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A Study of Perceived Value and Intention to Continue Using an Travel Products Distribution Mobile App Based on the Value-Based Adoption Model (VAM)*

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Abstract

Purpose: The study aims to examine the factors affecting the intention to continue using travel product mobile apps by utilizing the Value-based Adoption Model. By verifying the influence relationship between perceived benefits, perceived risks, perceived value, satisfaction, and intention to continue using travel product mobile apps, this study aims to reveal factors that can improve the quality of relationship with consumers from the service perspective rather than the technical acceptance of travel product mobile apps and suggest practical solutions for mobile apps. **Research design, data and methodology:** This study targeted people in their 20s to 40s who are likely to use travel-related mobile apps. The study was conducted over of approximately two months from April 1 to May 30, 2025, and a total of 274 answers were used for statistical analysis. **Results:** The results showed that enjoyment and usefulness cause a positive (+) effect on perceived value, while perceived risk had a negative (-) effect on perceived value, and technical stress had no effect on perceived value. Perceived value was found to cause a positive effect on satisfaction and to play a complete mediating role in the intention to continue using the product. **Conclusion:** It is necessary to establish specific, actionable strategies to connect the value that customers perceive with satisfaction. It would be useful to classify customers according to their satisfaction levels, build personalized services based on satisfaction levels, and develop a system that can measure satisfaction in real time.

Keywords: Travel Products Distribution, Mobile Apps, Perceived Benefits, Perceived Risks, Perceived Value, Satisfaction, Continuous Use Intention, VAM (Value-Based Adoption Model)

JEL Classification Code D30, L81, M15, M31, P41

1. Introduction

The popularization of smartphones due to the development of ICT and mobile technology is changing the media environment and communication methods of modern people. According to the Korea Tourism Organization the proportion of online distribution channels in the global tourism industry is expected to expand to 72% by 2025, and the growth of online platforms that relay travel products and

services will have the greatest impact, reaching 89.8% by 2027. In line with this trend, mobile apps for purchasing various tourism products are striving to provide new services to attract and retain customers and actively develop them by identifying consumer needs.

The use of mobile apps to purchase travel products has changed the overall market distribution flow of the tourism industry and laid the foundation for travelers to book travel products more quickly and conveniently (Kim et al., 2010).

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As the market flow of travel product distribution is subject to rapid technological changes and instantaneous purchases can be made using mobile apps, it is timely to study the consumer acceptance of mobile app services.

Therefore, along with the active provision of mobile app services, many researchers have been conducting ongoing research to prove the usefulness of the information provided by mobile apps from the customer's perspective and to analyze their impact on customer satisfaction and loyalty. As the development of ICT technology and mobile apps has changed the travel industry and airline services, various studies on technology acceptance have been conducted.

The existing studies have been conducted from a positive perspective of technology acceptance by applying the Technology Acceptance Model (TAM), which focuses on the usefulness and ease of use that consumers can obtain by accepting new technologies. However, in recent years, the Value Adoption Model (VAM), which is proposed to compensate for the limitations of the Technology Acceptance Model (TAM), has been actively researched in studies related to the acceptance of mobile services provided in an ICT environment.

The Value based Adoption Model (VAM) reveals the relationship between perceived value and acceptance intention as antecedent variables, not only the benefits that users can get from adopting a new technology but also the risks they have to take in the process (Kim et al., 2007).

This study differs from many existing studies on the benefits of technology acceptance of mobile apps in that it seeks to identify not only perceived positive affect but also perceived risk, perceived value, satisfaction, and intention to continue using the technology. In addition, it is meaningful to apply the Value-based Adoption Model to study mobile apps related to travel products, which are continuously developing in recent years.

Therefore, this study targets to analyze the factors that affect the intention to continue using travel product mobile apps by utilizing the Value-based Adoption Model. By verifying the influence relationship between perceived benefits, perceived risk, perceived value, satisfaction, and intention to continue using travel product mobile apps, this study aims to reveal factors that can improve the quality of relationship with consumers from the service perspective rather than the technical acceptance of travel product mobile apps and suggest practical solutions for mobile apps.

