August 2021;6(1):49-59
http://dx.doi.org/10.20522/APJBR.2021.6.1.49

The Effect of Characteristics of Mobile Shopping on Perceived Value and Intention to Use

Jong Lak Kim*
Department of Distribution Management, Jangan University, Korea.

ABSTRACT

This study was conducted to explore the causal relationship between the characteristics of mobile shopping mall use and the effect on the intention to use mobile shopping malls through perceived value (hedonic value and utilitarian value). Specifically, this study defined the usage characteristics of mobile shopping malls as accessibility, convenience, and enjoyment, respectively, and attempted to explain the relationship on the intention of use through perceived value.

The research results are as follows. First, it was found that enjoyment had a positive (+) effect on hedonic value. However, it was found that convenience did not affect hedonic value. On the other hand, contrary to expectations, accessibility was found to have a negative (-) effect on hedonic value. Second, it was found that accessibility and convenience had a positive (+) effect on utilitarian value. However, it was found that pleasure did not affect utilitarian value. Third, it was found that utilitarian value had a positive (+) effect on the intention to use mobile shopping, while hedonic value did not affect the intention to use mobile shopping. Through this, it is meaningful to provide mobile shopping users with solutions to improve their restrictions in the shopping process.

Keywords Mobile Shopping, Accessibility, Convenience, Enjoyment, Perceived Value, Intention to Use

*Corresponding author: prise97@jangan.ac.kr

1. Introduction

Mobile shopping has a disadvantage that it is difficult for consumers to choose optimal alternatives by reducing control over information compared to PC-based online shopping due to its small screen and simple operation, but unlike PC-based shopping, mobile shopping can be conveniently purchased at any time and place and immediately responded to promotions and discount events.

As an expanded form of e-commerce, mobile commerce is recognized as a separate channel in modern business that can ensure convenience and accessibility to a large number of customers while providing various values (Balasubramanian et al., 2002).

Various studies have been conducted on the characteristics of mobile shopping (Durlacher Research, 1999; Siau et al., 2001), suggesting ubiquity, accessibility, security, convenience, location verification, immediate accessibility, flexibility, transfer, and personalization. Siau et al. (2001) suggested four different characteristics of existing e-commerce and mobile shopping: ubiquity, personalization, flexibility, and transfer. Choi et al. (2016) mentioned mobile service characteristics in four ways: economic feasibility, mobility, which enables real-time service regardless of time and location, convenience to support service efficiency and time saving, and interaction between users.

This study classified the characteristics of mobile shopping into accessibility, enjoyment, and convenience, and examined the effect of the characteristics of each mobile shopping on perceived value (hedonic value and utilitarian value). Furthermore, the effect of these perceived values on the intention to use mobile shopping was examined.

2. Literature Review and Hypothesis

2.1 Characteristic of mobile shopping

The characteristics of mobile shopping include seven things: ubiquity, accessibility, security, convenience, localization, instant connectivity, and personalization (Durlacher Research, 1999). Unusuality refers to the characteristics of searching for information in real time anywhere, accessibility to the Internet anytime, anywhere, security and safety guarantees security, convenience is portable and easy to use, location verification shows where users are located at a specific point in time, and personalization provides differentiated services tailored to users.

In addition, many of the mobile commerce characteristic factors described by Müller-Verse (1999) are cited as currently available service factors, such as ubiquity, accessibility, security, convenience, localization, and immediate personalization as future services. Clarke (2001) proposed ubiquity, personalization, localization, and convenience.

In addition, the characteristic of mobile sopping is that it can access or utilize information anywhere, anytime through a mobile device, provide all actions and possibilities that occur between two or more people, and purchase products and location services at low prices through mobile social commerce sites (Turel & Serenko, 2006). This study classified the characteristics of mobile shopping into accessibility, enjoyment, and convenience.

2.2 Perceived value

Perceived value refers to the value perceived by consumers subjectively from the perspective of consumers. Looking at the definition of perceived value, Zeithaml (1988) sees it as an exchange relationship with profits or utility obtained in the process of acquiring a product, explains the value perceived by consumers, is a low price, what I want in service, and the quality I get compared to the price I paid. Woodruff (1997) stated that it is an evaluation or preference perceived by consumers for a product or service that meets the purpose of obtaining through the use of products and services and the needs of customers.

