

STANDARDIZATION OR ADAPTATION DURING THE WEB – MOBILE SERVICE TRANSITION: UNDERSTANDING THE MODERATING ROLE OF GENDER

Yongqiang Sun
School of Information Management
Wuhan University
299 Bayi Road, Wuhan, Hubei, China
sunyq@whu.edu.cn

Xiao-Liang Shen^{*}
Economics and Management School
Wuhan University
299 Bayi Road, Wuhan, Hubei, China
xlshen@whu.edu.cn

Nan Wang
School of Information Management
Wuhan University
299 Bayi Road, Wuhan, Hubei, China
nanwang@whu.edu.cn

ABSTRACT

This study investigates the standardization–adaptation paradox during the web–mobile service transition. Specifically, according to the expectation confirmation theory and the desire confirmation theory, the study proposes that user perceptions of the adaptability to the mobile context and of the consistency between the web and mobile services can shape their satisfaction with mobile services. This, in turn, can affect the intention to adopt mobile services. Furthermore, the study also highlights that males and females prefer different strategies (standardization or adaptation), such that perceived adaptability has a stronger impact on satisfaction for males than for females, while perceived consistency has a stronger impact on satisfaction for females than for males. A structural equation modeling analysis was conducted on data collected in China from a survey with 235 responses, and the results confirmed all of the hypotheses of the proposed research model. Theoretical and practical implications are also discussed.

Keywords: Mobile services; Satisfaction; Standardization; Adaptation; Gender difference

1. Introduction

The advancements in mobile devices and wireless networks have announced the coming of a new era, namely the “always-on” society or “ubiquitous society” (Hong et al. 2008). In this new era, a variety of mobile services, including mobile commerce services (Chen et al. 2015; Fassnacht et al. 2006; Lee et al. 2007), mobile banking services (Gu et al. 2009; Yu 2012), mobile health services (Akter et al. 2011; Scheepers et al. 2006; Sun et al. 2013), mobile government services (Trimi et al. 2008), mobile instant messaging and social media (Deng et al. 2010; Wang et al. Forthcoming; Zhan et al. 2016) and mobile entertainment services (Constantiou et al. 2010; Ha et al. 2007; Wakefield et al. 2006), have emerged and are now greatly changing people’s lives. With the rapid development of mobile technologies, web service providers tend to extend their services to the mobile context (Lin et al. 2011; Nysveen et al. 2005), facilitating the emergence of Amazon Mobile for mobile commerce and Facebook Mobile for mobile social networking services.

^{*} Corresponding author

However, opportunity is always accompanied by challenges. A burning question for traditional web service providers is how to transition their web services to the mobile context. Two strategies can be used during the service transition process: the *standardization strategy*, which postulates using unified and standardized services across different contexts, and the *adaptation strategy*, which stresses that services should be varied and adapted to specific contexts (Chai et al. 2005; Szymanski et al. 1993; Tarasi et al. 2013; Theodosiou et al. 2003). Within our research context, the standardization strategy may pay attention to the consistency between web and mobile services, while the adaptation strategy suggests adjusting the mobile services according to the unique features of the mobile context. Both of these strategies have their respective advantages. For example, the standardization strategy can leverage users' familiarity with prior web services and reduce the learning cost (Ahn 1999), while the adaptation strategy can address the difference between web and mobile contexts and provide users with services fit to the mobile context or offer unique services unavailable in web services, e.g., location-based services (Ferneley et al. 2006; Hennig-Thurau et al. 2010; Junglas et al. 2008b; Rao et al. 2003; Yun et al. 2013). Thus, it is of great importance to investigate this issue because practitioners want to search for certain guidelines for the strategic choice between standardization and adaptation in the web–mobile service transition context. Scholars are also curious about the relative importance of these two strategies. For instance, some users may prefer to maintain consistency between web and mobile service because they do not like to switch their behavioral patterns between two different contexts. In this situation, standardization strategy will be more effective than adaptation strategy. In contrast, some users may like mobile services that are fit to the mobile context such as fewer but more important searching results, making adaptation a better choice. Because using different strategies may satisfy different users' needs and different strategies may be associated with different design costs, it is important for service providers to adopt different strategies for different users.

In practice, to leverage the advantages of both standardization and adaptation strategies, most service providers may try to execute a hybrid strategy that balances the standardization and adaptation strategies, i.e., service providers may keep some service features consistent while changing other features to better fit the mobile context. In this case, standardization and adaptation strategies are able to coexist and the strategy selection is no longer an “either-or” question. To capture the extent to which users evaluate the levels of service standardization and adaptation, we adopt users' psychological perceptions about these strategies as the proxies. Specifically, we use perceived adaptability, defined as the extent to which the mobile services are designed to adapt to the unique features of the mobile context, as the proxy of users' perceptions about the adaptation strategy, and perceived consistency, the extent to which web and mobile services are consistent, as the proxy of users' perceptions about the standardization strategy. Although both of these strategies may be associated with users' mobile service adoption behaviors, whether these two strategies have equal contributions to users' behaviors is unknown. For practitioners, understanding the relative impacts of these two strategies is helpful to appropriately assign different weights to the two strategies. Thus, the first research question of this study is

RQ1: What is the relative impact of perceived consistency and perceived adaptability on mobile service adoption?

To understand the impact of the two strategies on mobile service adoption, in this study, we stress the pivotal role of satisfaction. In previous studies on technology acceptance and use, satisfaction is generally treated as an overall evaluation of the technology based on the expectation–confirmation mechanism at the post-adoption stage (Bhattacharjee 2001; Cheung et al. 2015; Gu et al. 2016; Sun et al. 2014a; Valvi et al. 2013). This has been used to capture user perceptions related to the accumulation of prior technology use experience. However, in our research context of service transition, we re-conceptualize it as the confirmation results of the comparison between the expectations of mobile services derived from users' prior web service use experience and the perceptions about the mobile services. This conceptualization indicates that satisfaction should be closely associated with strategies used in the service transition because the consistency or adaptability may raise the confirmation or disconfirmation between expectations and perceptions. Therefore, satisfaction can be taken as a mediator between perceived consistency/perceived adaptability and mobile service adoption.

Furthermore, when considering the relationships between two strategies and satisfaction, the importance of these two strategies may not be uniformly applied to different individuals, as some individuals may prefer the standardization strategy while others may rely more heavily on the adaptation strategy. In this case, it is necessary to know the conditions under which each strategy works better. Specifically, regarding gender as the most frequently used factor to classify user populations (Gefen et al. 1997; Sun et al. 2010; Sun et al. 2015), we try to understand how males and females differentiate from each other in the strategy selection process. Thus, the second research question of this study is

RQ2: How does gender moderate the impacts of perceived consistency and perceived adaptability on user satisfaction?

