively affect customer's intention to use MSS on m-shopping web site.

3.5 Enjoyment

Enjoyment is a fundamental dimension of online shopping. Advanced mobile phones provide a wide range of online display media, such as product descriptions, pictures, background music, videos, commercial flash animations, and marketing games. Customers can have fun searching for products and services while interacting with media provided by the mobile internet. Davis *et al.* (1992) found both extrinsic and

intrinsic factors affect consumers' motivations to use information technology systems. Intrinsic motivation can be viewed as connected to playfulness and the reward of the action itself. For example, Venkatesh's (1999) game-based training study found that high-level intrinsic motivations led to a sustained behavioral intention to use information software. Chu and Lu (2007) suggested that perceived playfulness served as an anchor motivation in customers' perceptions of purchasing online music. In this study, enjoyment refers to the customers' direct experience of immediate pleasure and joy from using the MSS (Davis *et al.*, 1992). Thong *et al.* (2006) found a significant effect of perceived post-adoption enjoyment on the continued adoption of mobile internet services. Hsu and Lu (2007) suggested that enjoyment positively affects the loyalty of online game customers. Few researchers have connected intrinsic motivation (in terms of perceptions of pleasure and satisfaction) with the act of shopping online using a mobile phone, but it is clear that examining how enjoyment affects adoption intention in this context is a valuable line of inquiry. Thus, the following hypothesis is proposed:

H9. Enjoyment will positively affect customer's intention to use MSS on m-shopping web site.

3.6 Compatibility

Recently, mobile communication has become pervasive and has reached almost every domain of modern people's activities, including work, education, social relationships, and even entertainment. The diffusion of mobile technology will continue to construct the experiences and values of people's lives. Compatibility, one determinant of Rogers's diffusion of innovation (DOI) theory, has been extensively quoted in studies that examine what facilitates the diffusion of innovative systems (Niina *et al.*, 2008; Chen *et al.* 2002). Compatibility refers to the degree to which an innovation is perceived to be consistent with the values, past experiences, and needs of potential adopters (Roger, 1995). Mobile technology is already deeply integrated into many people's lives. Some people might feel severely isolated and even panicky, for example, if they lose a mobile phone whose handset contains the phone numbers of their social or business contacts. A high degree of consistency between one's values and one's usage experience with mobile technology will lead to the adoption of other mobile services. One prior empirical study (Niina *et al.*, 2008) suggested that the compatibility of a mobile ticketing service with consumer behavior is a major determinant of adoption. Chen *et al.* (2002) suggested that compatibility positively affects one's attitude toward using a virtual store. And Lin (2007) found that compatibility has a positive effect on the diffusion of online games. Thus, the following is proposed:

H10. Compatibility will positively affect customer's intention to use MSS on m-shopping web site.

4. Methodology

4.1 Measures

In order to guarantee the validity of our construct, we selected the items to be measured on the basis of prior studies. Items for measuring anxiety were adapted from Compeau *et al.* (1999) and Thatcher and Perrewe (2002). The scale items for mobile skillfulness were adapted from Compeau and Higgins (1995), Huang and Liaw (2005), and Mao *et al.* (2005). Items for measuring usefulness, ease of access, and behavioral intention were

adapted from studies by Davis (1989) and others (Mao *et al.*, 2005; Ong *et al.*, 2004; Venkatesh and Davis, 1996). The measures for enjoyment were based on Davis *et al.* (1992). Items for measuring compatibility were adapted from Taylor and Todd (1995) and Karahanna *et al.* (1999). All measures used a five-point Likert scales, with anchors ranging from strongly disagree (1) to strongly agree (5). The items used in this study are listed in the Appendix.

4.2 Subjects

Selected users of MSS and ten IT experts took the questionnaire's pilot test so that we could measure the instrument's wording, comprehensibility, logical consistencies, and overall structure. We then dispersed the questionnaire as a web-based survey, which was posted on the internet through mobile-phone and mobile-commerce chat room web sites, electronic bulletin board systems, and e-mail systems, including the three top portals in Taiwan: Yahoo!, Yam, and Chunghwa Telecom. Although the data came from the internet, the sample presented a representative range of Taiwan's population. Besides college students, the respondents came from a wide range of professional or managerial sectors, including engineering, research and development, marketing, sales, accounting, finance, and services. A total of 382 responses from Taiwan were gathered, and 369 valid samples were obtained by eliminating those that contained conflicting, incomplete, or double answers. The sample included 240 (65 percent) males and 129 (35 percent) females. The ages ranged from 16 to 55; the average age was 31. A total of 48 percent had completed one college or university degree; a further 9 percent had completed postgraduate degrees. In addition, more than 23 percent of the respondents had used mobile commerce services.

5. Results and discussion

5.1 Measurement model

Our confirmatory factor analysis (CFA) used LISREL 8.3 for testing the measurement model. Several model-fit indices were used to assess the measurement model: χ^2/df, GFI, AGFI, NFI, NNFI, CFI, RMR and SRMR. As shown in Table I, all the model-fit indices exceeded the recommended values from previous studies, thus exhibiting an adequate fit to the collected data.

Reliability and convergent validity of the factors were estimated by Cronbach's α and average variance extracted (AVE) (see Table II). All of Cronbach's α coefficients were above 0.80. The AVE were all well above the recommended value level of 0.50. Furthermore, convergent validity was also demonstrated by factor loading of the

Fit indices	Measurement model	Recommended value
χ^2/df	1.83	$\leqq 3.00$
Goodness of fit index (GFI)	0.94	$\geqq 0.90$
Adjusted goodness of fit index (AGFI)	0.91	$\geqq 0.80$
Normed fit index (NFI)	0.97	$\geqq 0.90$
Non-normed fit index (NNFI)	0.98	$\geqq 0.90$
Comparative fit index (CFI)	0.98	$\geqq 0.90$
Root mean square residual (RMR)	0.020	$\leqq 0.10$
Standard root mean square residual (SRMR)	0.028	$\leqq 0.10$

Table I.
Fit indices for measurement model

Items	Cronbach's alpha	Average variance extracted (AVE)	Factor loading
Mobile skillfulness	0.92	0.79	
MS1			0.88
MS2			0.87
MS3			0.91
Anxiety	0.95	0.88	
ANX1			0.94
ANX2			0.99
ANX3			0.88
Enjoyment	0.95	0.86	
ENJ1			0.96
ENJ2			0.96
ENJ3			0.86
Usefulness	0.91	0.78	
USE1			0.86
USE2			0.92
USE3			0.87
Ease of access	0.94	0.84	
EOA1			0.92
EOA2			0.94
EOA3			0.89
Compatibility	0.89	0.80	
COM1			0.88
COM2			0.91
Mobile shopping intention	0.89	0.81	
INT1			0.87
INT2			0.93

Table II.
Reliability, average variance extracted and factor loading of items

measurement items (>0.50). Almost all of the factor loadings were above 0.80. This suggested adequate reliability and convergent validity of the measurement. For satisfactory discriminant validity, the AVE from the construct should be greater than the variance shared between the construct and other constructs in the model. Table III shows the correlation matrix, with correlations among constructs and the square root of AVE on the diagonal. In summary, the measurement model demonstrated adequate reliability, convergent validity, and discriminant validity.