Han et al. (2013) found that perceived quality, perceived usefulness, perceived playfulness, technical effort, perceived cost, and security risk were set and analyzed as factors influencing perceived value, and perceived value affects perceived value.

The perceived value in the mobile shopping situation can be said to be an overall evaluation of the product or service provided by consumers when purchasing products using a mobile shopping mall, and the effectiveness of the use process (Chae, 2017). In order to grasp the needs and satisfaction of consumers in mobile distribution situations, it is necessary to grasp the value perceived by consumers, and identifying the factors affecting the perceived value will help implement strategies to increase customer value.

According to Babin et al. (1994), shopping value is classified into a utilitarian value that prioritizes the importance of practical effects such as price, information, convenience, and service, and a hedonic value that values pleasure, interest, and fun through shopping of consumers. Utilitarian value is what consumers plan and purchase in an effective way, and can be obtained through the pursuit of the economic feasibility of time, effort, and monetary value and the acquisition of information or knowledge of the product to be purchased (Engel et al., 1995).

On the other hand, hedonic value means perceiving that the emotional form experienced through shopping as well as the effect of the purpose of purchasing products is valuable, and that the value of subjective, personal, fun, and enjoyment is perceived rather than practical value (Holbrook & Hirschman, 1982; Maclnnis & Price, 1987). This study aims to examine perceived values by dividing them into practical values and hedonic values. Therefore, the following hypothesis was established.

H1: Accessibility has a positive impact on hedonic value.
H2: Enjoyment has a positive impact on hedonic value.
H3: Convenience has a positive impact on hedonic value.
H4: Accessibility has a positive impact on utilitarian value.
H5: Enjoyment has a positive impact on utilitarian value.
H6: Convenience has a positive impact on utilitarian value.

2.3 Intention to use

Bhatcherjee (2001) stated that the intention of continuous use was intended to continue to use the system after the user first attempted a particular system, and Kumar et al. (2004) stated that the intention of continuous use was intended to continue to use the current service.

Lu and Hsiao (2010) argued that the perceived value of the user directly affects satisfaction and payment behavior intention, and that perceived value is formed by four values: performance/ quality value (i.e., functional value), emotional value, social value, and monetary value. Jeong (2012) found that there is a strong relationship between perceived information quality and smartphone users' intention to use mobile shopping malls. Therefore, the following hypothesis was established.

H7: Hedonic value has a positive impact on intention to use.
H8: Utilitarian value has a positive impact on intention to use.