In solving these two research questions, the paper can contribute to prior literature in the following ways. First,

this is the first study, to the best of our knowledge, which investigates the strategy choice issue under the research context of the web–mobile service transition. Prior studies on mobile service adoption focus on the technology adoption issue by treating mobile service as a new technology but pay less attention to the linkage between web and mobile service. Although the standardization–adaptation paradox has been examined in the research context of international marketing, it is rarely applied in the research context of the web–mobile service transition. Thus, this study makes theoretical contributions to prior literature by proposing and empirically testing the relative importance of two service transition strategies (e.g., standardization and adaptation) in users’ mobile service adoption behaviors. Second, this study further identifies the boundary conditions under which the two strategies work better and stresses the moderating role of gender in particular. As the standardization–adaptation paradox has been less discussed in prior mobile service literature, the factors that determine their relative impacts are not explored either. Investigating the potential moderators can help mobile service providers to better understand how to deploy different strategies for different users. The findings relevant to the moderating effects can also enrich the original marketing literature on the standardization–adaptation paradox.

The remainder of the paper is organized as follows. The literature and theories on satisfaction, the standardization–adaptation paradox, and gender differences are reviewed, and the research model is developed. Then, the research methods and the data analysis results are described. Finally, the theoretical and practical implications of the study are discussed.

2. Theoretical Development

2.1. Web–Mobile Service Transition and the Standardization–Adaptation Paradox

As content providers can supply the same or similar services through different platforms, it is interesting to observe that a number of prior web service providers have begun to extend their services to the mobile context (i.e., web–mobile service transition) (Lin et al. 2011; Sun et al. 2014b; Wang et al. 2013). However, success in web services cannot promise success in mobile services because these two contexts are distinct. The major differences between these two contexts are summarized in Table 1.

Table 1: Comparisons between web and mobile services

	Web Services	Mobile Services	Comparison
Device			
Output/Screen	Relatively big	Relatively small	Web > Mobile
Input/Keyboard	More convenient	Less convenient	Web > Mobile
Processing Speed	Fast	Slow	Web > Mobile
Mobility	Low	High	Web < Mobile
Network			
Network Speed	Fast	Slow	Web > Mobile
Payment	Relatively low	Relatively high	Web > Mobile
Ubiquity	Low	High	Web < Mobile
Service			
Location Awareness	Not applicable	Applicable	Web < Mobile

As shown in the table, mobile services differ from web services in three aspects: device, network, and service. As to the device, web services have the advantages in output (e.g., larger screen), input (e.g., more convenience), and processing speed, while mobile services have the advantage of high mobility. As for the network, web services have the advantages of relatively fast network speed and low costs, while mobile services are superior to web services because of their relatively high ubiquity. As for the service, mobile services can support location-based services that are not available for web services. Therefore, to offer better mobile services to users, service providers should recognize the differences between mobile and web services to avoid the disadvantages and leverage the advantages. This makes the strategies to cope with the web–mobile services transition an important issue.

Specifically, two strategies may be used in the service transition process: standardization versus adaptation strategies (Szymanski et al. 1993; Theodosiou et al. 2003). The standardization strategy emphasizes using a unified approach across different contexts, while the adaptation strategy stresses using different approaches in different

contexts to capture the unique features of particular contexts. The distinctions between these two strategies are demonstrated in Table 2.

Table 2: Standardization versus adaptation

Strategies	Fundamental Assumption	Advantages	
		Providers' Perspective	Users' Perspective
Standardization	<ul style="list-style-type: none"> • Homogeneity • Similarity-focused 	<ul style="list-style-type: none"> • Low design cost • Unified image 	<ul style="list-style-type: none"> • Low learning cost
Adaptation	<ul style="list-style-type: none"> • Heterogeneity • Difference-focused 	<ul style="list-style-type: none"> • Meet users' specific needs 	<ul style="list-style-type: none"> • Fit with the usage context

The standardization strategy assumes that the two contexts involved in the transition process are homogenous and therefore focuses on the similarity between the two contexts, whereas the adaptation strategy emphasizes that the two contexts are heterogeneous in nature and these differences should be well addressed to achieve strategic effectiveness (Agrawal 1995; Alashban et al. 2002; Cavusgil et al. 1993; Lehrer et al. 2009; Solberg 2000; Theodosiou et al. 2003). Both the standardization and adaptation strategies have their respective advantages. Within our research context, these advantages can be viewed from both the service providers' and service users' perspectives. From the providers' perspective, the standardization strategy has the advantages of relatively low design cost (e.g., no need to re-design the service for mobile features) and a unified image (Vargo et al. 2004). In contrast, the adaptation strategy has the advantages of offering users services customized to their usage context, enhancing user satisfaction, and attracting sustained usage. Accordingly, from the users' perspective, the standardization strategy can reduce the time and effort spent to learn the new services, while the adaptation strategy has the advantage of receiving fit-to-context services.

Considering the advantages of both the standardization and adaptation strategies, service providers may apply a hybrid strategy that balances the standardization and adaptation strategies. Specifically, service providers may keep some service functions consistent across the web and mobile services and adjust some service functions to fit with the unique features of mobile services (e.g., location-based services). In this case, during the service transition process, users may make their decisions about whether to adopt the mobile services based on the evaluations of the extent to which mobile services and web services are consistent (i.e., perceived consistency) and the extent to which mobile services are designed to adapt to the mobile context (i.e., perceived adaptability). These two perceptions can be used as the subjective proxies of the two strategies. Furthermore, as standardization and adaptation strategies coexist in the hybrid strategy, we propose both perceived consistency and perceived adaptability as the factors that influence users' satisfaction about the mobile services, which in turn affects the intention to adopt mobile services.

2.2. Satisfaction Theory

Satisfaction is generally defined as a positive evaluative, affective, or emotional response to a product or service (Cronin et al. 2000; Oliver et al. 1989). It is regarded as an important predictor of customer retention (Cronin et al. 2000) or technology continuance (Bhattacharjee 2001). However, previous studies on satisfaction focus on situations where only one product or service is involved by assuming that individuals' prior experience about the product or service will influence their repeat purchase or usage (Cronin et al. 2000). There have been few studies paying attention to the role of satisfaction in the service transition context where two services are involved. In this study, we argue that during the web-mobile service transition process, users can transfer their prior experience with web services to their evaluations of the corresponding mobile services and gauge their satisfaction based on the comparison between web and mobile services. When users feel satisfied with mobile services through the web-mobile service comparison, they will have a strong intention to adopt mobile services. Thus, we propose that

H1: Satisfaction is positively associated with intention to adopt mobile services.

Most prior studies on satisfaction, based on the *expectation-confirmation theory* (Oliver 1980), state that satisfaction is a result of comparison between individuals' expectations and perceptions about the performance of products or services (e.g., expectation confirmation). Specifically, when the actual performance of products or services exceeds (positive disconfirmation) or matches people's expectations (confirmation), they will feel satisfied. In contrast, when perceived performance is lower than expectations (negative disconfirmation), they will feel dissatisfied.