Construct	1	2	3	4	5	6	7
1. Mobile skillfulness	0.89						
2. Anxiety	−0.44	0.94					
3. Enjoyment	0.51	−0.23	0.93				
4. Usefulness	0.45	−0.20	0.30	0.88			
5. Ease of access	0.52	−0.23	0.53	0.42	0.92		
6. Compatibility	0.49	−0.22	0.59	0.28	0.51	0.90	
7. Mobile shopping intention	0.48	−0.34	0.68	0.43	0.43	0.54	0.90

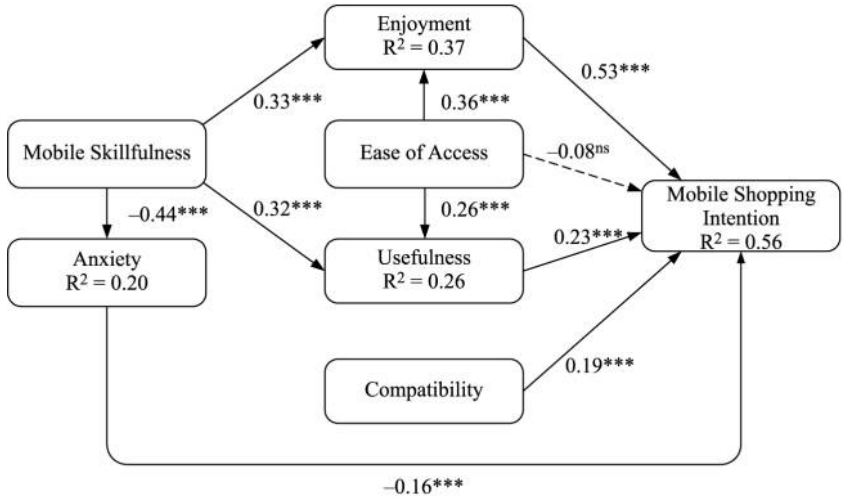
Table III.
Discriminant validity and correlations of constructs

5.2 Structural model

The model-fit indices for the structural model provided the evidence of a good model fit (χ^2/df = 3.29, GFI = 0.88, AGFI = 0.84, NFI = 0.93, NNFI = 0.94, CFI = 0.88, RMR = 0.078). The path coefficients from the SEM analysis are shown in Figure 2. With the exception of *H6*, all hypotheses were supported. Anxiety had a negative effect on behavioral intention (*H1*). Mobile skillfulness exhibited a significant negative influence on anxiety (*H2*) and had a significant positive effect both on enjoyment (*H3*) and usefulness (*H4*). As for *H5*, which asserted that ease of access would have a positive effect on enjoyment (*H5*). We found no significant relationship between ease of access and intention to engage in m-shopping (*H6*). With respect to *H7*, ease of access had a significant positive effect on usefulness; as expected, usefulness had significant effect on people's intention (*H8*). *H9* and *H10* were also supported; enjoyment and compatibility exerted significant positive influences on behavioral intentions. Altogether, these six determinants accounted for 56 percent of the variance in behavioral intentions, with enjoyment ($\beta = 0.53$) contributing more to intention than any other construct. The *R*-square in previous studies of Compeau *et al.* (1999), Mao *et al.* (2005), and Hsu and Chiu (2004) was 34, 47, and 50 percent respectively; in this study, the *R*-square was 56 percent. Compared with prior studies of the TAM or self-efficacy theories, the findings of this revised model have a greater ability to predict and explain the behavioral intention to use a specific technology system.

6. Conclusion and implication

The purpose of our study was to evaluate mobile online services from the perspective of affective states. Studies using the technology acceptance model (TAM) have generally ignored negative emotions, beliefs in level of ability, and intrinsic motivations, but our study has successfully integrated such factors as mobile skillfulness, anxiety about mobile innovations, enjoyment, and revised TAM factors (usefulness and ease of access) and applied them to the context of online m-shopping.



Notes: n.s., not significant. *$P < 0.05$; **$P < 0.01$; ***$P < 0.001$

Figure 2.
Path analysis result based on all valid samples ($n = 369$)

The results not only solidify and verify the role of psychological as well as functional beliefs in human behavior, but they also provide insights into the opportunities and risks that are part of the dramatically changing environment of online mobile services.

Our study provides six valuable insights into consumer behavior, and our results have important implications for designers, managers, marketers, and system providers of MSS.

First, our study shows that enjoyment strongly affects the intention to engage in m-shopping. The study's result is interesting that in customer's interaction with the MSS, individual involved in the activity for intrinsic motivation (i.e. enjoyment, $\beta = 0.53$) rather than extrinsic motivation (i.e. usefulness, $\beta = 0.23$) to adapt the m-shopping. Moon and Kim (2001) argued that individuals are in the playfulness state, they will find the interaction intrinsically interesting: they are involved in the activity for pleasure and enjoyment rather than for extrinsic rewards. The finding of this study confirmed this opinion. Because mobile phones often accompany their owners day and night, they are more readily available for use than traditional personal computers are. Users often enjoy a deep connection with their mobile phones. M-shopping web site can be seen as an interactive medium that may become one of the customer's favorite sites. This finding suggests that practitioners should strive to stimulate customers' intrinsic motivations, especially their enjoyment experiences. In addition, entertainment elements should be integrated into the m-shopping flow.

Second, consistent with prior research, anxiety was proven to be a significant negative antecedent of behavioral intention to shop. Individuals who feel less anxiety about the system also feel more comfortable using it, so they are more likely to expect to accept the system. Managers should seek to control the complexity of MSS in order to reduce the affective barrier created by customers' worries about operation errors. Designers should pay attention to the system features that could cause anxiety and seek to minimize them.

Third, mobile skillfulness plays an important role. It is a key predictor of three constructs: anxiety, enjoyment, and usefulness, which have a direct and significant influence on behavioral intentions to use mobile services. The important effect of mobile skillfulness on MSS adoption shows up in a variety of ways. Mobile skillfulness indirectly promotes m-shopping, and it also influences the intention to use through the individuals' perceptions of usefulness and enjoyment. Furthermore, mobile skillfulness plays a crucial role in reducing anxiety about mobile technology and enhances the motivation to use MSS. One implication of this finding is that retailers should offer potential users training or tutorial programs in using mobile handsets. This approach would also improve their performance skills by demonstrating how to purchase products or services. These educational and training programs, designed to help individuals perform advanced mobile phone skills effectively, will both enhance their mobile skillfulness and reduce affective barriers to using MSS.

Fourth, this study successfully expands the ability to generalize all of its constructs to the mobile commerce context. This area of research is different from that of prior studies that analyzed traditional information systems. Overall, the predictive power of this revised TAM is robust. Moreover, in keeping with prior research, this study confirmed that usefulness exerted a significant positive influence on behavioral intention to m-shopping.

Fifth, our finding is consistent with the results of recent studies in IT-related systems. We found that ease of access was an important and direct determinant of an individual's assessment of enjoyment and usefulness. This finding suggests that system providers should pay attention to reducing the effort involved in connecting with the mobile internet. For example, providers should not only develop large network technologies, but they should also eliminate the effort involved in switching between systems and coping with variations in communication quality while traveling between metropolises and suburbs. Even though the direct effect of ease of access on the intention to engage in online m-shopping was not significant, the new construct of ease of access may be valuable in further investigations into adoptions of wireless services. In keeping with some prior research, usefulness exerted a significant positive influence on the behavioral intention to use.

Finally, compatibility exerted a significant influence on adoption intention. This result shows that a customer's intention can be obtained by enhancing compatibility with the customer's values, lifestyle, and needs. A lifestyle that embraces the use of mobile phones, receiving or processing information anytime and anywhere, will influence a person's intention to engage in m-shopping. Managers can attract potential customers who may have previous experience with e-commerce services. It is not surprising that the early adopters of advanced mobile phones are likely to be well educated and have a higher socioeconomic status. Innovative commercial media and applications attract their attention. Managers should introduce m-shopping in the context of familiar e-commerce services that customers have already experienced.