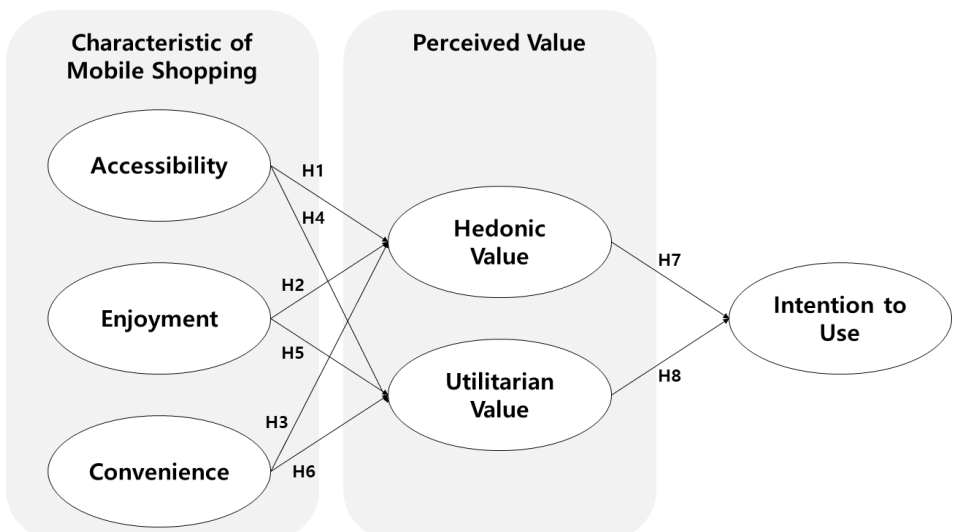

Figure 1. Research Model

3. Results

3.1. Samples

A survey was conducted on customers who had experience using mobile shopping in the metropolitan area, and a total of 284 people participated in the survey. SPSS 26.0 was used for descriptive statistics, reliability and validity verification, correlation analysis, and regression analysis of the collected data. Looking at the demographic characteristics of the sample, 180 (63.4%) were women, more than 104 (36.6%) were men, followed by 203 (71.5%) in their 30s, 51 (18.0%) in their 20s, and 30 (10.6%) in their 40s. Monthly income was 35 people (12.3%) with less than 2 million won, 59 people with 2 to 3 million won (20.8%), 142 people with 3 to 4 million won (50%), 40 people with 4 to 5 million won (14.1%), and 8 people with 5 million won or more (2.8%). The main type of shopping was 172 mobile (60.6%), followed by 57 offline (20.1%) and 55 PC (19.4%). Finally, the average number of shopping per month was 139 (48.9%), followed by 119 (41.9%) 6-10 times, 15 (3.3%) more than 10 times, and 11 (3.9%) once and twice.

3.2 Reliability and validity analysis

Measurement reliability reflects the stability of individual measurement items across replications from the same source of information. It was assessed by Cronbach's α. All coefficients for the six constructs were above 0.7, indicating a reasonable level of reliability, shows as <Table 1>.

For validity analysis, an exploratory factor analysis of the attribute was conducted. Principal component analysis was used with varimax rotation. Based on an eigenvalue cutoff of 1 and a scree plot, a total of six factors were interpreted. KMO test scored a value of 0.881 within the allowed range from 0.5 to 1 and The Bartlett's Test of sphericity was tested through Chi-Square value 5232.553 (df=276) significant at 1% level of significance. As shown <Table 2>, factor loading of observed variables are all greater than 0.5 thus all variables were confirmed validity.

Table 1. Reliability test

Factor	Meaurement items	Cronbach's α
ACC1	I think shopping malls visited using smartphones are convenient to move to other product links.	0.826
ACC2	I don't think it's difficult to use shopping malls that you visit using smartphones.	
ACC3	I think shopping malls that visit using smartphones respond quickly to my commands (click, touch, etc).	
ACC4	Overall, I think mobile shopping malls are easy to access and use.	

Factor	Meaurement items	Cronbach's α
ENJ1	I think it's fun to hear explanations about products at shopping malls I visited using my smartphone.	0.901
ENJ2	I think it is interesting when I hear explanations about products at shopping malls I visited using smartphones.	
ENJ3	I think the screen configuration (GUI and display screen) is interesting in the shopping mall visited using a smartphone.	
ENJ4	Overall, I think shopping malls I visited using smartphones have the pleasure of using them.	
CNV1	I think it is convenient to access explanations of products at shopping malls that I visited using smartphones.	0.884
CNV2	I think it is easy to use mobile coupons or gifticons at shopping malls that I visited using smartphones.	
CNV3	I think it is convenient to pay for purchased products at shopping malls that I visited using smartphones.	
CNV4	Overall, I think shopping malls visited using smartphones are convenient.	
HEV1	Mobile shopping is not because I have to buy a product, but because I enjoy it.	0.905
HEV2	The time to use mobile shopping is really fun.	
HEV3	While buying products through mobile shopping, I can forget my worries.	
HEV4	I can feel an exciting shopping atmosphere through mobile shopping.	
UTV1	I can see various products in a short time on mobile.	0.857
UTV2	If I use mobile, I could shop economically.	
UTV3	Mobile shopping provides valuable and important product information to me.	
UTV4	Using a mobile shopping mall saves time and effort, making it convenient and practical.	
INU1	I am willing to purchase goods through mobile shopping using smartphones in the future.	0.905
INU2	In the near future, I am planning to purchase goods through mobile shopping using a smartphone.	
INU3	I plan to gradually increase the number of purchases made through mobile shopping using smartphones.	
INU4	I am willing to purchase items through smartphone mobile shopping even if there is some inconvenience caused by using a smartphone.	

