

Analysis of Behavioral Intention Differences Between Potential Sharp(#) Mail Users and Initial Experienced Users

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Abstract

In In this research, comparative study of behavioral intention differences between potential users and initially experienced users of Sharp Mail was performed. A research model was set up based on the unified theory of acceptance and use of technology (UTAUT) suggested by Venkatesh et al. (2003) and, to analyze if user experience can exert significant influence on use intention, comparative study was performed for 2 groups (potential users vs. initial experienced users).

According to analysis, out of the influencing factors on behavioral intention suggested by Venkatesh et al. (2003), effort expectancy exerted significant influence on behavioral intention in both the 2 groups while security factor exerted significant influence in both the 2 groups, and potential users considered security factor more importantly than initial experienced users.

Keywords: #-Mail, UTAUT, Security

1. Introduction

The Sharp(#) Mail is defined as authorized electronic mail that can transmit and receive electronic document by using authorized electronic address, which is a service that confirms users' identification and verifies electronic document contents transmitted or received.

The purpose of this research was, through comparison of Sharp Mail use intention between potential users and initial experienced users, to provide working-level implications.

2. Research Model and Research Design

2.1 Conceptual Research Model and Hypotheses

For comparative analysis, the research model in Fig. 1 was analyzed after dividing to potential users group and initial experienced users group, and for comparative evaluation between the two groups, the same hypothesis was set up and then verification was performed.

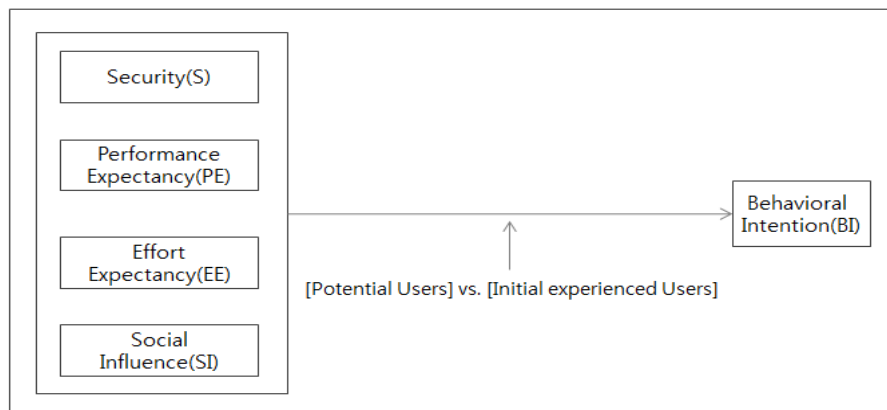


Fig. 1. Research model for analysis of Sharp (#) Mail use intention

2.2 Hypotheses

A model hypothesis to be verified in this chapter of the study was composed of 5 factors by adding Security factor that can influence the behavioral intention suggested in [1].

H1. Performance Expectancy has a positive effect on the use intention of Sharp(#) Mail solution and service.

H2. Effort Expectancy has a positive effect on the use intention of Sharp(#) Mail solution and service.

H3. Social Influence has a positive effect on the use intention of Sharp(#) Mail solution and service.

H4. Security Factor has a positive effect on behavioral intention of Sharp(#) Mail solution and service users.

2.3 Definition of Research Variables

A For the construct concepts used and measured in this study, measuring items were used, where reliability and validity are verified in existing preceding research, and performance expectancy, effort expectancy, social influence, and security were set up as an independent variable in the paragraph to analyze relationship between specific variable status and variable.