The expectation-confirmation theory can be used to explain the impact of perceived consistency on satisfaction. Within the service transition context, users tend to decide whether to use mobile services by comparing mobile and

web services. When mobile services are designed to be consistent with web services, users' expectations about the mobile services can be well met because they can easily transfer their prior experience with the web services to the mobile context. Therefore, users will feel more satisfied when the consistency between web and mobile services is high than when the consistency is low. Thus, we propose that

H2: Perceived consistency is positively associated with satisfaction.

In addition to expectation confirmation theory of satisfaction, prior literature also suggests other mechanisms to understand satisfaction formation. Specifically, based on Oliver (1993), Spreng and Mackoy (1996) conceptually differentiate *desire congruence* and *expectation confirmation* and determine that satisfaction is a joint result of desire congruence (via service quality) and expectation confirmation. Khalifa and Liu (2002) also note the importance of distinguishing desires from expectations when understanding user satisfaction with internet-based services. Desires are labeled as an internalized and desired ideal standard, while expectations rely on external standards such as prior experience or product descriptions (Khalifa et al. 2002). Thus, the formation of desires is based on users' inner needs rather than realistic prediction. Unlike expectation confirmation, which is based on the comparison between perceived performance and expectations, desire confirmation is derived from the comparison of perceived performance and desires (Khalifa et al. 2002; Spreng et al. 1996). It suggests that one product or service may meet the expectations but not the desires. For example, the quality of a low-priced product may match one's expectation (it is predicted to be low-quality) but not one's desire (one wants a high-quality product). According to desire confirmation theory (Khalifa et al. 2002) or goal attainment theory (Briggs et al. 2006; King 1981; Reinig 2003), satisfaction is considered to be determined by desire confirmation.

The impact of perceived adaptability on satisfaction can be explained by the desire confirmation theory of satisfaction. Perceived adaptability is closely associated with the concept of personalization. When mobile services are designed to fit with some specific features of the mobile context (e.g., location-based service), users will be more likely to consider that the service provider takes care of their personal needs or desires (Shen et al. 2013). Considering satisfaction as a result of desire confirmation (Khalifa et al. 2002), users will be more satisfied when the services are personalized (Au et al. 2008). The relationship between personalization and satisfaction has already been empirically examined in prior studies (e.g., Liang et al. 2007; Lin et al. 2008). Therefore, we propose that

H3: Perceived adaptability is positively associated with satisfaction.

2.3. Gender Difference

Gender difference in decision making has been well recognized in previous studies (Areni et al. 1998; Fisher et al. 2006; Gefen et al. 1997; Kim et al. 2008; Sun et al. 2010; Venkatesh et al. 2012; Weiser 2000). Prior literature has identified many differences between males and females. Specifically, males are regarded as more independent, competitive, and driven by instrumental goals, while females tend to pursue harmonic interrelationships and expressive and communal goals (Sun et al. 2010). Thus, during the satisfaction formation process, it is expected that males would pay more attention to the internal standards or inner needs as the reference point, while females would focus on external cues (e.g., expectations derived from their prior experience) as the reference point (Gefen et al. 1997; Putrevu 2001). In other words, the desire confirmation mechanism works better for males than for females, while the expectation confirmation mechanism works better for females than for males. Within our research context, females expect mobile services to be consistent with web services because they do not like to seek novelty or take risks (Venkatesh et al. 2012). Thus, perceived consistency should have a stronger impact on satisfaction for females than for males. In contrast, males tend to make independent decisions and pursue their inner desires without paying too much attention to the external constraints. Furthermore, males have a tendency to seek novelty and take risks (Venkatesh et al. 2012), causing them to care more about how the services are adjusted to fit with the mobile context. Thus, when forming satisfaction, perceived adaptability will be considered more important for males than for females. Therefore, we propose that

H4: The relationship between perceived consistency and satisfaction is stronger for females than for males.

H5: The relationship between perceived adaptability and satisfaction is stronger for males than for females.

Based on these hypotheses, we develop our research model as shown in Figure 1. In this model, we propose that perceived consistency and perceived adaptability as the proxies of the two strategies (e.g., standardization and adaptation strategies) influence satisfaction, which in turn affects intention to adopt mobile services. We also note that the impacts of perceived consistency and perceived adaptability on satisfaction vary across genders. In the next section,

we will describe, in detail, the survey conducted to examine this research model.

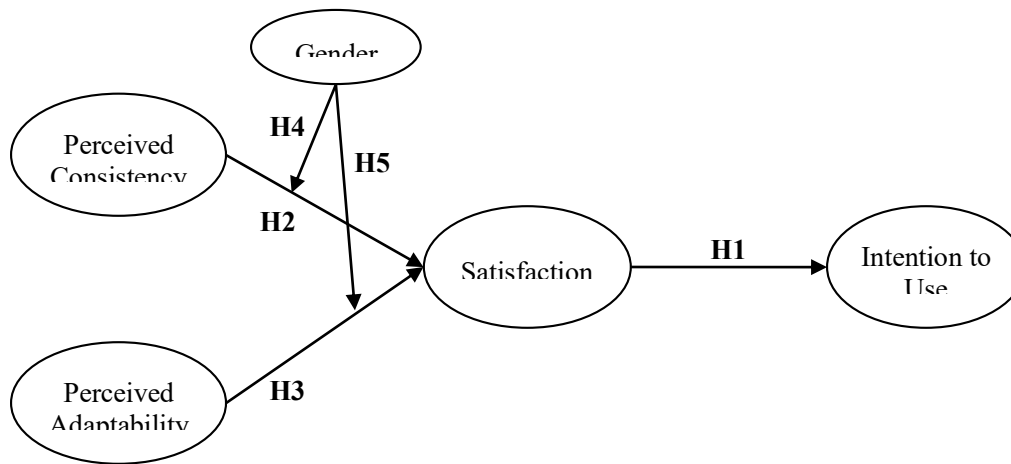


Figure 1: Research Model

3. Method

3.1. Research Settings

This study focused on a special service electronic word-of-mouth (eWOM) service which is regarded as an important type of information service (Shen et al. Forthcoming). Specifically, a famous Chinese information service provider, Dianping.com, was selected as the research site. Initiated in 2003, the web services of Dianping.com provide a platform for users to post their ratings and reviews on restaurants and other entertainment services and to help other users make decisions about the consumption of these services. According to a report in March 2011, Dianping.com has more than 30 million active users, and the reviews cover one million vendors across 2,000 Chinese cities. To extend the scope of information services, Dianping.com has successfully launched a mobile application (e.g., mobile services) in 2010.