Note: ACC = accessibility, ENJ = enjoyment, CNV = convenience, HEV = hedonic value, UTV = utilitarian value, INU = intention to use

Table 2. Exploratory factor analysis and reliability analysis

Factor labels	Factor loading					
	1	2	3	4	5	6
ACC1	.526	-.209	.488	.211	.126	.153
ACC2	.572	-.168	.407	.485	.004	.049
ACC3	.563	-.161	.545	.325	.102	.049
ACC4	.446	-.120	.533	.262	-.030	-.078
ENJ1	.451	.670	.241	-.234	-.226	-.018
ENJ2	.623	.462	.247	-.198	-.213	-.069
ENJ3	.253	.772	.265	-.115	-.235	-.121
ENJ4	.511	.653	.156	-.088	-.301	-.226
CNV1	.739	-.202	.173	-.318	.170	.046
CNV2	.670	-.261	.055	-.354	.183	.113
CNV3	.678	-.244	.156	-.396	.140	.214
CNV4	.724	-.126	.053	-.449	.170	.012
HEV1	.353	.599	-.224	.112	.360	.232
HEV2	.228	.847	-.126	.112	.102	.042
HEV3	.180	.833	-.167	.175	.265	.077
HEV4	.391	.726	-.202	.113	.288	.109
UTV1	.693	-.285	-.159	.030	.263	-.214
UTV2	.658	-.263	-.263	.108	.082	-.376
UTV3	.757	.054	-.289	.113	.113	-.357
UTV4	.708	-.248	-.190	.100	.108	-.218
INU1	.749	-.193	-.289	.057	-.378	.047
INU2	.743	-.292	-.311	.061	-.320	.148
INU3	.680	.030	-.328	.223	-.321	.300
INU4	.731	-.246	-.310	.072	-.136	.213
Eigen value	3.304	3.250	3.198	3.165	2.831	2.618
Variance explained(%)	13.767	13.540	13.325	13.187	11.794	10.907
Cronbach's α	0.826	0.901	0.884	0.905	0.857	0.905

Note: ACC = accessibility, ENJ = enjoyment, CNV = convenience, HEV = hedonic value, UTV = utilitarian value, INU = intention to use

3.3 Correlation analysis

Correlation coefficients showed that the relationships between dependent variables and independent variables all have statistical meaning except between convenience and hedonic value. The magnitude of the correlation coefficients ensures no multicollinearity phenomenon. <Table 3> indicated the results of correlation analysis and descriptive statistics of all variables.

Table 3. Correlation analysis and descriptive statistics

	1	2	3	4	5	6
1. ACC	1					
2. ENJ	.234	1				
3. CNV	.504	.265	1			
4. HEV	-.002	.614	.036	1		
5. UTV	.458	.170	.642	.138	1	
6. INU	.399	.214	.586	.109	.713	1
M	4.093	2.931	3.863	2.324	3.715	3.636
SD	.724	.865	.918	.968	.854	.934

Note: ACC = accessibility, ENJ = enjoyment, CNV = convenience, HEV = hedonic value, UTV = utilitarian value, INU = intention to use

3.4 Hypothesis testing

Regarding enjoyment towards hedonic value, the values of β = .742 and t = 13.750 (p < .01) support H2 that enjoyment positively affects the hedonic value of mobile shoppers. On the other hand, it was hypothesized that accessibility had a positive impact on hedonic value, but the results (β = -.154, t = -2.145, p < .05) had a negative impact on hedonic value. Therefore, it did not support H1. Also, convenience did not have a positive impact on hedonic value (β = -.086, t = -1.510, p > .10), it did not support H3.