2. Review of Previous Studies

2.1. Value based Adoption Model (VAM)

The Value based Adoption Model (VAM) is a theory that explains the intention to accept technology and services based

on Zeithaml's (1988) theory of perceived value. The Value based Adoption Model (VAM) was designed by Kim et al. (2007) to complement the Technology Acceptance Model (TAM) of Davis et al. (1989), which was deemed to have limitations in explaining the intention to accept ICTs with technology quality and user attitude variables.

VAM differs from TAM in that it seeks to find the intention to accept and antecedents of acceptance among individuals who consume various services such as mobile shopping, Internet banking, and IPTV that have emerged in the new ICT environment.

Many studies have been done to verify the factors that impact the adoption and use of new technologies, most of these studies have focused on the benefits or positive aspects of the technology for consumers. However, studies applying the VAM model have been conducted considering not only the benefits of technology users but also the risks and sacrifices. It is a balanced analysis model that considers the benefits of accepting and using new technologies and the risks and sacrifices that may be made in the process.

2.2. Perceived Benefits

Peter and Olson (1987) defined 'benefits' as the subjective rewards and expectations that customers want and expect from using a product. Perceived benefits are positive outcomes, either physical or emotional, that consumers perceive and are an important factor in making them feel valued for a service or purchased product (Damnjanović et al., 2018).

Recently, VAM model has been utilized in many consumer-focused studies on information technology acceptance. In the VAM model, perceived enjoyment and perceived usefulness are used as the main constructs of perceived benefits and have been actively used in various studies on acceptance intention (Van der Heijden, 2004).

Perceived usefulness is defined as the degree to which a person believes that the technology they use will improve their job performance (Davis, 1989). This means that users who believe that a membership service is useful perceive it to be more practical to use than they did before using the membership service. Perceived usefulness is what drives users to make choices about technology adoption behaviors (Venkatesh & Davis, 2000). Enjoyment is measured by the positive or negative reactions people have to an experience (Eroglu et al., 2003).

2.3. Perceived Risks

Customers of technology services think about the benefits they receive when they purchase products and services, but they also think about the risks they pay for. Although the dimensions of risk vary slightly, it generally involves both monetary and non-monetary components of using a product

or service, with the monetary component being the price the consumer actually pays for the product or service and the non-monetary component being the time and effort consuming behavior or unsatisfactory consumption (Kim et al., 2007). The complexity of using technology is one factor that hinders the acceptance of mobile and Internet technologies (Curran & Meuter, 2005) Even if the purchase of travel products through mobile apps is interesting to consumers and provides a convenient technology for purchasing products, if consumers feel irritated and dislike it, sales will decrease, and the stress they feel will affect their perception of value (Tsang et al., 2004). Wang and Wang (2010) found that concern about potential damages caused by leakage of personal information including location and payment information perceived by service users in mobile environments is a factor that negatively affects online services. Security risk is defined as the anxiety consumers feel from the possibility that their personal information could be misused while using technology (Dinev & Hart, 2006). If a person's location information is collected by others when using technology, and new information such as personal preferences and expected movements are arbitrarily generated based on the consumer's consumption patterns, serious privacy concerns can arise. These privacy concerns have a negative impact on consumer acceptance and use of technology (Dhar & Varshney, 2011).

2.4. Perceived Value

Zewthaml (1988) defined perceived value as the overall evaluation of what consumers get from a service or product based on their perceptions of what they are getting and what they are paying for. The higher the perceived value, the higher the product or brand satisfaction and loyalty, and consequently, it serves as a very important driving force to gain competitive advantage and increase market share (Ulaga & Chacour, 2001). Perceived value is a variable that can influence the intention to adopt a technology by applying the paradigm of benefits and risks, which includes the uncertain costs of the technology adoption process (Roostika, 2012). Perceived value in the VAM model refers to the overall evaluation made based on the adopter's perception of benefits and sacrifices, and based on this overall evaluation, technology adopters determine their acceptance and choice (Kim et al., 2007).

Chunxiang (2014), in a study of Chinese acceptance of mobile commerce, identified free connectivity, usefulness, and enjoyment as perceived benefits. The three elements of perceived benefits had a positive impact on perceived value, and the factors of perceived sacrifice had a negative effect on perceived value and trust, confirming the appropriateness of the VAM model. In a study by Shen et al. (2015), contextual availability of mobile service information

positively influenced utilitarian value, hedonic value, and social value.