This platform was selected as the research setting for two major reasons. First, the research site has both web services and corresponding mobile services that fit with our research objective to investigate the web–mobile service transition. The mobile services were launched no more than one year prior (from the date when the data were collected), and most of the users are confronted with the service transition, making the web–mobile service transition behavior accessible. Second, both standardization strategy (e.g., the content and interface of mobile services were consistent with the web service to some degree) and adaptation strategy (e.g., some interface features were adjusted to fit the screen and some new functions, such as location-based services, were added) were used in the service transition process. Thus, it was helpful for us to investigate the role of these two strategies.

3.2. Measures

Measures for the constructs in this study were adapted from the existing literature. Specifically, the construct of intention to use mobile services was measured with three items adapted from Kim and Han (2009). Perceived adaptability was measured with three items adapted from Spiro and Weitz (1990). Satisfaction was measured with four items adapted from Bhattacharjee (2001). Because the measures for perceived consistency were not available in prior studies, we developed an instrument with four items according to the meaning of consistency. Specifically, we used the keywords “close,” “similar,” “consistent,” and “no significant difference” to capture the consistency between web and mobile services. The content validity of these measures was assessed by PhD students and some users of Dianping.com. The statistical validity of these measures will be reported in the data analysis section of the paper. The details of these measures are shown in Appendix A.

3.3. Data Collection Procedures

An online survey was used to collect the data. As the study aimed to examine the service transition behavior that required the comparisons between web and mobile Dianping.com, respondents should have certain experience with both the web and mobile versions of Dianping.com. Respondents were recruited through several channels. First, we sent invitation letters to the registered users of Dianping.com whose contact information can be found on Dianping.com. Second, because Dianping.com had a micro-blog account, we also searched for potential participants

by sending messages to the followers of the micro-blog account. In the invitation letter or message, we provided a short description of the research objective as well as a URL of the online questionnaire webpage. To encourage their participation, certain incentives (e.g., prepaid calling card) were provided through a lottery.

In total, approximately 2000 invitation letters were sent out, and 235 usable responses were gathered (i.e., the response rate was approximately 12%). Among these participants, 47.7% of respondents were male; more than 70% of respondents were 26 years or higher; over 75% of respondents had a bachelor's or higher degree; over 80% of respondents had more than seven years of experience with the Internet; more than 60% of respondents had more than three years of experience with Dianping.com; and more than 60% of respondents had more than three months of experience with the mobile application of Dianping.com.

4. Results

Partial least squares (PLS) was used to analyze the data. As a second-generation statistical technique (i.e., structural equation modeling, SEM), PLS can estimate the measurement model and structural model systematically and simultaneously. Compared to covariance-based SEM, PLS is more suitable for explorative research and relatively small samples (Hair et al. 2011), which is the case in our study. Therefore, PLS, and SmartPLS in particular, was used as the data analysis tool. Following two-step analytical procedures (Hair et al. 1998), we examined the measurement model and the structural model.

4.1. Measurement Model

The composite reliability (CR), Cronbach's alpha, and average variance extracted (AVE) were used to assess the reliability. As shown in Table 3, CR and alpha values for all constructs were above 0.70 and AVE values for all constructs were above 0.50 (Fornell et al. 1981), suggesting good reliability for all constructs. Convergent validity was assessed by determining whether the item loadings on the respective constructs were high enough. As reported in Table 2, the item loadings for all of the constructs were above 0.70, indicating good convergent validity.

Discriminant validity can be assessed through two ways. First, it can be assessed by verifying that the square root of the AVE for each construct is greater than the correlations between that construct and all other constructs (Fornell et al. 1981). The data presented in Table 3 demonstrated a satisfactory discriminant validity for each construct. Second, discriminant validity can be assessed by examining whether the loading of one item on its expected factor is higher than its loading on other factors (Fornell et al. 1981). The cross loadings shown in Table 4 suggested that although several cross-loadings were greater than 0.5, they were smaller than the loadings on the expected constructs (all above 0.8), so all of the constructs demonstrated good discriminant validity.

Table 3: Reliability and Correlations

	CR	Alpha	AVE	PC	INTU	PA	SAT
PC	0.939	0.914	0.795	0.892			
INTU	0.951	0.923	0.866	0.473	0.931		
PA	0.918	0.866	0.789	0.582	0.681	0.888	
SAT	0.946	0.924	0.815	0.589	0.503	0.552	0.903

Note: CR = Composite reliability, AVE = Average variance extracted, PC = Perceived consistency, INTU = Intention to use, PA = Perceived adaptability, SAT = Satisfaction. The bold numbers in the diagonal rows are square roots of the average variance extracted (AVE).

Table 4: Loadings and Cross Loadings

	PA	INTU	PC	SAT
PA1	0.893	0.641	0.572	0.496
PA2	0.921	0.578	0.540	0.528
PA3	0.850	0.602	0.430	0.442
INTU1	0.624	0.913	0.453	0.430
INTU2	0.629	0.937	0.427	0.461
INTU3	0.649	0.942	0.442	0.507
PC1	0.528	0.420	0.890	0.500
PC2	0.560	0.397	0.893	0.539
PC3	0.505	0.456	0.908	0.570
PC4	0.480	0.412	0.875	0.484
SAT1	0.500	0.499	0.553	0.913
SAT2	0.502	0.466	0.511	0.896
SAT3	0.520	0.465	0.541	0.902
SAT4	0.469	0.375	0.521	0.900

Note: PA = Perceived adaptability, INTU = Intention to use, PC = Perceived consistency, SAT = Satisfaction.

4.2. Structural Model

The results of the structural model were presented in Figure 2. Specifically, the results showed that the relationship between satisfaction and intention to use was significant ($\beta = 0.503$, $t = 7.868$), lending support to H1. Perceived consistency was found to significantly influence satisfaction ($\beta = 0.405$, $t = 5.891$), providing strong support for H2. Perceived adaptability was found to have a significant impact on satisfaction ($\beta = 0.316$, $t = 3.789$), supporting H3.

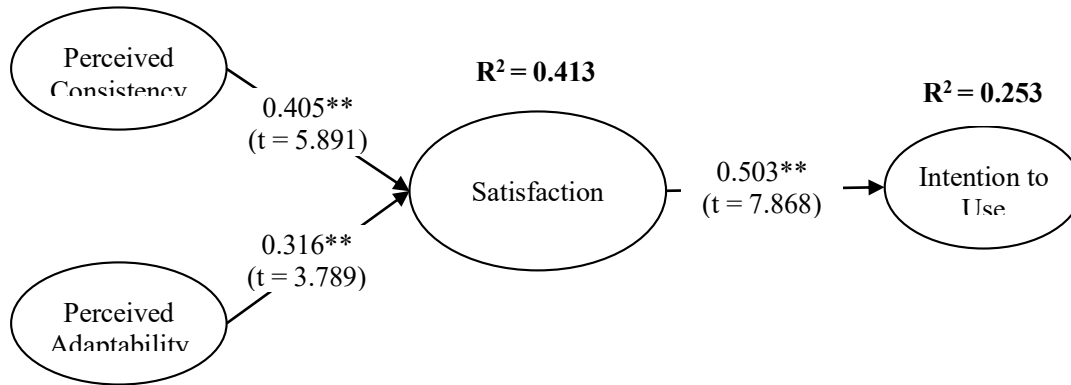


Figure 2: PLS results (overall sample)

To examine the moderating role of gender, the whole sample was separated into the male group and the female group, and the research model was re-examined based on these two sub-samples. Then, the path coefficients denoting the relationships between perceived consistency and satisfaction, and between perceived adaptability and satisfaction were compared across two groups using the method provided by Sia et al.(2009) (see Appendix B for details).