Regarding accessibility towards utilitarian value, the values of β = .215 and t = 3.487 (p < .01) support H4 that accessibility positively affects the utilitarian value of mobile shoppers. Also, convenience has a positive impact on utilitarian value (β = .517, t = 10.540, p < .01), it supported H6. On the other hand, it was hypothesized that enjoyment has a positive impact on utilitarian value, but the results (β = -.020, t = -.437, p > .10) did not support H5.

In support of H6, the analysis shows consistent positive impact (β = .778, t = 16.848, p < .01) of utilitarian toward intention to use. However, hedonic value did not have a positive impact on

intention to use (β = .010, t = .250, p > .10), it did not supported H5.

Following Preacher and Hayes (2008) recommendations for testing multiple mediators, we used bootstrapping methods (5,000 bootstraps, 95% CI). In particular, to test the mediation effect, we used Preacher et al. (2007) procedure (model 4) and computed bias-corrected bootstrap confidence intervals. If the bootstrapped confidence interval does not include 0, the indirect effect is significant and mediation is supported.

Hedonic value was not mediated between accessibility and intention to use (indirect effect = .004, 95% CI = -.011 to .032), and between enjoyment and intention to use (indirect effect = -.017, 95% CI = -.102 to .061), and between convenience and intention to use (indirect effect = .002, 95% CI = -.006 to .023). Utilitarian value was mediated between accessibility and intention to use (indirect effect = .135, 95% CI = .034 to .250), and between convenience and intention to use (indirect effect = .323, 95% CI = .237 to .433), while utilitarian value was not mediated between enjoyment and intention to use (indirect effect = -.013, 95% CI = -.075 to .049).

Table 4. The results of regression analysis

	Dependent variables							
	INU		HEV		UTV		INU	
	β	*t*	β	*t*	β	*t*	β	*t*
(Constant)	.795	2.853***	1.116	4.002***	.896	3.749***	.260	1.052
ACC	.170	2.370**	-.154	-2.145**	.215	3.487***	.032	.511
ENJ	.053	.978	.742	13.750***	-.020	-.437	.082	1.367
CNV	.515	9.008***	-.086	-1.510	.517	10.540***	.190	3.240***
HEV							-.023	-.435
UTV							.625	10.286***
F	52.484***		63.301***		72.427***		65.506***	
R^2	.360		.404		.437		.541	

*p<.10, **p<.05, ***p<.01

Note: ACC = accessibility, ENJ = enjoyment, CNV = convenience, HEV = hedonic value, UTV = utilitarian value, INU = intention to use

4. Conclusions

This study classified the characteristics of mobile shopping into accessibility, enjoyment, and convenience, and examined the effect of the characteristics of each mobile shopping on perceived value (hedonic value and utilitarian value). Furthermore, the effect of these perceived values on the intention to use mobile shopping was examined.

The summary of the results of this study is as follows. First, it was found that enjoyment had a positive (+) effect on hedonic value. However, it was found that convenience did not affect hedonic value. On the other hand, contrary to expectations, accessibility was found to have a negative (-) effect on hedonic value. It seems necessary to consider whether the reason why accessibility has a negative effect on hedonic value is that link access speed is not satisfactory or aesthetic elements are insufficient in the process of accessing desired shopping malls or products in a mobile shopping environment. Therefore, mobile shopping managers should work on ways to improve accessibility and maximize enjoyment by considering aesthetic and entertainment factors together.

Second, it was found that accessibility and convenience had a positive (+) effect on utilitarian value. However, it was found that pleasure did not affect utilitarian value. This is believed to be due to the inability to design a satisfactory customer experience because the pleasure in the mobile shopping environment was simply biased toward aesthetic factors. Therefore, it is suggested that mobile shopping managers need to design UI/UX in consideration of not only aesthetic elements but also practical aspects.

Third, it was found that utilitarian value had a positive (+) effect on the intention to use mobile shopping, while hedonic value did not affect the intention to use mobile shopping. This means that mobile shopping customers still perceive value in practical areas such as price comparison, product evaluation, and product description in mobile shopping, but are not aware of hedonic values such as pleasure, excitement, and fun in the shopping process. Therefore, mobile shopping managers need to seek marketing measures that allow customers to perceive hedonic values in addition to utilitarian values.