Based on these previous studies, the following H1 hypothesis was set for this study.

H1: Perceived benefits of travel product distribution mobile apps will cause a positive effect on perceived value.

H1-1: Enjoyment of travel product distribution mobile apps will cause a positive effect on perceived value.

H1-2: Usefulness of travel product distribution mobile apps will cause a positive effect on perceived value.

Several studies have identified technology and cost as the most important barriers to mobile Internet adoption (Curran & Meuter, 2005; Vrechopoulos et al., 2002).

Chi et al. (2016) pointed to consumers' negative perceptions of O2O services as a stressor to technology acceptance during the shopping process, and Chunxiang (2014) found that Chinese mobile commerce users perceived negative value due to technicality and perceived cost. Shen et al. (2015) argued that consumers' perceived risk of personal information leakage and the indiscriminate provision of information that is unrelated to the consumer's intentions result in a decrease in overall shopping value.

Based on the above research, this study sets the following hypothesis as H2.

H2: Perceived risk of travel product distribution mobile apps will cause a negative effect on perceived value.

H2-1: Security risk of travel product distribution mobile apps will cause a negative effect on perceived value.

H2-2: Technostress of travel product distribution mobile apps will cause a negative effect on perceived value.

2.5. Satisfaction

Consumer satisfaction is influenced by various factors such as waiting time, service quality, staff responsiveness, menu variety, food price and quality, consistency, and ambiance (Parsa et al., 2012). Satisfaction, which is formed based on a consumer's previous experience of interacting with an online vendor or service provider, is a necessary condition to ensure a consumer's willingness to repurchase from the same vendor or to continue using the same service. Therefore, in order to maintain the intention of mobile service consumers to continue using mobile services, it is necessary to find factors that help create a strong bond between the consumer and the mobile service they are currently using (Wei et al., 2019). Wu and Li (2017) found that tourists' perceived value of cultural heritage experiences positively influenced their experience satisfaction.

Based on the above studies, the following H3 hypothesis is proposed in this study.

H3: Perceived value of travel product distribution mobile apps will cause a positive effect on satisfaction.

2.6. Continuous Use Intention

Continuous use intention is the willingness of a user to return to a particular product or service after using it, and it refers to the customer's experience with the service that determines whether or not they will continue to use the service (Venkatesh & Davis, 2000). Furthermore, it is the likelihood that a consumer will continue to use the current product or service provider repeatedly in the future (McDougall & Levesque, 2000).

In a VAM model study by Kim et al. (2007), perceived value to users was found to have a positive impact on intention to adopt mobile Internet. Kerviler et al. (2017) found that perceived value (utilitarian, hedonic, and symbolic) positively influenced the intention to use mobile payment services.

In this study, based on the above studies, the following hypothesis is set as H4.

H4: Perceived value of travel product distribution mobile apps will cause a positive effect on continuous use intention.

User satisfaction with the service is a major influence on the intention to continue using the service, especially in information systems research, where intention to continue has been recognized as the ultimate success of an information system (Bhattacharjee, 2001). Agrebi & Jallais (2015) verified that user satisfaction has a positive effect on continuance usage intention.

Based on these previous studies, the following hypothesis, H5, is proposed in this study.

H5: Satisfaction with travel product distribution mobile apps will cause a positive (+) effect on continuous use intention,

3. Research Design

3.1. Research Model and Samples

To test the hypotheses, this study aimed to determine the effects of perceived value on the sub-factors of perceived benefit, enjoyment and usefulness, and perceived risk, security risk and technology stress.

Furthermore, this study aimed to investigate the effects of perceived value on satisfaction and intention to continue using, and finally, the relationship between satisfaction and intention to continue using. For the purpose of this study, the research model is shown in Figure 1.