Table 5: Path Coefficient Comparison

	Males ($N_1 = 112$)	Females ($N_2 = 123$)	Difference
Perceived Consistency	0.266** ($t = 4.095, \varepsilon = 0.065$)	0.460** ($t = 6.979, \varepsilon = 0.066$)	$\Delta = 0.194^*$ $t_{\text{spooled}} = 2.097$
Perceived Adaptability	0.525** ($t = 9.035, \varepsilon = 0.058$)	0.224* ($t = 2.571, \varepsilon = 0.087$)	$\Delta = 0.301^{**}$ $t_{\text{spooled}} = 2.834$

Note: The dependent variable was satisfaction. * $p < 0.05$, ** $p < 0.01$.

As shown in Table 5, the path coefficient between perceived consistency and satisfaction was 0.266 ($t = 4.095, \varepsilon = 0.065$) for males and 0.460 ($t = 6.979, \varepsilon = 0.066$) for females with a difference of 0.194 ($t_{\text{spooled}} = 2.097, p < 0.05$), lending support to H4. In contrast, the path coefficient between perceived adaptability and satisfaction was 0.525 ($t = 9.035, \varepsilon = 0.058$) for males and 0.224 ($t = 2.571, \varepsilon = 0.087$) for females, with a difference of 0.301 ($t_{\text{spooled}} = 2.834, p < 0.01$), supporting H5.

4.3. Post-hoc Analysis

In the post hoc analysis, we further tested the mediating effect of satisfaction and the moderating effects of other potential moderators (e.g., experience). According to Baron and Kenny's (1986) method, we firstly analyzed the direct effects of perceived consistency and perceived adaptability on intention and found that both of these two direct effects were significant. Furthermore, the impacts of these two independent variables on the mediator (e.g., satisfaction) were also found to be significant. Finally, we included both the independent variables and the mediator as the predictors of intention and found that the impacts of satisfaction ($\beta = 0.159, t = 2.578$) and perceived adaptability ($\beta = 0.566, t = 6.986$) were significant, while the impact of perceived consistency was insignificant ($\beta = 0.052, t = 0.677$), so the impact of perceived adaptability on intention was partially mediated by satisfaction, while the impact of perceived consistency on intention was fully mediated by satisfaction. The direct effect of perceived adaptability on intention suggested that there was another mechanism to explain the influence of perceived adaptability beyond the satisfaction mechanism. One possible explanation is that satisfaction is based on the confirmation mechanism (either expectation confirmation or desire confirmation), while the adaptability strategy may bring some novel features not implicated in original expectations or desires. Another possible explanation is that the impact of perceived adaptability is so strong that its direct effect can still be observed even when satisfaction is included. It is similar to the argument for the direct effect of perceived usefulness (beyond the indirect effect via attitude) on intention in the technology acceptance model (Davis 1989).

Furthermore, we also examined the moderating role of experience in using mobile Dianping.com. The results showed that the relationship between perceived consistency and satisfaction was significant for both the low-experience group ($\beta = 0.337, t = 2.798$) and high-experience group ($\beta = 0.502, t = 5.093$), while the difference in path coefficients was not significant ($t_{\text{spooled}} = 0.951, p > 0.1$). Similarly, the relationship between perceived adaptability and satisfaction was significant for the low-experience group ($\beta = 0.408, t = 3.178$) but insignificant for the high-experience group ($\beta = 0.199, t = 1.455$), while the difference in path coefficients was not significant ($t_{\text{spooled}} = 1.062, p > 0.1$). Thus, the moderating effect of experience was not significant.

5. Discussion

5.1. Theoretical Implications

This study examines the role of standardization and adaptation strategies used during the web–mobile service transition and analyzes gender differences in strategy preference, enriching mobile service literature in several ways. First, to the best of our knowledge, it is the first study that investigates the standardization–adaptation paradox during web–mobile service transition. The web–mobile service transition, especially for the standardization–adaptation paradox, has rarely been examined in prior studies. In this study, we propose that during the service transition process, users' perceptions about the standardization and adaptation strategies will shape the satisfaction that ultimately leads to intention to use mobile services. The proposed research model can be further examined and extended in future research on service transition.

Second, this study articulates two different mechanisms to explain satisfaction. Most prior studies have relied heavily on the expectation confirmation theory to explain the factors affecting satisfaction (e.g., Bhattacharjee 2001) but have paid less attention to the desire confirmation theory (Khalifa et al. 2002). In this study, we argue that expectation and desire confirmation are two different mechanisms and that they can be used together to predict satisfaction. In our research context, we further discover that the impact of perceived consistency on satisfaction

follows the expectation confirmation mechanism, while the impact of perceived adaptability on satisfaction reflects the desire confirmation mechanism.

Third, this study also identifies the boundary conditions under which each strategy works. Specifically, the results suggest that perceived adaptability has a stronger impact on satisfaction for males than for females, while perceived consistency has a stronger impact on satisfaction for females than for males. The results indicate that during the service transition process, males and females have different tendencies toward relationships, novelty, and risks: for males, who prefer independent decisions and seek novelty and risks, the adaptability strategy is more appropriate; in contrast, for females, who stress relationships and avoid uncertainty, the standardization strategy is more suitable. This finding indicates that there is a fit between strategy and the individual and that only the strategy that matches the individual's preference could generate the greatest value. This finding enriches the literature on the standardization–adaptation paradox by proposing gender as an important contingent factor.

5.2. Practical Implications

This study also has several practical implications for service providers. First, service providers should recognize that both the standardization and adaptation strategies have their respective advantages and should engage in a balance between these strategies. For example, standardization strategy can reduce users' learning costs but reduce compatibility with the mobile context, such as screen and input/output restrictions. Second, service providers should recognize that standardization and adaptation strategies can be applied in different contexts or for different user populations. The standardization strategy is more suitable for female users, while the adaptation strategy is more appropriate for male users. Therefore, service providers should offer different versions of mobile services to meet different users' needs. For example, when a female user uses mobile services, service providers should scan the users' profiles and recognize that the user is a female user and then provide the mobile services with the standardization strategy.