This study has the following limitations. First, this study examines the characteristics of mobile shopping by dividing it into accessibility, enjoyment, and convenience. However, there are various other factors in the characteristics of mobile shopping. Therefore, in future studies, it is necessary to consider the characteristics of various mobile shopping. Second, the number of samples required in this study was somewhat insufficient, and sex, income, regional deviations were not considered. If these points are supplemented and the research is expanded in the future, it is expected that more meaningful results can be derived for mobile shopping intention to use.

Received 15. May. 2021, **Revised** 10. June. 2021, **Accepted** 15. June. 2021

References

Babin, B. J., Darden, W. R., & Griffin, M. (1994), "Work And/or Fun: Measuring Hedonic and Utilitarian Shopping Value," *Journal of Consumer Research,* 20(4), 644-656.

Balasubramanian, S., Peterson, R. A. & Jarvenpaa, S. L. (2002), "Exploring the Implications of m-Commerce for Market and Marketing," *Journal of the Academy of Marketing Science,* 30, 348-361.

Bhattacherjee, A. (2001), "An Empirical Analysis of The Antecedents of Electronic Commerce Service Continuance," *Decision Support Systems,* 32(2), 201-214.

Chae, J. M. (2017), "Fashion Shopping Orientation, Mobile Shopping Characteristics, Perceived Value, and Mobile Purchase Experience in Maleconsumers Mobile Fashion Shopping," *Journal of the Korea Fashion & Costume Design Association,* 19(1), 107-120.

Choi, Min-seo, Hur, Kyung-Suk, Byun, & Jeoung-Woo (2016), "The mobile service characteristics study on consumption value and consumer impulse buying: Focused on mobile Accommodation App," *Journal of Tourism and Leisure Research,* 28(5), 185-203.

Durlacher Research.(1999), UMTS Report.

Engel, J. F., Blackwell, R. D., & Miniard, P. W. (1995). *Consumer Behavior (8th).* New York: Dryder.

Han, J. H., Kang, S. B., & Moon, T. S. (2013), "An Empirical Study on Perceived Value and Continuous Intention to Use of Smart Phone, and the Moderating Effect of Personal Innovativeness", *Asia Pacific Journal of Information Systems,* 23(4), 53-84.

Holbrook, M. B., & Hirschman, E. C. (1982), "The Experiential Aspects of Consumption: Consumer Fantasies, Feelings, and Fun," *Journal of Consumer Research,* 9(2), 132-140.

Jeong, W. J. (2012), "The Effects of Perceived Information Quality of Mobile Shopping Malls on Smartphone Users' Intention to Use the Shopping Malls," *The Journal of Information Systems,* 21(3), 71-97.

Kumar, A., Adlakaha, A., & Mukherjee, K. (2018), "The Effect of Perceived Security and Grievance Redressal on Continuance Intention to Use M-wallets in a Developing Country," International Journal of Bank Marketing, 36(7), 1170-1189.

Lu, H. P., & Hsiao, K. L. (2010), "The Influence of Extro/introversion on The Intention to Pay for Social Networking Sites," *Information & Management,* 47(3), 150-157.

Maclnnis, D. J., & L.,I. Price. (1987), "The Role of Imaginary in Information Processing: Review and Extensions," *Journal of Consumer Research,* 13(3), 473-491

Müller-Verse, F. "Mobile Commerce Report," Durlacher Research Ltd., London, UK, 1999.

Siau, K., Lim, E. P. & Shen, Z (2001), "Mobile Commerce: Promises, Challenges, and Research Agenda," *Journal of Database Management,* 12(3)4-13.

Turel, O., & Serenko, A. (2006), "Satisfaction with Mobile Services in Canada: An Empirical Investigation," *Telecommunications policy,* 30(5-6), 314-331.

Woodruff, R. B. (1997). Customer value: The next source for competitive advantage. Journal of the Academy of Marketing Science, 25(2), 139-153

Zeithaml, V. A. (1988). Consumer perceptions of price, quality, and value: A means-end model and synthesis of evidence. Journal of Marketing, 52(3), 2-22.