This study provides customers' use of the mobile phone as a shopping medium with several managerial implications. Managers and service providers should recognize that Internet accessibility (ease of access), purpose-oriented functionality (usefulness) and procedure-oriented functionality (enjoyment) are three the most infrastructural elements of the perception level that influence customers' intentions to use MSS. If managers try their best to eliminate the burden of access to the mobile internet and make it as easy as access to computer internet, it could enhance customers' perception of helpfulness to accomplish a transaction on the mobile network. Managers should focus not only the useful outcomes of using MSS, but they would also note that there is full of fun in the whole shopping process and in this way customers can form the habit of using MSS step by step. For example, instead of using text-based web site instructions and guidance, using massive multimedia or animation user interface would stimulate customers' purchasing intention.

Compare this research conducted in Taiwan with several prior mobile technology studies examined in other countries. Some results are similar. For example, Mao *et al.* (2005) examined individual intention to use advanced mobile phone services by TAM (usefulness and ease of use) with TPB (price and accessibility) model and found the different implications between US and Turkish samples. Both their research (US and Turkish samples) and our study (Taiwan's samples) showed that usefulness significantly affects intention to use but lack support that accessibility (ease of access) has significant effect on intention (accessibility is a little similar to ease of access in our study in Taiwan). Besides, Cheong and Park (2005) tested Korea's samples through use of extended TAM, including playfulness, system quality, internet experience and price as variables. The results of the Korea study are consistent with our research in Taiwan; namely, both usefulness and playfulness (enjoyment in our study) strongly affect

behavioral intention. Although some evidences prove that different countries' samples might cause the same research results in a hypotheses. Further investigations and more evidences acquired by cross-country and cross-culture in mobile technology adoption are necessary.

Two limitations of this study are that respondents were self-selected and came from only one geographical area. Besides undergraduates, the samples we gathered expand to a wide range of professional or managerial persons, including engineering, research and development, marketing, sales, accounting, finance, and services. This sample may be more or less representative for the whole population. Further research is recommended to get beyond the limit of the sample based on random sampling procedures. It is not appropriate to infer the same conclusions which resulted from the samples of the study to other IT fields or geographic area.

We suggest four possible directions for further research. First, additional social factors can be added to this model for explaining the adoption of human communication tools. Second, because the results and findings of this study of the acceptance of online m-shopping, a relatively new research field, are derived from just a single study of a specific technology and only from among respondents in Taiwan, generalizing and confirming this model's applicability in different research fields and among other groups would further validate both the findings and research model. Third, these results were obtained in only one time period, so longitudinal research would help develop a better grasp of the interrelationships among variables over time. Finally, consider the payment system over the mobile web would be a great challenge to customers no matter in security concern or technical support. A great deal of mobile phone subscribers might be transformed into mobile shopping customers that should be come true under the sound and safe mobile transaction environment. So payment issue needs further investigating to improve customers' usability and satisfaction of the mobile shopping. Future work in these four areas would not only help develop a more sophisticated understanding of mobile commerce theories for researchers, but it would also offer useful knowledge to those involved in promoting the making of purchases online to potential mobile customers.

References

Agarwal, R., Sambamurthy, V. and Stair, R.M. (2000), "The evolving relationship between general and specific computer self-efficacy: an empirical assessment", *Information Systems Research*, Vol. 11 No. 4, pp. 418-30.

Ajzen, I. and Fishbein, M. (1980), *Understanding Attitudes and Predicting Social Behavior*, Prentice-Hall, Englewood Cliffs, NJ.

Bandura, A. (1977), "Self-efficacy: toward a unifying theory of behavioral change", *Psychological Review*, Vol. 84 No. 2, pp. 191-225.

Bandura, A. (1986), *Social Foundations of Thought and Action*, Prentice-Hall, Englewood Cliffs, NJ.

Chen, L., Gillenson, M.L. and Sherrell, D.L. (2002), "Enticing online consumers: an extended technology acceptance perspective", *Information Systems Research*, Vol. 39 No. 8, pp. 705-19.

Cheong, J.H. and Park, M.C. (2005), "Mobile internet acceptance in Korea", *Internet Research*, Vol. 15 No. 2, pp. 125-40.

Chu, C.W. and Lu, H.P. (2007), "Factors influencing online music purchase intention in Taiwan: an empirical study based on the value-intention framework", *Internet Research*, Vol. 17 No. 2, pp. 139-55.

Compeau, D.R. and Higgins, C.A. (1995), "Computer self-efficacy: development of a measure and initial test", *MIS Quarterly*, Vol. 19 No. 2, pp. 189-211.

Compeau, D.R., Higgins, C.A. and Huff, S. (1999), "Social cognitive theory and individual reactions to computing technology: a longitudinal study", *MIS Quarterly*, Vol. 23 No. 2, pp. 145-58.

Davis, F.D. (1989), "Perceived usefulness, perceived ease of use, and user acceptance of information technology", *MIS Quarterly*, Vol. 13 No. 3, pp. 319-40.

Davis, F.D., Bagozzi, R.P. and Warshaw, P.R. (1992), "Extrinsic and intrinsic motivation to use computers in the workplace", *Journal of Applied Social Psychology*, Vol. 22 No. 14, pp. 1111-32.

Deng, X., Doll, W. and Truong, D. (2004), "Computer self-efficacy in an ongoing use context", *Behaviour and Information Technology*, Vol. 23 No. 6, pp. 395-412.

Fagan, M.H., Neill, S. and Wooldridge, B.R. (2003), "An empirical investigation into the relationship between computer self-efficacy, anxiety, experience, support and usage", *Journal of Computer Information Systems*, Vol. 44 No. 2, pp. 95-104.

Hsu, C.L. and Lu, H.P. (2007), "Consumer behavior in online game communities: a motivational factor perspective", *Computers in Human Behavior*, Vol. 23 No. 3, pp. 1642-59.

Hsu, M.H. and Chiu, C.M. (2004), "Internet self-efficacy and electronic service acceptance", *Decision Support Systems*, Vol. 38 No. 3, pp. 369-81.

Huang, H.M. and Liaw, S.S. (2005), "Exploring users' attitudes and intentions toward the web as a survey tool", *Computers in Human Behavior*, Vol. 21 No. 5, pp. 729-43.

Igbaria, M. and Iivari, J. (1995), "The effects of self-efficacy on computer usage", *Omega, International Journal of Management Science*, Vol. 23 No. 6, pp. 587-605.

Igbaria, M., Parasuraman, S. and Baroudi, J.J. (1996), "A motivational model of microcomputer usage", *Journal of Management Information Systems*, Vol. 13 No. 1, pp. 127-43.

Igbaria, M., Zinatelli, N., Cragg, P. and Cavaye, A.L.M. (1997), "Personal computing acceptance factors in small firms: a structural equation model", *MIS Quarterly*, Vol. 21 No. 3, pp. 279-305.

Islam, N. and Fayad, M. (2003), "Toward ubiquitous acceptance of ubiquitous computing", *Communication of the ACM*, Vol. 46 No. 2, pp. 89-93.

Jarvenpaa, S.L. and Lang, K.R. (2005), "Managing the paradoxes of mobile technology", *Information Systems Management*, Vol. 22 No. 4, pp. 7-23.

Karahanna, E., Straub, D.W. and Chervany, N.L. (1999), "Information technology adoption across time: a cross-sectional comparison of pre-adoption and post-adoption beliefs", *MIS Quarterly*, Vol. 23 No. 2, pp. 183-213.