5.3. Limitations and Future Research

Our findings should be interpreted in light of some limitations. First, the study only adopts the factors relevant to the standardization and adaptation strategy to understand mobile service adoption behavior. Other factors relevant to technology adoption in previous theories, such as perceived usefulness and perceived ease of use in the technology acceptance model (TAM) (Davis et al. 1989; Venkatesh et al. 2003) and task-technology fit (Junglas et al. 2009; Junglas et al. 2008a), are not included in the current model. In future studies, other theoretical perspectives can be incorporated into our research model. Second, the findings are obtained based on a single service provider in China; thus, applying them into other research contexts should be done with caution. The differences in services and culture (Sia et al. 2009) may limit the generalizability of the research findings. Future research that extends our model to other research contexts will be encouraged.

6. Conclusion

The transition from web services to mobile services is both an opportunity and a challenge. One important issue of service transition concerns the strategy selection between standardization strategy and adaptability strategy. To understand the relative impacts of these two strategies and the boundary conditions under which each strategy works, we propose a research model to examine the standardization–adaptability paradox and the moderating effect of gender. The results suggest that standardization strategy and adaptability work better for females and males, respectively. The findings indicate that a person–strategy fit view should be considered in future research on mobile service design.

Acknowledgements

The work described in this paper was partially supported by the grants from the National Natural Science Foundation of China (Project No. 71201118, 71301125), the Fundamental Research Funds for the Central Universities (Project No. 410500133, 413000011, 410500261), and the Research Fund for Academic Team of Young Scholars at Wuhan University (Big Data and Business Analytics).

REFERENCES

- Agrawal, M. "Review of a 40-Year Debate in International Advertising: Practitioner and Academic Perspectives to the Standardization/Adaptation Issue," *International Marketing Review*, Vol. 12, No. 1: 26-48, 1995.
- Ahn, S. "Technology Upgrading with Learning Cost: A Solution for Two 'Productivity Puzzles'," *OECD Economics Department Working Papers*, Vol. 220, No., 1999.
- Akter, S., D'Ambra, J., and Ray, P. "Trustworthiness in mHealth Information Services: An Assessment of a Hierarchical Model with Mediating and Moderating Effects Using Partial Least Squares (PLS)," *Journal of the American Society for Information Science and Technology*, Vol. 62, No. 1: 100-116, 2011.

- Alashban, A.A., Hayes, L.A., Zinkhan, G.M., and Balazs, A.L. "International Brand-Name Standardization/Adaptation: Antecedents and Consequences," *Journal of International Marketing*, Vol. 10, No. 3: 22-48, 2002.
- Areni, C.S., Kiecker, P., and Palan, K.M. "Is It Better to Given than to Receive? Exploring Gender Differences in the Meaning of Memorable Gifts " *Psychology & Marketing*, Vol. 15, No. 1: 81-109, 1998.
- Au, N., Ngai, E.W., and Cheng, T.E. "Extending the understanding of end user information systems satisfaction formation: An equitable needs fulfillment model approach," *MIS Quarterly*, Vol. 32, No. 1: 43-66, 2008.
- Baron, R.M., and Kenny, D.A. "The Moderator-Mediator Variable Distinction in Social Psychological Research: Conceptual, Strategic, and Statistical Considerations," *Journal of Personality and Social Psychology*, Vol. 51, No. 6: 1173-1182, 1986.
- Bhattacharjee, A. "Understanding Information Systems Continuance: An Expectation-Confirmation Model," *MIS Quarterly*, Vol. 25, No. 3: 351-370, 2001.
- Briggs, R.O., Reinig, B.A., and de Vreede, G.J. "Meeting Satisfaction for Technology-Supported Groups: An Empirical Validation of a Goal-Attainment Model," *Small Group Research*, Vol. 37, No. 6: 585-611, 2006.
- Cavusgil, S.T., Zou, S., and Naidu, G. "Product and promotion adaptation in export ventures: an empirical investigation," *Journal of International Business Studies*, Vol. 24, No. 3: 479-506, 1993.
- Chai, K.-H., Zhang, J., and Tan, K.-C. "A TRIZ-based method for new service design," *Journal of Service Research*, Vol. 8, No. 1: 48-66, 2005.
- Chen, J., and Shen, X.-L. "Consumers' Decision in Social Commerce Context: An Empirical Investigation," *Decision Support Systems*, Vol. 79, No.: 55-64, 2015.
- Cheung, C.M.K., Shen, X.-L., Lee, Z., and Chan, T. "Promoting Sales of Online Games through Customer Engagement," *Electronic Commerce Research and Applications*, Vol. 14, No. 4: 241-250, 2015.
- Constantiou, I.D., and Mahnke, V. "Consumer Behaviour and Mobile TV Services: Do Men Differ from Women in Their Adoption Intention," *Journal of Electronic Commerce Research*, Vol. 11, No. 2: 127-139, 2010.
- Cronin, J.J., Brady, M.K., and Hult, G.T.M. "Assessing the Effects of Quality, Value, and Customer Satisfaction on Consumer Behavioral Intentions in Service Environments," *Journal of Retailing*, Vol. 76, No. 2: 193-218, 2000.
- Davis, F.D. "Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology," *MIS Quarterly*, Vol. 13, No. 3: 319-340, 1989.
- Davis, F.D., Bagozzi, R.P., and Warshaw, P.R. "User Acceptance of Computer Technology: A Comparison of Two Theoretical Models," *Management Science*, Vol. 35, No. 8: 982-1003, 1989.
- Deng, Z., Lu, Y., Wei, K.K., and Zhang, J. "Understanding Customer Satisfaction and Loyalty: An Empirical Study of Mobile Instant Messages in China," *International Journal of Information Management*, Vol. 30, No. 4: 289-300, 2010.
- Fassnacht, M., and Koese, I. "Quality of electronic services conceptualizing and testing a hierarchical model," *Journal of Service Research*, Vol. 9, No. 1: 19-37, 2006.
- Ferneley, E., and Light, B. "Secondary user relations in emerging mobile computing environments," *European Journal of Information Systems*, Vol. 15, No. 3: 301-306, 2006.
- Fisher, R.J., and Gregoire, Y. "Gender Differences in Decision Satisfaction within Established Dyads: Effects of Competitive and Cooperative Behaviors," *Psychology & Marketing*, Vol. 23, No. 4: 313-333, 2006.
- Fornell, C., and Larcker, D.F. "Evaluating Structural Equation Models with Unobservable Variables and Measurement Error," *Journal of Marketing Research*, Vol. 18, No. 1: 39-50, 1981.
- Gefen, D., and Straub, D.W. "Gender Differences in the Perception and Use of E-mail: An Extension to the Technology Acceptance Model," *MIS Quarterly*, Vol. 21, No. 4: 389-400, 1997.
- Gu, J.C., Lee, S.C., and Suh, Y.H. "Determinants of Behavioral Intention to Mobile Banking," *Expert Systems with Applications*, Vol. 36, No. 9: 11605-11616, 2009.
- Gu, R., Oh, L.-B., and Wang, K. "Developing User Loyalty for Social Networking Sites: A Relational Perspective," *Journal of Electronic Commerce Research*, Vol. 17, No. 1: 1-21, 2016.
- Ha, I., Yoon, Y., and Choi, M. "Determinants of Adoption of Mobile Games under Mobile Broadband Wireless access Environment," *Information & Management*, Vol. 44, No. 3: 276-286, 2007.
- Hair, J.F., Anderson, R.E., Tatham, R.L., and Black, W.C. *Multivariate Data Analysis*, (5th ed.) Prentice-Hall, Upper Saddle River, NJ, 1998.
- Hair, J.F., Ringle, C.M., and Sarstedt, M. "PLS-SEM: Indeed a Silver Bullet," *The Journal of Marketing Theory and Practice*, Vol. 19, No. 2: 139-152, 2011.
- Hennig-Thurau, T., Malthouse, E.C., Friege, C., Gensler, S., Lobschat, L., Rangaswamy, A., and Skiera, B. "The impact of new media on customer relationships," *Journal of Service Research*, Vol. 13, No. 3: 311-330, 2010.
- Hong, S.J., Thong, J.Y.L., Moon, J.Y., and Tam, K.Y. "Understanding the behavior of mobile data services

