

Original Article

Effect of user's trust in usefulness, attitude and intention for mobile sports content services

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Abstract:

The purpose of this study, on the basis of the TAM, was to determine whether users would continue to use the sports-related mobile services by applying the measures of trust, usefulness, and attitude towards mobile sports content services. In order to find out the users' acceptance intention of mobile sports content, a survey aimed at 1,331 university students from 7 different districts of the nation was conducted. Statistical programs such as SPSS/pc Ver. 21.0, and AMOS 18.0 were used for data analysis in this study, and the details are as follows. University students experience the acceptance process of mobile sports content in the following consequence; trust influences usefulness, attitude, and using intention. Likewise, usefulness affects attitude and using intention, and attitude also affects using intention. Aimed at the various groups of university students, the research analysis of trust, usefulness, and attitude towards mobile content can be valuable information for the industry of mobile sports content services.

Key Words: Sports content service, trust, usefulness, attitude, using intention

Introduction

The widespread use of the Internet and computers across the globe has provided innovation to human life, and right after that, since the innovation, a new form of media has evolved as well. This is the result of the development of mobile devices via telecommunication technology. A demand for smartphones has substantially increased across the globe and people's interest in mobile phones has expanded as well. The introduction of smartphones has changed the purpose of mobile phones for people from simply being able to receive and make phone calls to having access to advanced features and capabilities of smartphones. This indicates the fact that people can easily have access to music, video, and games not necessarily from TV or PC but from smartphones; this is due to the 80% penetration rate of the world-class smartphones, the growth of communication network speed, and the enlargement of smartphone display panels. Among different generations, people who are in their twenties spend the most number of hours on their mobile devices compared to other generations. For example, their daily average use of the smartphones is 5 hours and 15 minutes.

Because of the mobile internet technology, modern people who live in a mobile environment can quickly and easily acquire the information and knowledge that they desire. A mobile service is not restricted by place and time. It provides diverse contents of communication, information, and entertainment as well as displays different characteristics of the types of contents. A mobile content of the sports industry increases people's level of interest in watching sports and causes a rapid increase in the acceptable amount of information; the most apparent transition however, is the rise of necessity and usefulness of the sports-related mobile content due to the overwhelmingly busy days of the modern people who cannot afford to enjoy their leisure time. In order to encourage users' interest and using intention in sports content products, mobile sports content services need to be custom-tailored to meet users' specific needs. As university students use their mobile devices more so than other groups of people do, selecting a group of university students as the object of research is appropriate and necessary. In addition, despite the introduction of powerful mobile sports content that a majority of users find useful and innovative, there has been insufficient research work done on mobile sports content. Former researchers have investigated on a few topics such as establishing a business strategy for Korea-league baseball club by using mobile phones (Paek, Yoon, Kim, & Lee, 2007), recommending future directions of the contents by taking into account usage behaviors in mobile media (Lee, 2006), and examining the relationship between audience effect, consumption behavior, and characteristics of people who use their mobile services for watching major league baseball games (Kim & Kim, 2008). Therefore, more in-depth and diverse investigations need to be conducted in order to understand the sports content products and services that are widely used by young people. Furthermore, given the expansion of the industry and the diversity of products, providing the right direction and academic definition of mobile sports content for users is necessary. Additionally, the provision of the right knowledge on sports contents should be aligned with providing a variety of mobile sports content services for people who use their mobile devices on a daily basis.

Therefore, the purpose of this study was to interpret trust and usefulness of mobile sports contents and

university students' attitudes toward such services by applying technology acceptance model theory proposed by Davis (1989) in order to predict the constant future demand for mobile service for sports contents.

Model & Hypothesis

This study established a diagram of progress based on the TAM (technology acceptance model) to demonstrate how sports content trust directly influences the using intention of mobile sports content as well as indirectly influences using intention by influencing usefulness and attitude toward use.

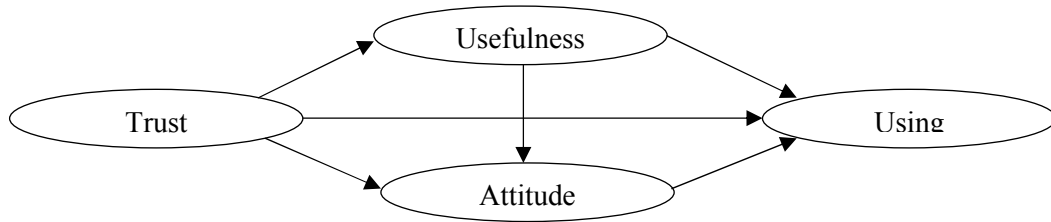


Fig. 1. Model

Hypotheses are built as following based on the study model introduced.