Lin, J.C.C. (2007), "Online stickiness: its antecedents and effect on purchasing intention", *Behaviour and Information Technology*, Vol. 26 No. 6, pp. 507-16.

Luarn, P. and Lin, H.H. (2005), "Toward an understanding of the behavioral intention to use mobile banking", *Computers in Human Behavior*, Vol. 21 No. 6, pp. 873-91.

McFarland, D.J. and Hamilton, D. (2006), "Adding contextual specificity to the technology acceptance model", *Computers in Human Behavior*, Vol. 22 No. 3, pp. 427-47.

Mao, E., Srite, M., Thatcher, J.B. and Yaprak, O. (2005), "A research model for mobile phone service behaviors: empirical validation in the US and Turkey", *Journal of Global Information Technology Management*, Vol. 8 No. 4, pp. 7-28.

Moon, J.W. and Kim, Y.G. (2001), "Extending the TAM for a world-wide-web context", *Information and Management*, Vol. 38, pp. 217-30.

Niina, M., Matti, R., Virpi, T. and Anssi, Ö. (2008), "An empirical investigation of mobile ticketing service adoption in public transportation", *Personal and Ubiquitous Computing*, Vol. 12 No. 1, pp. 57-65.

Ong, C.S., Lai, J.Y. and Wang, Y.S. (2004), "Factors affecting engineers' acceptance of asynchronous e-learning systems in high-tech companies", *Information and Management*, Vol. 41 No. 6, pp. 795-804.

Pijpers, G.G.M. and van Montfort, K. (2005), "An investigation of factors that influence senior executives to accept innovations in information technology", *International Journal of Management*, Vol. 22 No. 4, pp. 542-55.

Roger, E.M. (1995), *Diffusion of Innovations*, 4th ed., The Free Press, New York, NY.

Sarker, S. and Wells, J.D. (2003), "Understanding mobile handheld device use and adoption", *Communications of the ACM*, Vol. 46 No. 12, pp. 35-40.

Sivunen, A. and Valo, N. (2006), "Team leader's technology choice in virtual teams", *IEEE Transactions on Professional Communication*, Vol. 49 No. 1, pp. 57-68.

Staples, D.S., Hulland, J.S. and Higgins, C.A. (1999), "A self-efficacy theory explanation for the management of remote workers in virtual organizations", *Organization Science*, Vol. 10 No. 6, pp. 758-76.

Taylor, S. and Todd, P.A. (1995), "Understanding information technology usage: a test of competing models", *Information Systems Research*, Vol. 6 No. 2, pp. 144-76.

Thatcher, J.B. and Perrewe, P.L. (2002), "An empirical examination of individual traits as antecedents to computer anxiety and computer self-efficacy", *MIS Quarterly*, Vol. 26 No. 4, pp. 381-96.

Thong, J.Y.L., Hong, S.J. and Tam, K.Y. (2006), "The effects of post-adoption beliefs on the expectation-confirmation model for information continuance", *International Journal of Human-Computer Studies*, Vol. 64 No. 9, pp. 799-810.

Venkatesh, V. (1999), "Creation of favorable user perceptions: exploring the role of intrinsic motivation", *MIS Quarterly*, Vol. 23 No. 2, pp. 239-60.

Venkatesh, V. and Davis, F.D. (1996), "A model of the antecedents of perceived ease of use: development and test", *Decision Sciences*, Vol. 27 No. 3, pp. 451-81.

Virtanen, V., Sirkiä, T. and Jokiranta, V. (2007), "Reducing nonresponse by SMS reminders in mail surveys", *Social Science Computer Review*, Vol. 25 No. 3, pp. 384-95.

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Appendix

Anxiety

- ANX1 I feel apprehensive about using MSS.
- ANX2 I hesitate to use MSS for fear of making mistakes.
- ANX3 Using MSS is somewhat intimidating to me.

Mobile skillfulness

- MS1 I feel confident using an advanced mobile phone to complete an online transaction efficiently.
- MS2 I would be able to use an advanced mobile phone to complete an online transaction in a short time if I had some hints.
- MS3 I would be able to use an advanced mobile phone to complete an online transaction in a short time if I had used a similar system before.

Ease of access

- EOA1 I find mobile internet would be easy to access.
- EOA2 I would find it easy to connect and get mobile internet what I want it to do.
- EOA3 Accessing to mobile internet would not require a lot of my mental effort.

Usefulness

- USE1 Using MSS would enable me to accomplish my online transactions more quickly.
- USE2 I would find MSS useful for online transactions.
- USE3 Using MSS would enhance my effectiveness in completing online transactions.

Enjoyment

- ENJ1 The process of surfing m-shopping web site is enjoyable.
- ENJ2 While accessing m-shopping web site, I have experienced pleasure.
- ENJ3 Overall, I believe that visiting m-shopping web site is fun.

Compatibility

- COM1 Using MSS would be compatible with all aspects of my life and work.
- COM2 I think that using MSS would fit well with the way I like to live and work.

Mobile shopping intention

- INT1 Assuming that I had access to m-shopping web site, I intend to make purchasing transactions on it.
- INT2 Given that I had access to m-shopping web site, I predict that I would make purchasing transactions on it.

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1. Garry Wei-Han Tan, Voon-Hsien Lee, Jun-Jie Hew, Keng-Boon Ooi, Lai-Wan Wong. 2018. The interactive mobile social media advertising: An imminent approach to advertise tourism products and services?. *Telematics and Informatics* **35**:8, 2270-2288. [Crossref]
2. AdekunleSimon Ayo, Simon Ayo Adekunle, EjechiJones O., Jones O. Ejechi. 2018. Modelling repurchase intention among smartphones users in Nigeria. *Journal of Modelling in Management* **13**:4, 794-814. [Abstract] [Full Text] [PDF]
3. Michael Groß. 2018. Mobile shopping loyalty: The salient moderating role of normative and functional compatibility beliefs. *Technology in Society* **55**, 146-159. [Crossref]
4. RamadanReem, Reem Ramadan, AitaJawdat, Jawdat Aita. 2018. A model of mobile payment usage among Arab consumers. *International Journal of Bank Marketing* **36**:7, 1213-1234. [Abstract] [Full Text] [PDF]
5. Sunyoung Han, Yong Jeong Yi. 2018. How does the smartphone usage of college students affect academic performance?. *Journal of Computer Assisted Learning* **61**. . [Crossref]
6. GhazaliEzlika M., Ezlika M. Ghazali, MutumDilip S., Dilip S. Mutum, ChongJiu Hui, Jiu Hui Chong, NguyenBang, Bang Nguyen. 2018. Do consumers want mobile commerce? A closer look at M-shopping and technology adoption in Malaysia. *Asia Pacific Journal of Marketing and Logistics* **30**:4, 1064-1086. [Abstract] [Full Text] [PDF]
7. ChhonkerMayanka Singh, Mayanka Singh Chhonker, VermaDeepak, Deepak Verma, KarArpan Kumar, Arpan Kumar Kar, GroverPurva, Purva Grover. 2018. m-commerce technology adoption. *The Bottom Line* **31**:3/4, 208-233. [Abstract] [Full Text] [PDF]
8. Prasanta Kr. Chopdar, Nikolaos Korfiatis, V.J. Sivakumar, Miltiades D. Lytras. 2018. Mobile shopping apps adoption and perceived risks: A cross-country perspective utilizing the Unified Theory of Acceptance and Use of Technology. *Computers in Human Behavior* **86**, 109-128. [Crossref]
9. Zhaojun Yang, Xiangchun Kong, Jun Sun, Yali Zhang. 2018. Switching to Green Lifestyles: Behavior Change of Ant Forest Users. *International Journal of Environmental Research and Public Health* **15**:9, 1819. [Crossref]
10. Garry Wei-Han Tan, Keng-Boon Ooi. 2018. Gender and age: Do they really moderate mobile tourism shopping behavior?. *Telematics and Informatics* **35**:6, 1617-1642. [Crossref]
11. Kum Fai Yuen, Xueqin Wang, Li Ting Wendy Ng, Yiik Diew Wong. 2018. An investigation of customers' intention to use self-collection services for last-mile delivery. *Transport Policy* **66**, 1-8. [Crossref]
12. Jana Prodanova, Sonia San-Martín, Nadia Jimenez. 2018. Are you technologically prepared for mobile shopping?. *The Service Industries Journal* **6**, 1-23. [Crossref]
13. Yu-Yin Wang, Yi-Shun Wang, Hsin-Hui Lin, Tung-Han Tsai. 2018. Developing and validating a model for assessing paid mobile learning app success. *Interactive Learning Environments* **3**, 1-20. [Crossref]
14. Yung-Shen Yen. 2018. Route factors influencing trust and attitude toward TV shopping. *The Service Industries Journal* **38**:7-8, 402-430. [Crossref]
15. M. Sridhar, Ajay Mehta. 2018. The Moderating and Mediating Role of Corporate Reputation in the Link Between Service Innovation and Cross-Buying Intention. *Corporate Reputation Review* **21**:2, 50-70. [Crossref]
16. JungTimothy Hyungsoo, Timothy Hyungsoo Jung, LeeHyunae, Hyunae Lee, ChungNamho, Namho Chung, tom DieckM. Claudia, M. Claudia tom Dieck. 2018. Cross-cultural differences in adopting mobile