- consumers," *Information Systems Frontiers*, Vol. 10, No. 4: 431-445, 2008.
- Junglas, I., Abraham, C., and Ives, B. "Mobile technology at the frontlines of patient care: Understanding fit and human drives in utilization decisions and performance," *Decision Support Systems*, Vol. 46, No. 3: 634-647, 2009.
- Junglas, I., Abraham, C., and Watson, R.T. "Task-technology fit for mobile locatable information systems," *Decision Support Systems*, Vol. 45, No. 4: 1046-1057, 2008a.
- Junglas, I.A., and Watson, R.T. "Location-based services," *Communications of the ACM*, Vol. 51, No. 3: 65-69, 2008b.
- Khalifa, M., and Liu, V. "Satisfaction with Internet-based Services: The Role of Expectations and Desires," *International Journal of Electronic Commerce*, Vol. 7, No. 2: 31-49, 2002.
- Kim, B., and Han, I. "What Drives the Adoption of Mobile Data Services & Quest: An Approach from a Value Perspective," *Journal of Information Technology*, Vol. 24, No. 1: 35-45, 2009.
- Kim, J., and Forsythe, S. "Adoption of Virtual Try-on Technology for Online Apparel Shopping," *Journal of Interactive Marketing*, Vol. 22, No. 2: 45-59, 2008.
- King, I.M. *A Theory of Nursing: Systems, Concepts, Process* Wiley, New York, 1981.
- Lee, C.C., Cheng, H.K., and Cheng, H.H. "An Empirical Study of Mobile Commerce in Insurance Industry: Task-Technology Fit and Individual Differences," *Decision Support Systems*, Vol. 43, No. 1: 95-110, 2007.
- Lehrer, M., and Behnam, M. "Modularity vs programmability in design of international products: Beyond the standardization-adaptation tradeoff?," *European Management Journal*, Vol. 27, No. 4: 281-292, 2009.
- Liang, T.-P., Lai, H.-J., and Ku, Y.-C. "Personalized content recommendation and user satisfaction: Theoretical synthesis and empirical findings," *Journal of Management Information Systems*, Vol. 23, No. 3: 45-70, 2007.
- Lin, C.-P., Huang, H.-N., Joe, S.-W., and Ma, H.-C. "Learning the determinants of satisfaction and usage intention of instant messaging," *Cyberpsychology & Behavior*, Vol. 11, No. 3: 262-267, 2008.
- Lin, J., Lu, Y., Wang, B., and Wei, K.K. "The Role of Inter-Channel Trust Transfer in Establishing Mobile Commerce Trust," *Electronic Commerce Research and Applications*, Vol. 10, No. 6: 615-625, 2011.
- Nysveen, H., Pedersen, P.E., Thorbjørnsen, H., and Berthon, P. "Mobilizing the Brand The Effects of Mobile Services on Brand Relationships and Main Channel Use," *Journal of Service Research*, Vol. 7, No. 3: 257-276, 2005.
- Oliver, R.L. "A Cognitive Model of the Antecedents and Consequences of Satisfaction Decisions," *Journal of Marketing Research*, Vol. 17, No. 4: 460-469, 1980.
- Oliver, R.L. (ed.) *A Conceptual Model of Service Quality and Service Satisfaction: Compliance Goals, Different Concepts*, 1993.
- Oliver, R.L., and Swan, J.E. "Equity and Disconfirmation Perceptions as Influences on Merchant and Product Satisfaction," *Journal of Consumer Research*, Vol. 16, No. 3: 372-383, 1989.
- Putrevu, S. "Exploring the Origins and Information Processing Differences Between Men and Women: Implications for Advertisers," in: *Academy of Marketing Science Review*, 2001, pp. 1-14.
- Rao, B., and Minakakis, L. "Evolution of Mobile Location-Based Services," *Communications of the ACM*, Vol. 46, No. 12: 61-65, 2003.
- Reinig, B.A. "Toward an Understanding of Satisfaction with the Process and Outcomes of Teamwork," *Journal of Management Information Systems*, Vol. 19, No. 4: 65-83, 2003.
- Scheepers, R., Scheepers, H., and Ngwenyama, O.K. "Contextual Influences on User Satisfaction with Mobile Computing: Findings from Two Healthcare Organizations," *European Journal of Information Systems*, Vol. 15, No. 3: 261-268, 2006.
- Shen, X.-L., Sun, Y., and Wang, N. "Recommendations from Friends Anytime and Anywhere: Toward a Model of Contextual Offer and Consumption Values," *Cyberpsychology, Behavior, and Social Networking*, Vol. 16, No. 5: 349-356, 2013.
- Shen, X.-L., Zhang, K.Z.K., and Zhao, S.J. "Herd Behavior in Consumers' Adoption of Online Reviews," *Journal of the Association for Information Science and Technology*, Forthcoming.
- Sia, C.L., Lim, K.H., Leung, K., Lee, M.K.O., Huang, W.W., and Benbasat, I. "Web Strategies to Promote Internet Shopping: Is Cultural-Customization Needed?," *MIS Quarterly*, Vol. 33, No. 3: 491-512, 2009.
- Solberg, C.A. "Standardization or adaptation of the international marketing mix: the role of the local subsidiary/representative," *Journal of International Marketing*, Vol. 8, No. 1: 78-98, 2000.
- Spiro, R.L., and Weitz, B.A. "Adaptive Selling: Conceptualization, Measurement, and Nomological Validity," *Journal of Marketing Research*, Vol. 27, No. 1: 61-69, 1990.
- Spreng, R.A., and Mackoy, R.D. "An Empirical Examination of a Model of Perceived Service Quality and Satisfaction," *Journal of Retailing*, Vol. 72, No. 2: 201-214, 1996.
- Sun, Y., Fang, Y., and Lim, K.H. "Understanding Knowledge Contributors' Satisfaction in Transactional Virtual Communities: A Cost-Benefit Tradeoff Perspective," *Information & Management*, Vol. 51, No. 4: 441-450, 2014a.