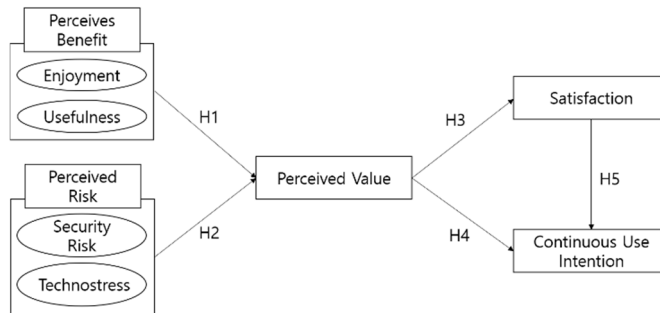


Figure 1: Research Model

The survey of this study was conducted on people in their 20s to 40s who are expected to use travel-related mobile apps.

The survey was conducted using an online questionnaire, and only users who have purchased travel products through mobile apps participated in the study. The study was performed over a period of approximately two months from April 1 to May 30, 2025, and a total of 282 questionnaires were collected, and after excluding eight insincere responses, a total of 274 questionnaires were used for statistical analysis.

3.2. Measurement of Variable

The variables of perceived benefit, perceived risk, perceived value, satisfaction, and intention to continue using a travel product distribution mobile app using the VAM model are conceptually organized as shown in the following Table 1 through previous studies.

The questionnaire of this study was constructed by applying the constructs of the VAM model, and the sub-concepts of perceived benefits, enjoyment and usefulness, and the sub-concepts of perceived risks, security risk and technology stress, were measured on a Likert 5-point scale after deriving three items for each variable from previous studies. Perceived value, satisfaction, and intention to continue using were all measured on a Likert 5-point scale after deriving three items each from previous studies.

The collected data were analyzed using SPSS24.0 statistical package program to conduct frequency analysis for demographic characteristics, reliability analysis, exploratory factor analysis and multiple regression analysis for hypothesis testing.

4. Results

4.1. Demographic Characteristics of the Sample

The status of information acquisition and demographic characteristics of the total 274 samples used in the empirical analysis of this study are shown in Table 2.

Table 1: Operational Definition of Variables

Factors		Definitions	References
Perceived Benefits	Enjoyment	The level of enjoyment user's experiences when purchasing a travel product	Agarwal & Karahanna (2000); Kim et al. (2007)
	Usefulness	The extent to which travel purchases made through mobile apps are useful for their purpose	Davis (1989); Venkatesh (2000); Kim et al. (2007)
Perceived Risks	Security risk	Concerns about the potential damage caused by leaked location, payment, and personal information	Tussyadiah, I. P. & Pesonen, J. (2016)
	Techno-stress	Negative perceptions of new technology as difficult or cumbersome to learn how to use	Kim et al. (2007)
Perceived Value		Evaluate the benefits and costs of purchasing travel	Blocker, C. P. (2011)
Satisfaction		Overall satisfaction with the recommendations	Parsa et al. (2012)
Continuous Use Intention		Willingness to continue using travel products via mobile app	Venkatesh, V., & Davis, F. D. (2000)

Table 2: Demographic Characteristics (n=274)

Classification		Person	Percentage (%)	Classification		Person	Percentage (%)
Gender	male	145	52.9	Age	20 years of age	300	57,8
	female	129	47.1		30 years of age	149	28.7
Academic background	College graduate	14	5.1		40 years of age	51	9.8
	Attending or graduated from college	210	76.7	Mainly used mobile apps	Travel agency app	66	24.1
	Graduate school or above	50	18,2	Hotels.com	31	11.3	
Occupation	Student	115	42.0	Agoda	26	9.5	
	Office work	51	18.6	My real trip	38	13.9	
	Self-employed	11	4.0	Yanolja	20	7.3	
	Service Industry	36	13.1	Yeogi.com	40	14.6	
	Professional	57	20.8	Etc.	48	17.5	
	Etc.	4	1.5	using apps per year	1-2 times	5	1.8
	-	-	-	1-2 times	86	31.4	
			3~4times	88	32.1		
			5~6times	53	19.3		

4.2. Validity and Reliability Analysis of Measurement

In this study, the construct validity of the measurement tool was evaluated through convergent validity, discriminant validity, and criterion validity, and internal consistency was evaluated based on Cronbach's α coefficient to assess the reliability of the measurement tool. To ensure construct validity and reliability, confirmatory factor analysis was performed using AMOS 18.0, and reliability analysis was performed using SPSS 18.0.