augmented reality at cultural heritage tourism sites. *International Journal of Contemporary Hospitality Management* **30**:3, 1621-1645. [Abstract] [Full Text] [PDF]

17. Mohammad SalamehAnas Abdelsatar, Anas Abdelsatar Mohammad Salameh, AhmadHartini, Hartini Ahmad, ZulhumadiFaisal, Faisal Zulhumadi, AbubakarFaruq Muhammad, Faruq Muhammad Abubakar. 2018. Relationships between system quality, service quality, and customer satisfaction. *Journal of Systems and Information Technology* **20**:1, 73-102. [Abstract] [Full Text] [PDF]
18. Yi-Mu Chen, Tsuen-Ho Hsu, Yu-Jou Lu. 2018. Impact of flow on mobile shopping intention. *Journal of Retailing and Consumer Services* **41**, 281-287. [Crossref]
19. VafaeiZadehAli, Ali Vafaei-Zadeh, RamayahThurasamy, Thurasamy Ramayah, WongWai Peng, Wai Peng Wong, Md HanifahHaniruzila, Haniruzila Md Hanifah. 2018. Modelling internet security software usage among undergraduate students. *VINE Journal of Information and Knowledge Management Systems* **48**:1, 2-20. [Abstract] [Full Text] [PDF]
20. WangYu-Yin, Yu-Yin Wang, LinHsin-Hui, Hsin-Hui Lin, WangYi-Shun, Yi-Shun Wang, ShihYing-Wei, Ying-Wei Shih, WangSsu-Ting, Ssu-Ting Wang. 2018. What drives users' intentions to purchase a GPS Navigation app. *Internet Research* **28**:1, 251-274. [Abstract] [Full Text] [PDF]
21. MirkovskiKristijian, Kristijian Mirkovski, JiaYanli, Yanli Jia, LiuLibo, Libo Liu, ChenKun, Kun Chen. 2018. Understanding microblogging continuance intention. *Information Technology & People* **31**:1, 215-238. [Abstract] [Full Text] [PDF]
22. Jie Zhao, Suping Fang, Peiquan Jin. 2018. Modeling and Quantifying User Acceptance of Personalized Business Modes Based on TAM, Trust and Attitude. *Sustainability* **10**:2, 356. [Crossref]
23. MadanKhushbu, Khushbu Madan, YadavRajan, Rajan Yadav. 2018. Understanding and predicting antecedents of mobile shopping adoption. *Asia Pacific Journal of Marketing and Logistics* **30**:1, 139-162. [Abstract] [Full Text] [PDF]
24. Tae Hyun Baek, Chan Yun Yoo. 2018. Branded App Usability: Conceptualization, Measurement, and Prediction of Consumer Loyalty. *Journal of Advertising* **47**:1, 70-82. [Crossref]
25. Michael Groß. 2018. Heterogeneity in consumers' mobile shopping acceptance: A finite mixture partial least squares modelling approach for exploring and characterising different shopper segments. *Journal of Retailing and Consumer Services* **40**, 8-18. [Crossref]
26. Hannah R. Marriott, Michael D. Williams. Enhancing the Customer Experience: Understanding UK Consumers' M-Shopping Adoption Intention 141-150. [Crossref]
27. Anil Gupta, Nikita Dogra. 2017. TOURIST ADOPTION OF MAPPING APPS: A UTAUT2 PERSPECTIVE OF SMART TRAVELLERS. *Tourism and hospitality management* **23**:2, 145-161. [Crossref]
28. Jun-Jie Hew, Lai-Ying Leong, Garry Wei-Han Tan, Keng-Boon Ooi, Voon-Hsien Lee. 2017. The age of mobile social commerce: An Artificial Neural Network analysis on its resistances. *Technological Forecasting and Social Change* . [Crossref]
29. MahapatraSabita, Sabita Mahapatra. 2017. Mobile shopping among young consumers: an empirical study in an emerging market. *International Journal of Retail & Distribution Management* **45**:9, 930-949. [Abstract] [Full Text] [PDF]
30. Yu-Shan Lin. 2017. Causal complexity for passengers' intentions to re-ride. *Quality & Quantity* **51**:5, 1925-1937. [Crossref]