- Sun, Y., Lim, K.H., Jiang, C., Peng, J.Z., and Chen, X. "Do Males and Females Think in the Same Way? An Empirical Investigation on the Gender Differences in Web Advertising Evaluation," *Computers in Human Behavior*, Vol. 26, No. 6: 1614-1624, 2010.
- Sun, Y., Wang, N., Guo, X., and Peng, Z. "Understanding the Acceptance of Mobile Health Services: A Comparison and Integration of Alternative Models," *Journal of Electronic Commerce Research*, Vol. 14, No. 2: 183-200, 2013.
- Sun, Y., Wang, N., Shen, X.-L., and Zhang, X. "Location Information Disclosure in Location-Based Social Networking Services: Privacy Calculus, Benefit Structure, and Gender Difference," *Computers in Human Behavior*, Vol. 52, No.: 278-292, 2015.
- Sun, Y.Q., Shen, X.L., and Wang, N. "Understanding the role of consistency during web-mobile service transition: Dimensions and boundary conditions," *International Journal of Information Management*, Vol. 34, No. 4: 465-473, 2014b.
- Szymanski, D.M., Bharadwaj, S.G., and Varadarajan, P.R. "Standardization versus Adaptation of International Marketing Strategy: An Empirical Investigation," *Journal of Marketing*, Vol. 57, No. 4: 1-17, 1993.
- Tarasi, C.O., Bolton, R.N., Gustafsson, A., and Walker, B.A. "Relationship Characteristics and Cash Flow Variability Implications for Satisfaction, Loyalty, and Customer Portfolio Management," *Journal of Service Research*, Vol. 16, No. 2: 121-137, 2013.
- Theodosiou, M., and Leonidou, L.C. "Standardization versus Adaptation of International Marketing Strategy: An Integrative Assessment of the Empirical Research," *International Business Review*, Vol. 12, No. 2: 141-171, 2003.
- Trimi, S., and Sheng, H. "Emerging Trends in M-government," *Communications of the ACM*, Vol. 51, No. 5: 53-58, 2008.
- Valvi, A.C., and West, D.C. "E-Loyalty Is not All about Trust, Price also Matters: Extending Expectation - Confirmation Theory in Bookselling Websites," *Journal of Electronic Commerce Research*, Vol. 14, No. 1: 99-123, 2013.
- Vargo, S.L., and Lusch, R.F. "The four service marketing myths remnants of a goods-based, manufacturing model," *Journal of Service Research*, Vol. 6, No. 4: 324-335, 2004.
- Venkatesh, V., Morris, M., Davis, G.B., and Davis, F.D. "User Acceptance of Information Technology: Toward a Unified View," *MIS Quarterly*, Vol. 27, No. 3: 425-478, 2003.
- Venkatesh, V., Thong, J., and Xu, X. "Consumer Acceptance and Use of Information Technology: Extending the Unified Theory of Acceptance and Use of Technology," *MIS Quarterly*, Vol. 36, No. 1: 157-178, 2012.
- Wakefield, R.L., and Whitten, D. "Mobile Computing: A User Study on Hedonic/Utilitarian Mobile Device Usage," *European Journal of Information Systems*, Vol. 15, No. 3: 292-300, 2006.
- Wang, N., Shen, X.-L., and Sun, Y. "Transition of electronic word-of-mouth services from web to mobile context: A trust transfer perspective," *Decision Support Systems*, Vol. 54, No. 3: 1394-1403, 2013.
- Wang, N., and Sun, Y. "Social Influence or Personal Preference? Examining the Determinants of Usage Intention across Social Media with Different Sociability," *Information Development*, Forthcoming.
- Weiser, E.B. "Gender differences in Internet use patterns and Internet application preferences: A two-sample comparison," *CyberPsychology and Behavior*, Vol. 3, No. 2: 167-178, 2000.
- Yu, C.-S. "Factors Affecting Individuals to Adopt Mobile Banking: Empirical Evidence from the UTAUT Model," *Journal of Electronic Commerce Research*, Vol. 13, No. 2: 104-121, 2012.
- Yun, H., Han, D., and Lee, C.C. "Understanding the Use of Location-based Service Applications: Do Privacy Concerns Matter?," *Journal of Electronic Commerce Research*, Vol. 14, No. 3: 215-230, 2013.
- Zhan, L., Sun, Y., Wang, N., and Zhang, X. "Understanding the Influence of Social Media on People's Life Satisfaction through Two Competing Explanatory Mechanisms," *Aslib Journal of Information Management*, Vol. 68, No. 3: 347-361, 2016.

Appendix A. Measures

Intention to Use: Adapted from Kim and Han (2009)

- INTU1. I intend to use mobile Dianping.com in the future.
- INTU2. I expect that I would use mobile Dianping.com in the future.
- INTU3. I plan to use mobile Dianping.com in the future.

Satisfaction: Adapted from Bhattacharjee (2001)

How do you feel about your overall experience of [use of mobile version of Dianping.com]?

- SAT1. Very dissatisfied/very satisfied
- SAT2: Very displeased/very pleased
- SAT3: Very frustrated/very contented
- SAT4: Absolutely terrible/absolutely delighted

Perceived Consistency: Developed

- PC1. The operations of web and mobile Dianping.com are very close.
- PC2. Users can operate the web and mobile Dianping.com in similar way.
- PC3. The operations for the web and mobile Dianping.com are consistent.
- PC4. There is no significant difference between the operations of the web and mobile Dianping.com.

Perceived Adaptability: Adapted from Spiro and Weitz (1990)

- PA1. The change in the design of web and mobile Dianping.com is to better adapt to the characteristics of cell phone.
- PA2. The mobile Dianping.com is different from the web Dianping.com because the special characteristics of cell phone call for it.
- PA3. The difference between the web and mobile Dianping.com is induced by the difference in the application context.

Appendix B. Path coefficient comparison method (Sia et al. 2009)

$$S_{pooled} = \sqrt{\{[(N_1 - 1)^2 / (N_1 + N_2 - 2)] \times SE_1^2 + [(N_2 - 1)^2 / (N_1 + N_2 - 2)] \times SE_2^2\}}$$

$$t = (PC_1 - PC_2) / [S_{pooled} \times \sqrt{(1/N_1 + 1/N_2)}]$$

Where S_{pooled} = pooled estimator for the variance

t = t-statistic with $N_1 + N_2 - 2$ degrees of freedom

N_i = sample size of dataset for group i

SE_i = standard error of path in structural model of group i

PC_i = path coefficient in structural model of group