As shown in Table 3, the results of confirmatory factor analysis can be confirmed. The goodness of fit in this study was 541.885 (df=168, p=.000), indicating a poor fit. However, since this sensitivity to sample size and the number of observed variables precludes evaluating model fit

based solely on significance, we assessed model fit using various fit indices. Although the AGFI value fell below the benchmark, other values exceeded the benchmark, leading us to conclude that the model is appropriate (=541.8846 (df=168, p=.000), /df=3.226, RMR=.043, GFI=.917, AGFI=.828, NFI=.933, TLI=.915, CFI=.949, RMSEA=.087). In addition, all standardized factor loadings for the measurement items were above 0.5, and the average variance extracted (AVE) and conceptual reliability (CCR), which are methods of evaluating convergent validity proposed by Fornell and Larcker (1981), met the AVE > 0.5 and CCR > 0.7 criteria. This indicates that the measurement items in this study have sufficient convergent validity. Furthermore, the Cronbach's α coefficients for all constructs were very high, exceeding 0.9, confirming the reliability of the measurement elements chosen for this study.

Table 3: Confirmatory Factor Analysis

Measurement		Standardization coefficient load value	Std. error	C. R.	p	AVE	CCR	Cronbach's α
Enjoyment	Enjoyment1	.777	-	-	-	.517	.760	.745
	Enjoyment2	.774	.109	12.400	***			
	Enjoyment3	.591	.099	9.357	***			
Usefulness	Usefulness1	.765	-	-	-	.675	.861	.860
	Usefulness2	.892	.082	12.950	***			
	Usefulness3	.803	.088	13.561	***			
Security Risk	Security Risk1	.836	-	-	-	.769	.909	.907
	Security Risk2	.872	.064	17.596	***			
	Security Risk3	.920	.062	18.455	***			
Technostress	Technostress1	.814	-	-	-	.729	.880	.887
	Technostress2	.914	.070	16.714	***			
	Technostress3	.830	.072	15.482	***			
Perceived Value	Perceived Value1	.749	-	-	-	.658	.852	.845
	Perceived Value2	.823	.105	13.280	***			
	Perceived Value3	.858	.100	13.752	***			
Satisfaction	Satisfaction1	.651	-	-	-	.602	.817	.809
	Satisfaction2	.816	.101	11.256	***			
	Satisfaction3	.846	.105	11.545	***			
Continuous Use Intention	Continuous Use Intention1	.719	-	-	-	.711	.880	.868
	Continuous Use Intention2	.878	.086	13.90	***			
	Continuous Use Intention3	.920	.094	14.244	***			

$\chi^2=541.885(df=168, p=.000)$, /df=3.226, RMR=.043, GFI=.917, AGFI=.828, NFI=.933, TLI=.915, CFI=.949, RMSEA=.087

***: $p < .001$

Finally, the relationships between all latent variables were found to be less than 0.7 in absolute value, so there was no need to suspect multicollinearity, and the AVE values of all latent variables were larger than the square of the correlation between latent variables.

Therefore, it was determined that the discriminant validity between each construct was established.

Additionally, the directionality of the relationships between the constructs was found to be positive (+), consistent with the direction of the hypotheses set in this study, and thus the nomological validity was also deemed to be established.

Therefore, as shown in Table 4, the construct validity of the assessment tools used in this research was deemed to be sufficient.

Table 4: Results of Discriminant Validity and Legal Validity Verification

	Enjoyment	Usefulness	Security Risk	Technostress	Perceived Value	Satisfaction	Continuous Use Intention
Enjoyment	.517 ^a	.025 ^b	.001 ^b	.014 ^b	.023 ^b	.024 ^b	.008 ^b
Usefulness	.158	.675 ^a	.000 ^b	.020 ^b	.014 ^b	.018 ^b	.008 ^b
Security Risk	.024	-.008	.769 ^a	.002 ^b	.001 ^b	.003 ^b	.506 ^b
Technostress	-.120	-.142	.046	.729 ^a	.008 ^b	.019 ^b	.015 ^b
Perceived Value	.150	.118	-.026	-.088	.658 ^a	.021 ^b	.009 ^b
Satisfaction	.154	.133	-.059	-.139	.144	.602 ^a	.187 ^b
Continuous Use Intention	.092	.089	.711	-.124	.097	.125	.711 ^a

