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The Factors Influencing Intention to Use Ubiquitous Healthcare Services[1]

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Abstract

Through the investigation into the studies of information technology acceptance and human act theory, the factors influencing in using the Ubiquitous Healthcare Service (UHS) are clarified and the relationship of them are empirically verified. As a result of analyzing a total of 760 effective sample groups, Perceived Risk, Perceived Cost, Perceived Usefulness, Perceived Ease of use, Social Influence, and Personal Character have shown to influence noticeably for the UHS Intention to Use. This paper's significance lies in producing a theoretic model must be contemplated while developing a new service. UHS's success is not guaranteed without consideration of social behavioral factors.

Keywords:

healthcare service, ubiquitous, intention to use, perceived risk, TAM, TRA

Introduction

Ubiquitous healthcare that improves the personal health at anytime and anywhere, manages the chronic diseases while forecasting the acute disease is expected to take the core part of the next generation health medical informatization that there are active undertakings of information technology including the infra of national wide projects, development of essential technology and others. Notwithstanding such a social and technological demand, it is true that the health medical informatization has been assessed as relatively vulnerable. There are various analyses for the causes, but one of the main causes has been the neglect of user based approach that reflects the unique characteristics of health medical in the development and accommodation of the new information technology. In fact, it is evident from the fact that there are numerous cases where many costs and hours are invested to realize great medical information system yet to have users and medical staffs turning away from them. With the development of the information technology, the needs of individual change ceaselessly that the core of success is to find out the demand of customers promptly or anticipate in advance providing the system and service accordingly. Therefore, in this study, the analysis is to be made for what factors influence on the socio-behavior point of view as well as the acceptance of the information technology in determining the services provided under the u-healthcare environment in a way of presenting the theoretical foundation in service development later.

Materials and methods

The ubiquitous computing is a new concept advocated by Mark Weiser in his thesis of 1991 that has relatively short history. Most of the study is focused on the technology development basis that the research outcome based on the consumer recognition or behavior is relatively insufficient. Therefore, through the survey analysis process that included the existing studies on the relationship of the e-service use and the attitude or recognition of users, the review on adaptability under the ubiquitous service environment was made. Davis proposed the technology accommodating model to describe the service factors of the information system and as the important factors to use the information technology for users; it presented perceived ease of use and perceived usefulness. Fishbein and Ajzen is the model that describes the relationship among behavior, behavior intention, attitude, subjective norm, and belief, and in this model, the behavior is caused by the behavior intention, and the behavior intention is determined by the attitude factor and social factor. In another study, Dodds and Monroe presented the theoretical model to select the product for users on the basis of the Means-Ends Chain Theory that describe the recognized action of human of Tolman. According to their studies, the concept of value presented by Tolman is defined by the objective evaluation used by users in selecting the product, measured by the perceived value, and influenced by the perceived sacrifice to obtain the desired product of customers for the perceived value, and influenced on the behavior pattern, and it presented the theory for influencing on the willingness to pay. In the meantime, T.M. Lee has proven the influence of the variables in ubiquitous connectivity, contextual offer, perceived usefulness, and perceived ease of use makes the influence on the attempt of accommodating the ubiquitous mobile commerce in his study. There are various advance studies on the perceived risk of users and service use, and according to Bauer who first introduced the concept of risk perception on the user behavior field, the perceived risk is distinguished from the objective and probable risk that it is the risk perceived by

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user under the situations like trademark selection, store selection, purchase method selection and others.

On the basis of the above theoretical contemplation, the model proposed under this study is shown on Figure 1.

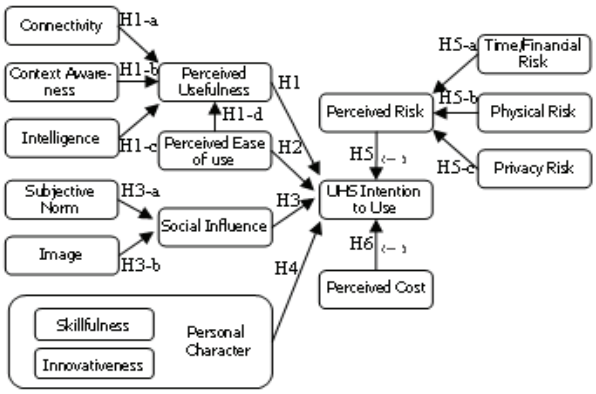

Figure 1- Research model

The questionnaire survey was implemented from Aug. 15, 2006 to Sep. 14 with 789 copies of questionnaires distributed and 784 copies recovered. A total of 760 copies was selected as the final valid sample group, and by using SPSS 12.0, the frequency analysis and factor analysis for reasonableness proof, reliability analysis, and regression analysis for hypothetical proof have been implemented.

Results

For the hypothetical proof of this study, the multiple regression analysis by using the enter method was implemented. This work was undertaken in the total of four stages as follow, and the outcome is specified in the following Table 3.

Table 3 – Outcome of hypothetical proof

Model		Beta	Sig.	Hypothetical proof
1	Context-Intelligence	.099	.000	Selection
	Connectivity	.119	.000	Selection
	Perceived Ease of Use	.639	.000	Selection
*Dependent Variable: Perceived Usefulness				
2	Subjective Norm	.588	.000	Selection
	Image	.254	.000	Selection
*Dependent Variable: Social Influence				
3	Time/Financial Risk	.290	.000	Selection
	Physical Risk	.140	.000	Selection
	Privacy Risk	.744	.000	Selection
*Dependent Variable: Perceived Risk				
4	Perceived Usefulness	.186	.000	Selection
	Perceived Ease of Use	.159	.000	Selection
	Social Influence	.400	.000	Selection
	Personal Character	.374	.000	Selection
	Perceived Risk	-.299	.000	Selection
	Perceived Cost	-.230	.000	Selection
*Dependent Variable: UHS Intention to Use				

Discussion & conclusion

As a result of formulating the factors influencing on the intent for use and its empirical verification for the ubiquitous healthcare service, Perceived Usefulness, Perceived Ease of Use, Social Influence, Personal Character, Perceived Risk, and Perceived Cost have been showing the influence noticeably for the intent of use. Several discussed matters are mentioned herein as follows. First, as a result of fact analysis, the Context Awareness and the Intelligence variable are combined as one variable as Context Awareness-Intelligence. Second, for the Perceived Risk, the influence of private risk was shown to be 74% or higher compared to that of Time/Financial Risk or Physical Risk that there is a high demand and concern on the medical information protection that if these problems are not resolved, it would be a basis of unclear future of the u-healthcare industry. Third, in the willing to accept UHS, the social influence from the people around and others, or the personal character that displays the personal skill of information technology or innovative tendency of individual impact more than the concern on information disclosure or costs, service usefulness, convenience and the like.

This study was undertaken based on the questionnaire survey with the targeting on the UHS yet to be generalized, and it has the innate problems of lack of advanced research outcome, generalized reasonableness of the u-healthcare scenario, level of understanding by the respondents and others. Notwithstanding such problems, the verification of various factors influencing on the intend of use for the UHS would bring the implication in having the research on the point of view of user, and it is expected that this

research outcome will be the useful data for the actual service development and the business strategy for the success in u-health industry.

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