Hypothesis 1: Mobile sports content services trust influences usefulness

Hypothesis 2: Mobile sports content services trust influences attitude

Hypothesis 3: Mobile sports content services trust influences using intention

Hypothesis 4: Mobile sports content services usefulness influences attitude

Hypothesis 5: Mobile sports content services usefulness influences using intention

Hypothesis 6: Mobile sports content services attitude influences using intention

Methods

Participation and Procedure

As the subject of this study, a group of university students who frequently use mobile devices on a regular basis across the nation were selected by simple cluster random sampling for survey. Two universities each from seven representative cities (Seoul, InCheon, DaeJeon, DaeGu, BuSan, GangNeung, GwangJu) in Korea were randomly selected, and 100 questionnaires per each university or a total of 1,400 questionnaires were distributed. Furthermore, sixty nine of questionnaires with uncertain answers or no answer were eliminated from the sample, thus a total of 1,331 questionnaires were finally collected. The detailed sample characteristics are presented in Table 1.

Table 1 General characteristics of study subjects

Characteristics	Frequency	Portion (%)
Gender		
Male	877	65.9
Female	454	34.1
Grade		
Freshman	421	31.6
Sophomore	412	31.0
Junior	249	18.7
Senior	249	18.7
Mobile content categories		
Data or information acquisition	471	35.4
Communication	543	40.8
Leisure activity	243	18.3
Financial activity	47	3.5
Location service	27	2.0
Device used for internet access		
PC or laptop	338	25.4
Smartphone	965	72.5
Tablet PC	28	2.1
The most used mobile sports services		
Health information	136	10.2
Workout information	401	30.1
Sport news	484	36.4
Sport game	96	7.2
Sports ticketing	33	2.5
Leisure products	33	2.5
Sports broadcast	133	10.0
Et cetera	15	1.1

Search and application level		
Very low	25	1.9
Low	209	15.7
Normal	763	57.3
High	270	20.3
Very high	64	4.8
Total	1331	100

Instruments

A questionnaire on trust in mobile sports content was made based on the questionnaire used by Lee and Turban (2001), Jarvenpaa, Tractinsky and Vitale (2000), and it was revised for this study. Composed of honesty, fairness and trust, the service trust represented the level of trust in the of mobile sports content services.

A questionnaire on usefulness in mobile sports content was built based on the questionnaire used by Davis, et al (1992), and it was edited and revised for this study. Service usefulness represented users' anticipation to derive performance improvement by using mobile sports content services.

A questionnaire on attitude in mobile sports content was built based on the questionnaire used by Jarvenpaa, et al (2000), Heijden (2003), and it was edited and revised for this study. Attitude signified the degree of emotions in which users have towards the mobile sports content services.

A questionnaire on using intention in mobile sports content was made based on the questionnaire used by Cheung, Chang and Lai (2000), Heijden (2003) and was edited and revised for this study. Using intention represented the degree in which users were willing to continue to use the mobile sports content services.

Data and Analysis

Statistical programs such as SPSS/pc Ver. 21.0, and AMOS 18.0 were used for data analysis in this study, and the details are as follows.

Firstly, frequency analysis was performed to determine socio-demographic characteristics. Secondly, trust verification and confirmatory factor analyses were conducted to test the validity and reliability of the questionnaire. Thirdly, structural equation modeling was performed to verify the cause-and-effect relationship among trust, usefulness, attitude, and using intention in mobile sports content.

Results

Construct Reliability and Variance Extracted

Next step is to determine construct reliability and variance extracted by dispersing potential factors and measured variables. Theoretically, 0.7 or above for construct reliability and 0.5 or above for variance extracted are considered to be the satisfactory levels of reliability and validity (Kim, 2011).

Table 2 Construct reliability and variance extracted

Factor	Variable	Factor Loading	Error	CR	AVE
Trust	2. Fulfillment of expectation of sports service	.851	.012	.992	.985
	3. Trustfulness of sports service	.814	.015		
	1. Complete trust of sports service	.778	.014		
Usefulness	2. Effect of using mobile in achieving goals	.523	.03	.991	.980
	4. Usefulness mobile usage compared other	.772	.016		
	3. Improved information search by using it	.758	.017		
	1. Reduced time and effort in using it	.663	.018		
Attitude	1. Using sports service is good idea	.639	.018	.994	.985
	4. Using sports service is helpful	.782	.014		
	3. Using sports service is desirable	.778	.012		
	2. Using sports service is pleasant	.774	.013		
Using intention	2. Suggesting sports service to others	.639	.013	.992	.980
	1. Using sports service constantly	.782	.013		
	3. Reusing sports service	.778	.013		
	4. Purchasing sports service products	.774	.013		

Note. CR = composite reliability, AVE = average variance extracted.