31. RoySubhadip, Subhadip Roy, MoorthiY.L.R., Y.L.R. Moorthi. 2017. Technology readiness, perceived ubiquity and M-commerce adoption. *Journal of Research in Interactive Marketing* **11**:3, 268-295. [Abstract] [Full Text] [PDF]
32. Yen-Chun Chen, Hsun-Chi Chu, Jyun-Yi Wu, Nomin Tsembel, Yung-Cheng Shen. 2017. A case study on attitude towards online auction use applying quantile regression analysis. *Total Quality Management & Business Excellence* **8**, 1-21. [Crossref]
33. Hsin Hsin Chang, Kit Hong Wong, Shi Yu Li. 2017. Applying push-pull-mooring to investigate channel switching behaviors: M-shopping self-efficacy and switching costs as moderators. *Electronic Commerce Research and Applications* **24**, 50-67. [Crossref]
34. MarriottHannah R., Hannah R. Marriott, WilliamsMichael D., Michael D. Williams, DwivediYogesh K., Yogesh K. Dwivedi. 2017. What do we know about consumer m-shopping behaviour?. *International Journal of Retail & Distribution Management* **45**:6, 568-586. [Abstract] [Full Text] [PDF]
35. AssimakopoulosCostas, Costas Assimakopoulos, AntoniadisIoannis, Ioannis Antoniadis, KayasOliver G., Oliver G. Kayas, DvizacDragana, Dragana Dvizac. 2017. Effective social media marketing strategy: Facebook as an opportunity for universities. *International Journal of Retail & Distribution Management* **45**:5, 532-549. [Abstract] [Full Text] [PDF]
36. PintoGiuseppe Leonardo, Giuseppe Leonardo Pinto, Dell'EraClaudio, Claudio Dell'Era, VergantiRoberto, Roberto Verganti, BelliniEmilio, Emilio Bellini. 2017. Innovation strategies in retail services: solutions, experiences and meanings. *European Journal of Innovation Management* **20**:2, 190-209. [Abstract] [Full Text] [PDF]
37. Anil Gupta, Neelika Arora. 2017. Understanding determinants and barriers of mobile shopping adoption using behavioral reasoning theory. *Journal of Retailing and Consumer Services* **36**, 1-7. [Crossref]
38. Shuchih Ernest Chang, Wei-Cheng Shen, Chun-Hsiu Yeh. 2017. A comparative study of user intention to recommend content on mobile social networks. *Multimedia Tools and Applications* **76**:4, 5399-5417. [Crossref]
39. Marco Hubert, Markus Blut, Christian Brock, Christof Backhaus, Tim Eberhardt. 2017. Acceptance of Smartphone-Based Mobile Shopping: Mobile Benefits, Customer Characteristics, Perceived Risks, and the Impact of Application Context. *Psychology & Marketing* **34**:2, 175-194. [Crossref]
40. ParkSangwon, Sangwon Park, HuangYiqun, Yiqun Huang. 2017. Motivators and inhibitors in booking a hotel via smartphones. *International Journal of Contemporary Hospitality Management* **29**:1, 161-178. [Abstract] [Full Text] [PDF]
41. Steve Dix, Ian Phau, Kyle Jamieson, Anwar Sadat Shimul. 2017. Investigating the Drivers of Consumer Acceptance and Response of SMS Advertising. *Journal of Promotion Management* **23**:1, 62-79. [Crossref]
42. William C. McDowell, Rachel C. Wilson, Charles Owen Kile. 2016. An examination of retail website design and conversion rate. *Journal of Business Research* **69**:11, 4837-4842. [Crossref]
43. Michael Groß. 2016. Impediments to mobile shopping continued usage intention: A trust-risk-relationship. *Journal of Retailing and Consumer Services* **33**, 109-119. [Crossref]
44. Xifei Feng, Shenglan Fu, Jin Qin. 2016. Determinants of consumers' attitudes toward mobile advertising: The mediating roles of intrinsic and extrinsic motivations. *Computers in Human Behavior* **63**, 334-341. [Crossref]
45. FaisalMohd. Nishat, Mohd. Nishat Faisal, KhanHabibullah, Habibullah Khan. 2016. A structural analysis of the enablers of u-commerce proliferation in a developing economy. *International Journal of Productivity and Performance Management* **65**:7, 925-946. [Abstract] [Full Text] [PDF]

46. San-MartínSonia, Sonia San-Martín, ProdanovaJana, Jana Prodanova, López CatalánBlanca, Blanca López Catalán. 2016. What makes services customers say "buy it with a mobile phone"?. *Journal of Services Marketing* **30**:6, 601-614. [Abstract] [Full Text] [PDF]
47. Brian P. Cozzarin, Stanko Dimitrov. 2016. Mobile commerce and device specific perceived risk. *Electronic Commerce Research* **16**:3, 335-354. [Crossref]
48. Mohammad Abdullah Mahfuz, Liza Khanam, Wang Hu. The influence of culture on m-banking technology adoption: An integrative approaches of UTAUT2 and ITM 824-835. [Crossref]
49. Su Jin Yang, Yun Jung Lee. 2016. Determinants of Actual Purchase on m-commerce Sites vs. Determinants of Satisfaction with m-commerce Sites. *The Journal of the Korea Contents Association* **16**:6, 236-247. [Crossref]
50. Imtiaz Arif, Wajeeha Aslam, Muhammad Ali. 2016. Students' dependence on smartphones and its effect on purchasing behavior. *South Asian Journal of Global Business Research* **5**:2, 285-302. [Abstract] [Full Text] [PDF]
51. Dongsheng Liu, Chengqin Tong, Yanni Liu, Yufei Yuan, Chunhua Ju. 2016. Examining the adoption and continuous usage of context-aware services. *Information Development* **32**:3, 608-621. [Crossref]
52. Mi Jin Noh, Kyung Tag Lee. 2016. An analysis of the relationship between quality and user acceptance in smartphone apps. *Information Systems and e-Business Management* **14**:2, 273-291. [Crossref]
53. Yunusa Olufadi. 2016. Social networking time use scale (SONTUS): A new instrument for measuring the time spent on the social networking sites. *Telematics and Informatics* **33**:2, 452-471. [Crossref]
54. Sahar Afshan, Arshian Sharif. 2016. Acceptance of mobile banking framework in Pakistan. *Telematics and Informatics* **33**:2, 370-387. [Crossref]
55. Anil Bilgihan, Jay Kandampully, Tingting (Christina) Zhang. 2016. Towards a unified customer experience in online shopping environments. *International Journal of Quality and Service Sciences* **8**:1, 102-119. [Abstract] [Full Text] [PDF]
56. Francesca De Canio, Davide Pellegrini, Maria Elena Aramendia-Muneta. 2016. The smartphoners: consumer segmentation by smartphone usage. *MERCATI E COMPETITIVITÀ* :1, 123-144. [Crossref]
57. Abhay Kumar Bhadani, Ravi Shankar, D. Vijay Rao. 2016. Modeling the barriers of service adoption in rural Indian telecom using integrated ISM-ANP. *Journal of Modelling in Management* **11**:1, 2-25. [Abstract] [Full Text] [PDF]
58. Hsin-Hui Lin, Shinjeng Lin, Ching-Hsuan Yeh, Yi-Shun Wang. 2016. Measuring mobile learning readiness: scale development and validation. *Internet Research* **26**:1, 265-287. [Abstract] [Full Text] [PDF]
59. Shuiqing Yang. 2016. Role of transfer-based and performance-based cues on initial trust in mobile shopping services: a cross-environment perspective. *Information Systems and e-Business Management* **14**:1, 47-70. [Crossref]
60. Joel Jarvinen, Roope Ohtonen, Heikki Karjaluoto. Consumer Acceptance and Use of Instagram 2227-2236. [Crossref]
61. Boris Ovčjak, Marjan Heričko, Gregor Polančič. 2016. How Do Emotions Impact Mobile Services Acceptance? A Systematic Literature Review. *Mobile Information Systems* **2016**, 1-18. [Crossref]
62. Tao Zhou. 2016. Understanding users' switching from online stores to mobile stores. *Information Development* **32**:1, 60-69. [Crossref]
63. Changsu Kim, Wen Li, Dan J. Kim. 2015. An Empirical Analysis of Factors Influencing M-Shopping Use. *International Journal of Human-Computer Interaction* **31**:12, 974-994. [Crossref]