a: AVE, b: R^2

4.3. Hypothesis Verification

The results of the structural equation model analysis conducted to verify the hypothesis in this study are presented in Table 5. The value of 602.987 (df=182, p=.000), indicating a poor fit. However, since this sensitivity to sample size and the number of observed variables precludes evaluating model fit based solely on significance, we assessed fit using various measures. Although the AGFI value fell below the benchmark, other values exceeded the benchmark, leading us to conclude that the model is appropriate (=602.987 (df=182, p=.000), /df=3.313, RMR=.050, GFI=.905, AGFI=.8180, NFI=.926, TLI=.910, CFI=.943, RMSEA=.097).

Meanwhile, the explanatory power of perceived value based on perceived benefits and perceived risks of mobile apps for travel product distribution was 60.9%, and the explanatory power of satisfaction based on perceived value of mobile apps for travel product distribution was 68.7%. In addition, the explanatory power of continued usage intention based on perceived value and satisfaction of mobile apps for travel product distribution was 44.4%.

The results of verifying the effect of perceived benefits of H1 travel product distribution mobile apps on perceived value showed that the standardized path coefficient of H1-1, the effect of enjoyment on perceived value, was 0.639, and t=8.386 (p<.001), indicating a significant effect.

Therefore, H1-1, ‘Enjoyment of travel product distribution mobile apps will cause a positive (+) effect on perceived value.’ was adopted. The standardized path coefficient for the effect of H1-2, usefulness, on perceived value was .426, with t=6.711 (p<.001), indicating a significant effect. Therefore, H1-2, ‘Usefulness of travel product distribution mobile apps will cause a positive effect on perceived value.’ was accepted.

The results of verifying the effect of perceived risk on perceived value in H2, a mobile app for travel product distribution, showed that the standardized path coefficient of the effect of security risk, H2-1, on perceived value was -0.130, and t=-2.430 (p<.05), indicating a significant negative effect. Therefore, H2-1, ‘Security risk of travel product distribution mobile apps will cause a negative effect on perceived value.’ was adopted. The standardized path coefficient for the effect of technical stress on perceived value in H2-2 was -.053, with t=-.989 (p=.322), indicating that it was not significant. Therefore, H2-2, ‘Technical stress in mobile apps for distributing travel products will cause a negative effect on perceived value.’ was rejected.

The results of verifying the effect of perceived value on satisfaction in H3 mobile apps for travel product distribution showed that the standardized path coefficient was 0.829, and t=8.559 (p<0.001), indicating a significant positive effect. Therefore, H3, ‘Perceived value of travel product distribution mobile apps will cause a positive effect on satisfaction.’ was adopted.

The results of verifying the effect of the perceived value of H4 travel product distribution mobile apps on continuous use intention showed that the standardized path coefficient was -0.081, and t = -0.543 (p = 0.587), indicating that it was not significant. Therefore, H4, ‘Perceived value of travel product distribution mobile apps will cause a positive effect on continuous use intention.’ was rejected.

The results of verifying the effect of satisfaction with travel product distribution mobile apps on continuous usage intention showed that the standardized path coefficient was .892, with t=4.364 (p<.001), indicating a significant positive (+) effect. Therefore, H5, ‘Satisfaction with travel product distribution mobile apps will cause a positive (+) effect on continuous usage intention.’ was accepted.