Hypotheses Verification

NC (normed χ^2), Turker-Lewis Index (TLI), Comparative Fit Index (CFI), Root Mean Square Error of Approximation (RMSEA) were used to analyze the theoretical structure model and tested its goodness of fit in this study. As a result of goodness of fit test for the theoretical structural model of contents trust, usefulness, attitude, and using intention, values for $\chi^2=450.548$ ($p<.000$), $df=84$, Normal $\chi^2=5.364$ were determined to be less than standard ($NC<3$). The results indicated that conceptual model demonstrated an adequate fit with $TLI=.950$, $CFI=.960$, $RMSEA=.057$ (Hu & Bentler, 1999).

This study was to analyze the cause-and-effect relationships among trust, usefulness, attitude and using intention. The hypothetical structural model in this study consists of a total of six theoretical paths in between exogenous variables and endogenous variables. Accordingly the path coefficients in the structural model of trust, usefulness, attitude and using intention were determined, and the result of the hypothetical path coefficients of the model are as shown in <Figure 2>.

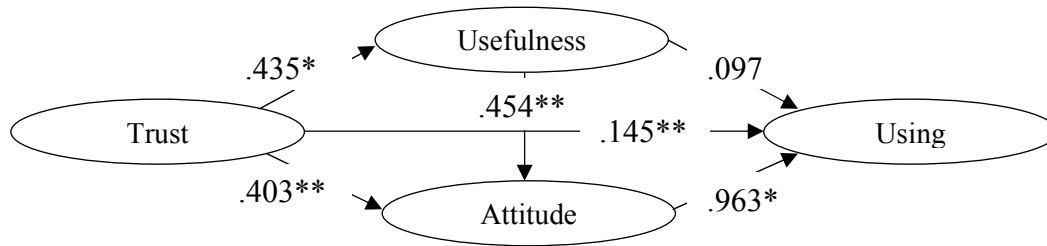


Fig. 2. The results of the hypothetical path coefficients of the model

The results for hypotheses verification are as shown in Table 3.

Table 3 The results for hypotheses verification

	Hypotheses path	Path coefficient	Standard error	CR (t)	P	Testing results
Trust	→ Usefulness	.435	.031	13.921	.000	Accept
Trust	→ Attitude	.403	.033	12.098	.000	Accept
Trust	→ Using intention	.145	.041	3.550	.000	Accept
Usefulness	→ Attitude	.454	.042	10.940	.000	Accept
Usefulness	→ Using intention	.097	.049	1.995	.046	Accept
Attitude	→ Using intention	.963	.058	16.708	.000	Accept

Discussion

Pavlou (2003)'s study asserted that perceived usefulness was only affected when trust was formed. As it was inferred from Hong and Na (2008)'s study, where trust and perceived usefulness were considered for online shopping, established trust had a positive influence to perceived usefulness. Inferring from above, the result of this study was confirmed to be consistent with the preceding studies. Based on such result, it can be concluded that trust of mobile sports content closely influenced usefulness of mobile sports content.

This study has shown that contents with prior experience or knowledge formed positive attitude. In addition, users who have experienced of acquiring useful information tended to have positive attitudes as well (Jang, Noh, Liu, & Park, 2011). Therefore, when a marketing strategy for mobile sports content users is concerned, trust of contents should be enhanced.

When consumers did online-shopping with uncertainties, they considered trust as a crucial factor in purchases. In addition, this trust issue would directly influence using intention of such services (Gefen, 2000; Mukherjee & Nath, 2007; Pavlou, 2003). Thus, the example above supported the consistency of the result as well. Childers, Carr, Peck, and Carson (2001) also conducted research on motivational factors that influenced consumers' attitude the online shopping services, and they discovered the promotional effects of usefulness and ease of use. These research studies asserted an equivalent point with this research that the factor of usefulness altered the users' attitude towards a product or service.

Luarn & Lin (2005) conducted research on the relationship between perceived usefulness and using intention; it was found out that the purpose of using mobile devices was to use mobile content which allowed more interactive communication between users and real-time information search. Schepers and Wetzels (2007) based their research on the Technology Acceptance Model to analyze a statistically significant relationship between consumers' attitude and using intention. Choi (2010) also demonstrated a similar research result that there was a positive relationship between attitude and using intention. According to these results, consumers' attitude toward products determine their purchasing decisions, which is equivalent to the result of this research study.

Conclusions

University students' curiosity about mobile content began from the trust, which encourage them to measure the usefulness. This will consequently allow them to experience the transition of their attitude towards mobile content and will finally continue using the mobile content. This information can be useful data for future researchers to grasp the specific areas of interest that the university students favor, who are found to be the most influential consumer group in the mobile content market.

Aimed at the various groups of university students, the research analysis of trust, usefulness, and attitude towards mobile content can be valuable information for the industry of mobile sports content services.

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