64. Boris Ovčjak, Marjan Heričko, Gregor Polančič. 2015. Factors impacting the acceptance of mobile data services – A systematic literature review. *Computers in Human Behavior* **53**, 24-47. [Crossref]
65. Choy-Har Wong, Garry Wei-Han Tan, Boon-In Tan, Keng-Boon Ooi. 2015. Mobile advertising: The changing landscape of the advertising industry. *Telematics and Informatics* **32**:4, 720-734. [Crossref]
66. Sanghoon Lee, Eunil Park, Sang Kwon, Angel del Pobil. 2015. Antecedents of Behavioral Intention to Use Mobile Telecommunication Services: Effects of Corporate Social Responsibility and Technology Acceptance. *Sustainability* **7**:8, 11345-11359. [Crossref]
67. Anna Corinna Cagliano, Alberto De Marco, Carlo Rafele, Andrea Bragagnini, Luca Gobbato. 2015. Analysing the diffusion of a mobile service supporting the e-grocery supply chain. *Business Process Management Journal* **21**:4, 928-963. [Abstract] [Full Text] [PDF]
68. Soo Yeong Ewe, Sheau Fen Yap, Christina Kwai Choi Lee. 2015. Network externalities and the perception of innovation characteristics: mobile banking. *Marketing Intelligence & Planning* **33**:4, 592-611. [Abstract] [Full Text] [PDF]
69. Michael Groß. 2015. Exploring the acceptance of technology for mobile shopping: an empirical investigation among Smartphone users. *The International Review of Retail, Distribution and Consumer Research* **25**:3, 215-235. [Crossref]
70. Patrick Hille, Gianfranco Walsh, Mark Cleveland. 2015. Consumer Fear of Online Identity Theft: Scale Development and Validation. *Journal of Interactive Marketing* **30**, 1-19. [Crossref]
71. Tao Zhou. 2015. Understanding user adoption of location-based services from a dual perspective of enablers and inhibitors. *Information Systems Frontiers* **17**:2, 413-422. [Crossref]
72. Michael Groß. 2015. Mobile shopping: a classification framework and literature review. *International Journal of Retail & Distribution Management* **43**:3, 221-241. [Abstract] [Full Text] [PDF]
73. Habibullah Khan, Faisal Talib, Mohd. Nishat Faisal. 2015. An analysis of the barriers to the proliferation of M-commerce in Qatar. *Journal of Systems and Information Technology* **17**:1, 54-81. [Abstract] [Full Text] [PDF]
74. Shiu-Wan HUNG, Min-Jhih Cheng, Shiu-Chun Hsieh. 2015. Consumers' satisfaction with online group buying – an incentive strategy. *International Journal of Retail & Distribution Management* **43**:2, 167-182. [Abstract] [Full Text] [PDF]
75. Wu-Chung Wu, Edward C. S. Ku, HsinJou Liao. 2015. Intimate knowledge initiators. *Internet Research* **25**:1, 67-84. [Abstract] [Full Text] [PDF]
76. Kuan-Yu Lin, Hsi-Peng Lu. 2015. Predicting mobile social network acceptance based on mobile value and social influence. *Internet Research* **25**:1, 107-130. [Abstract] [Full Text] [PDF]
77. Joseph Budu, Richard Boateng. Dominant issues and conceptual approaches in mobile business research from 2005 to 2013 21-42. [Crossref]
78. Yi-Fen Chen. 2014. See you on Facebook: exploring influences on Facebook continuous usage. *Behaviour & Information Technology* **33**:11, 1208-1218. [Crossref]
79. Ki Joon Kim. 2014. Can smartphones be specialists? Effects of specialization in mobile advertising. *Telematics and Informatics* **31**:4, 640-647. [Crossref]
80. Roger Ström, Martin Vendel, John Bredican. 2014. Mobile marketing: A literature review on its value for consumers and retailers. *Journal of Retailing and Consumer Services* **21**:6, 1001-1012. [Crossref]
81. Stefanie Sohn. 2014. Warum Smartphone-Nutzer nicht mobil einkaufen. *Marketing Review St. Gallen* **31**:5, 32-41. [Crossref]

82. Choy-Har Wong, Garry Wei-Han Tan, Siew-Phaik Loke, Keng-Boon Ooi. 2014. Mobile TV: a new form of entertainment?. *Industrial Management & Data Systems* **114**:7, 1050-1067. [Abstract] [Full Text] [PDF]
83. Sharma Gajendra, Lijuan Wang. 2014. Ethical perspectives on e-commerce: an empirical investigation. *Internet Research* **24**:4, 414-435. [Abstract] [Full Text] [PDF]
84. Ju-Young M. Kang, Kim K.P. Johnson, Juanjuan Wu. 2014. Consumer style inventory and intent to social shop online for apparel using social networking sites. *Journal of Fashion Marketing and Management: An International Journal* **18**:3, 301-320. [Abstract] [Full Text] [PDF]
85. Matthew J. Haught, Ran Wei, Yang Xuerui, Jin Zhang. 2014. Understanding the Psychology of Mobile Phone Use and Mobile Shopping of the 1990s Cohort in China. *International Journal of Online Marketing* **4**:3, 68-84. [Crossref]
86. Lingling Gao, Xuesong Bai. 2014. A unified perspective on the factors influencing consumer acceptance of internet of things technology. *Asia Pacific Journal of Marketing and Logistics* **26**:2, 211-231. [Abstract] [Full Text] [PDF]
87. Mustika Purwanegara, Atik Apriningsih, Febri Andika. 2014. Snapshot on Indonesia Regulation in Mobile Internet Banking Users Attitudes. *Procedia - Social and Behavioral Sciences* **115**, 147-155. [Crossref]
88. Christopher G. Reddick. 2014. Citizens and Mobile Government Adoption. *International Journal of Civic Engagement and Social Change* **1**:1, 13-26. [Crossref]
89. Alastair Holmes, Angela Byrne, Jennifer Rowley. 2013. Mobile shopping behaviour: insights into attitudes, shopping process involvement and location. *International Journal of Retail & Distribution Management* **42**:1, 25-39. [Abstract] [Full Text] [PDF]
90. John P Wentzel, Krishna Sundar Diatha, VSS Yadavalli. 2013. An application of the extended Technology Acceptance Model in understanding technology-enabled financial service adoption in South Africa. *Development Southern Africa* **30**:4-05, 659-673. [Crossref]
91. Preety Awasthi, Purnima S. Sangle. 2013. The importance of value and context for mobile CRM services in banking. *Business Process Management Journal* **19**:6, 864-891. [Abstract] [Full Text] [PDF]
92. Yung-Shen Yen. The relationship among social influence, perceived value, and usage intention in social networking sites 699-702. [Crossref]
93. Sonia San-Martín, Blanca López-Catalán, María A. Ramón-Jerónimo. 2013. Mobile Shoppers: Types, Drivers, and Impediments. *Journal of Organizational Computing and Electronic Commerce* **23**:4, 350-371. [Crossref]
94. Hyuck-Gi Lee, Sungwon Chung, Won-Hee Lee. 2013. Presence in virtual golf simulators: The effects of presence on perceived enjoyment, perceived value, and behavioral intention. *New Media & Society* **15**:6, 930-946. [Crossref]
95. Aikaterini C. Valvi, Constantinos C. Frangos, Christos C. Frangos. 2013. Online and mobile customer behaviour: a critical evaluation of Grounded Theory studies. *Behaviour & Information Technology* **32**:7, 655-667. [Crossref]
96. Christos K. Georgiadis, Patrick Y. K. Chau. 2013. Introduction to the special issue on User Experience in e-Business Environments. *Information Systems and e-Business Management* **11**:2, 185-188. [Crossref]
97. Jennifer E Gerow, Ramakrishna Ayyagari, Jason Bennett Thatcher, Philip L Roth. 2013. Can we have fun @ work? The role of intrinsic motivation for utilitarian systems. *European Journal of Information Systems* **22**:3, 360-380. [Crossref]