Table 5: Structural Equation Results

Path		Std.factor	Std.error	C.R. ^a	p-value	SMC ^a
H1-1	Enjoyment	.639	.058	8.368	***	.609
H1-2	Usefulness	.426	.059	6.711	***	
H2-1	Security risk	-.130	.026	-2.43	.015	
H2-2	Technostress	-.053	.028	-.989	.322	
H3	Perceived value	.829	.098	8.559	***	.687
H4	Perceived value	-.081	.155	-.543	.587	.444
H5	Satisfaction.	.892	.173	4.364	***	

$\chi^2 = 602.987(df=182, p=.000)$, $\chi^2/df=3.313$, RMR=.050, GFI=.905, AGFI=.818, NFI=.926, TLI=.910, CFI=.943, RMSEA=.097

***: p<.001, a. C.R., b. SMC

Meanwhile, the results of verifying the mediating effect of satisfaction on the relationship between perceived value and continuous usage intention using bootstrapping showed

that, as shown in Table 6, the standardized path coefficient of the indirect effect of continuous value on continuous usage intention through satisfaction was .607, p=.011,

indicating that satisfaction plays a mediating role between perceived value and continuous usage intention. Thus, since H4, “The perceived value of a mobile app for distributing travel products will have a positive (+) effect on continuous usage intention,” was rejected, satisfaction acts as a complete mediating role in the relationship between perceived value and continuous usage intention. Therefore, while perceived value does influence continuous usage intention, H4 was rejected due to the very strong influence of satisfaction.

Table 6: Verification of the Mediating Effect of Satisfaction

Path (Mediating variable: satisfaction)		Standards Path coefficient	S.E.	P	
Perceived Benefits	→	Continuous Use Intention	.607	.164	.011

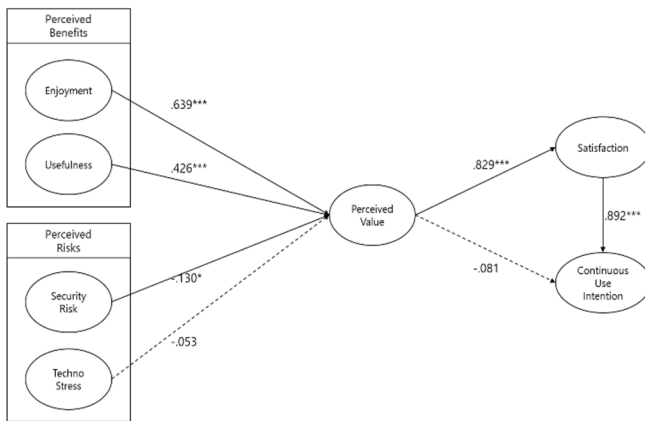


Figure 2: Analyzing Structural Equations

5. Conclusion

5.1. Implications

The main goal of this study is to clarify the relationship among perceived benefits, perceived risks, perceived value, satisfaction, and intention to continue using among consumers who use various mobile apps that sell travel products. By doing so, we aim to identify factors that can improve the quality of relationships with consumers from a service perspective, rather than from a technical acceptance perspective, and propose practical service strategies for mobile apps.

Based on the results of this study's hypothesis verification, the following theoretical implications can be derived.

Hypothesis 1 showed that enjoyment and usefulness, which are sub-variables of perceived benefits, have a positive

effect on perceived value. This result is consistent with the claim in Chunxiang (2014)'s previous study that enjoyment and usefulness have a positive effect on perceived value when using mobile commerce.

In Hypothesis 2, the sub-variable of perceived risk, ‘security risk,’ was found to have a negative impact on perceived value. This result supports the findings of Shen et al. (2015), who argued that consumers' perception of the risk of personal information leakage and the indiscriminate provision of information without their consent lead to a decrease in overall shopping value. On the other hand, technological stress was found to have no negative effect on perceived value. These research results differ from those of Chi et al. (2016), a previous study that pointed out the stress felt in the shopping process due to consumers' negative perceptions of O2O services, in that the subjects of this study were mainly people in their 20s to 40s who are likely to use travel-related mobile apps. However, the complexity of social media influences users' attitudes toward new services, such as resistance to innovation, but does not affect their intention to continue using them, supporting the findings of previous studies by Yun (2016); Chang and Kim (2017); Seo (2020). These results may cause to the reason that the study subjects consisted of users in their 20s to 40s, who are more familiar with app usage than other age groups. Additionally, it is thought that users would not feel stressed even if the app's content or design were user-friendly.

Hypothesis 3 shows that the perceived value of mobile apps for distributing travel products has a positive effect on satisfaction. This result supports the claim by Wu and Li (2017) that the perceived value of tourists who have experienced cultural heritage has a positive effect on satisfaction.

Hypothesis 4 shows that the perceived value of mobile apps for distributing travel products does not have a positive (+) effect on the intention to continue using them. These results indicate that satisfaction acts a entire mediating role in the relationship among perceived value and the intention to continue using the app. Therefore, although perceived value affects the intention to continue using the app, H4 is rejected due to the very strong influence of satisfaction.

Hypothesis 5, which states that satisfaction with mobile apps for distributing travel products has a positive (+) effect on continuous use intention, was supported. This result supports the claim by Agrebi & Jallais (2015) that user satisfaction has a positive (+) effect on continuous use intention.

Based on the research results, the following practical implications can be suggested.

First, since pleasure appears to be more important than usefulness in terms of perceived benefits to consumers, it is important for mobile apps that distribute travel products to target people in their 20s to 40s to focus on fun rather than

functionality. App developers need to develop content that focuses on pleasure. They can add fun elements through visual images or provide pleasure through step-by-step missions like games. Efforts should be made to develop enjoyable content such as diagnostic services tailored to users' preferences. To enhance usefulness, efficiency in searching for products can be improved, and a system can be created that allows users to book flights, accommodations, local transportation, and attractions all in one place. Additionally, features such as real-time discount information comparison and notification services, as well as easy access to currency exchange rates, transportation information, and weather updates, can enhance usefulness.

Second, to alleviate concerns about the perceived risk of personal information leakage, it is necessary to strengthen visual security that customers can visually confirm. Using security certificates or displaying messages assuring users that their personal information will not be leaked when they enter it can also be effective. Although technical stress was not statistically significant, usability should be a fundamental consideration. Especially for the MZ generation, app usage is a natural part of daily life, so they may not experience much technical stress. This implies that technical stress is not a major criterion for value judgment for them. Even if there is some technical inconvenience or complexity, if the practical benefits such as price advantages and convenience are significant, a little technical stress may not be perceived as sufficiently large to affect perceived value.

Substantial incentives are important for attitudes to translate into action. Therefore, we provide incentives that can change customer behavior. For example, in the case of eco-friendly consumption campaigns, there are strategies to encourage behavior through the introduction of rewards or certification systems.

Third, it is necessary to establish specific, actionable strategies to connect the value customers perceive with satisfaction. It would be useful to classify customers based on their satisfaction levels, build personalized services based on satisfaction, and develop systems that can measure satisfaction in real time. Additional benefit programs could also be planned for customers with high satisfaction levels.

In addition to satisfied customers, it is also necessary to have countermeasures for dissatisfied customers. A priority response process for dissatisfied customers should be established.

Fourth, when applying the mediating effect of satisfaction to practical applications, it can be observed that satisfaction, rather than perceived value, directly influences the decision to reuse the service in the relationship between perceived value, satisfaction, and intention to continue using the service. Based on the research findings, which indicate a complete mediating relationship where perceived value does not directly influence continued usage intent but only

through satisfaction, it is clear that when developing apps, emotional satisfaction should be prioritized over functional completeness, security reliability should be ensured, and above all, overall customer satisfaction management should be the focus. Strategies and analyses that can induce specific customer behavior (purchases, repeat visits, recommendations, etc.), as well as practical incentives, reminders, review systems, and loyal customer management, are necessary. To encourage utilization, target-specific strategies can be refined through behavioral data analysis.

This is an important finding that highlights the core role of satisfaction in sustained usage intent and underscores the need to incorporate the emotional experience characteristics of travel into mobile app design.

5.2. Limitations

Several limitations of this study are presented as follows.

First, since the sample was collected focusing on age groups that use apps frequently and comfortably, the opinions of middle-aged and older adults in their 40s and above were not reflected. If future studies conduct difference analyses by age, gender, and travel purpose, or more detailed analyses by app, the practical applicability of the study could be further enhanced.

Second, since this study is based on data from a limited period of time, it has limitations in reflecting the rapidly changing mobile app market. Although this study constructed factors and selected survey questions through a review of previous studies, it falls short in fully explaining the rapidly evolving mobile apps and the changing and developing consumer usage patterns and perceptions. Future studies should address these limitations to derive more practical research results.

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