98. Md. Zahidul Islam, Patrick Kim Cheng Low, Ikramul Hasan. 2013. Intention to use advanced mobile phone services (AMPS). *Management Decision* **51**:4, 824-838. [Abstract] [Full Text] [PDF]
99. Saleh Alwahaishi, Václav Snášel. 2013. Modeling the Determinants Affecting Consumers' Acceptance and Use of Information and Communications Technology. *International Journal of E-Adoption* **5**:2, 25-39. [Crossref]
100. K. S. Subramanian, Vinita Sinha, Sonali Bhattacharya, Kaushik Chaudhary, Ravi Kulkarni. 2013. A Literature Review on Human Behavioral Pattern through Social Media Use. *International Journal of Cyber Behavior, Psychology and Learning* **3**:2, 56-81. [Crossref]
101. Ming-Yi Chen, Ching-I Teng. 2013. A comprehensive model of the effects of online store image on purchase intention in an e-commerce environment. *Electronic Commerce Research* **13**:1, 1-23. [Crossref]
102. Tao Zhou. 2013. Examining continuous usage of location-based services from the perspective of perceived justice. *Information Systems Frontiers* **15**:1, 141-150. [Crossref]
103. Victoria Magrath, Helen McCormick. 2013. Marketing design elements of mobile fashion retail apps. *Journal of Fashion Marketing and Management: An International Journal* **17**:1, 115-134. [Abstract] [Full Text] [PDF]
104. Tao Zhou. 2013. An empirical examination of the determinants of mobile purchase. *Personal and Ubiquitous Computing* **17**:1, 187-195. [Crossref]
105. Huiying Du, Ge Zhu, Limin Zhao, Tingjie Lv. 2012. An empirical study of consumer adoption on 3G value-added services in China. *Nankai Business Review International* **3**:3, 257-283. [Abstract] [Full Text] [PDF]
106. Changsu Kim, Robert D. Galliers, Namchul Shin, Joo-Han Ryoo, Jongheon Kim. 2012. Factors influencing Internet shopping value and customer repurchase intention. *Electronic Commerce Research and Applications* **11**:4, 374-387. [Crossref]
107. Lisa Y. Chen. Marketer Perceptions of Quality on the Success of Mobile Shopping System and Its Impact on Performance 29-33. [Crossref]
108. Wei-Tsong Wang, Hui-Min Li. 2012. Factors influencing mobile services adoption: a brand-equity perspective. *Internet Research* **22**:2, 142-179. [Abstract] [Full Text] [PDF]
109. Min Li, Z.Y. Dong, Xi Chen. 2012. Factors influencing consumption experience of mobile commerce. *Internet Research* **22**:2, 120-141. [Abstract] [Full Text] [PDF]
110. Tao Zhou, Yaobin Lu. 2011. Examining Postadoption Usage of Mobile Services From a Dual Perspective of Enablers and Inhibitors. *International Journal of Human-Computer Interaction* **27**:12, 1177-1191. [Crossref]
111. Ding Hooi Ting, Suet Fong Lim, Tanusina Siuly Patanmacia, Ca Gie Low, Gay Chuan Ker. 2011. Dependency on smartphone and the impact on purchase behaviour. *Young Consumers* **12**:3, 193-203. [Abstract] [Full Text] [PDF]
112. Anandan Pillai, Jaydeep Mukherjee. 2011. User acceptance of hedonic versus utilitarian social networking web sites. *Journal of Indian Business Research* **3**:3, 180-191. [Abstract] [Full Text] [PDF]
113. Tao Zhou. 2011. An empirical examination of initial trust in mobile banking. *Internet Research* **21**:5, 527-540. [Abstract] [Full Text] [PDF]
114. Guoping Cheng, Shuang Li, Chaoqun Deng. Research on the Agro-Processing Industry in Yunnan Participating in International Regional Cooperation 1-5. [Crossref]

115. Tao Zhou. 2011. Understanding mobile Internet continuance usage from the perspectives of UTAUT and flow. *Information Development* **27**:3, 207-218. [Crossref]
116. Kuan-Yu Lin, Hsi-Peng Lu. 2011. Why people use social networking sites: An empirical study integrating network externalities and motivation theory. *Computers in Human Behavior* **27**:3, 1152-1161. [Crossref]
117. Tong-Jin Park, Victoria Joy G. Saplan. 2011. Current Status of Mobile Commerce Research. *The Journal of Information Systems* **20**:1, 41-74. [Crossref]
118. Yung-Shen Yen. 2010. Can perceived risks affect the relationship of switching costs and customer loyalty in e-commerce?. *Internet Research* **20**:2, 210-224. [Abstract] [Full Text] [PDF]
119. Du Huiying, Lu Tingjie, Andrew B. Whinston, Liu Jiale. An Empirical Study of Consumer Adoption on Mobile Data Services (MDS) in China 298-301. [Crossref]
120. Yangcheng Hu. An Investigation on the Linkage between Purchase Intention and Service Quality in the E-Commerce Context 304-307. [Crossref]
121. Tao Zhou. Examining User Switch between Mobile Stores 1207-1221. [Crossref]
122. Ili Hawa Ahmad, Norshidah Mohamed, Ab Razak Che Hussain. Social and Technical Perspective of Individual's Intention to Purchase Mobile Application 1484-1511. [Crossref]
123. Matthew J. Haught, Ran Wei, Yang Xuerui, Jin Zhang. Understanding the Psychology of Mobile Phone Use and Mobile Shopping of the 1990s Cohort in China 88-105. [Crossref]
124. Sarah Josephine Hepple, Julie A. Dennison. The Effects of National Culture on Social Commerce and Online Fashion Purchase Intention 870-896. [Crossref]
125. Vaggelis Saprikis, Maro Vlachopoulou, Theodora Zarmpou. Mobile Services Behavioral Intention 1341-1364. [Crossref]
126. Chung Sim Liew, Ju Min Ang, Yee Teen Goh, Wai Kin Koh, Shy Yin Tan, Ru Yi Teh. Factors Influencing Consumer Acceptance of Internet of Things Technology 186-201. [Crossref]
127. Chong Ren Lee, Kah Yan Tam, Jee Yan Lim, Pei Ying Seow, Vivian Pooi Sun Lee, Nurin Amanda Muhammad Faris, Hairunisa Mohd Haris. Consumer Intention to Use Smartphone for Mobile Shopping 221-233. [Crossref]
128. Sarah Josephine Hepple, Julie A. Dennison. The Effects of National Culture on Social Commerce and Online Fashion Purchase Intention 250-276. [Crossref]
129. Sunday Adewale Olaleye, Ismaila Temitayo Sanusi, Dandison C. Ukpabi. Assessment of Mobile Money Enablers in Nigeria 129-155. [Crossref]
130. Alev Kocak Alan. The Role of Trust in Mobile Technologies Usage in Emerging Countries 234-261. [Crossref]
131. Ili Hawa Ahmad, Norshidah Mohamed, Ab Razak Che Hussain. Social and Technical Perspective of Individual's Intention to Purchase Mobile Application 45-72. [Crossref]
132. Chung Sim Liew, Ju Min Ang, Yee Teen Goh, Wai Kin Koh, Shy Yin Tan, Ru Yi Teh. Factors Influencing Consumer Acceptance of Internet of Things Technology 71-86. [Crossref]
133. Garry Wei-Han Tan, Voon-Hsien Lee, Choy-Har Wong, Keng-Boon Ooi. Mobile Shopping: 1448-1460. [Crossref]
134. Saïd Aboubaker Ettis, Afef Ben Zin El Abidine. Consumer Behavior in M-Commerce 264-287. [Crossref]
135. Vaggelis Saprikis, Maro Vlachopoulou, Theodora Zarmpou. Mobile Services Behavioral Intention 24-47. [Crossref]