Table 1. Research Variables

Variable	Measurement variable	References for measurement item
Performance expectancy	<ol style="list-style-type: none"> 1. Usefulness of use 2. Work (duty) productivity improvement 3. Easy handling of Work (duty) 4. Usefulness of proof 	Venkatech et al.(2003)
Effort expectancy	<ol style="list-style-type: none"> 1. Easiness of adaptation 2. Easy perception of usage 3. Convenient application to work 4. Easy learning 5. Usability of foundation technology 	Venkatech et al.(2003)
Social influence	<ol style="list-style-type: none"> 1. Intention to recommend 2. Awareness of convenience 3. Awareness of usefulness 4. Intention and desire to use 5. Popular generality 	Venkatech et al.(2003)
Security	<ol style="list-style-type: none"> 1. Safety of personal information 2. Safety of internet security 3. Safety against information invasion 4. Safety against data leakage 5. Safety of work (duty) performance 	S. H Chen (2011) H. Cho and S. K. Lee (2012) Buellinge and Woeter (2004)
Behavioral intention	<ol style="list-style-type: none"> 1. Level of use intention 2. Awareness of unconscious use 3. Future plan to use 4. Acceptance of expandability 	Venkatech et al.(2003)

3. Test and Analysis

3.1 Measurement Model Analysis

In this study, Confirmatory Factor Analysis (CFA) was conducted to analyze measurement models, whose results are derived from analysis on the PLS Measurement Model. To analyze measurement models, evaluated were Convergent Validity, Internal Consistency, and Discriminant Validity on measuring items, and identified was the suitability of them [5]. Convergent Validity can be grasped through the reliability of individual measuring items. For individual measuring items with reliability, as the individual measuring items and equivalent variables should have higher shared variance compared to error variance, required are standardized loading values that should be 0.7 ideally, and 0.6 at minimum [6]. Generally, it has reliability if it is 0.6 or above in Cronbach's Alpha [7], and if it is 0.5 or above in AVE value [8]. It has internal consistency if it is 0.7 or above [9] in Composite Reliability. Discriminant Validity is a level discriminating a concept of a specific latent variable from a concept of other latent variables [10]. An AVE square root value is higher compared to correlation coefficient and 0.7 or above to analyze discriminant validity in a general manner. A square root value of AVE is expressed in a diagonal axis of correlation coefficient between variables, where the lowest value, Effort Expectancy, is 0.83, and all the factors are more than 0.7, compared to the AVE value to which square root is applied. Further, the AVE values exceed correlation coefficient between variables of 5 factors, which indicates they have discriminant validity.

3.2 Structural Model Analysis

Applicability of structural model evaluates variance explanation power (R^2) of structural concept, and also evaluates significance of path coefficient (β) expressing causal relationship information between two variables through structural equation analysis.

Table 2. Summarized Results of the Hypotheses Verified of potential Users

	Hypothesis	Path Coefficient	Sample Mean (M)	Standard Deviation (STDEV)	Standard Error (STERR)	T Statistics	Adopted/ Rejected
H1	Performance Expectancy -> Behavioral Intention	0.193*	0.1907	0.108	0.108	1.787	Adopted
H2	Effort Expectancy -> Behavioral Intention	0.074	0.0889	0.095	0.095	0.824	Rejected
H3	Social Influence -> Behavioral Intention	0.435****	0.4342	0.128	0.128	3.402	Adopted
H4	Security -> Behavioral Intention	0.209**	0.2031	0.086	0.086	2.410	Adopted

Table 3. Summarized Results of the Hypotheses Verified of initial experienced Users

Hypothesis	Path Coefficient	Sample Mean (M)	Standard Deviation (STDEV)	Standard Error (STERR)	T Statistics	Adopted/ Rejected
H1 Performance Expectancy -> Behavioral Intention	0.223**	0.218	0.100	0.100	2.220	Adopted
H2 Effort Expectancy -> Behavioral Intention	0.010	0.026	0.096	0.096	0.102	Rejected
H3 Social Influence -> Behavioral Intention	0.486****	0.470	0.125	0.125	3.906	Adopted
H4 Security -> Behavioral Intention	0.153**	0.154	0.067	0.067	2.268	Adopted

* P<0.1, ** P<0.05, ***P<0.01, ****P<0.001

3. 3 Analysis of Behavioral Intention Differences

In particular, in terms of significance level that performance expectancy factor affects behavioral intention, potential users of Sharp (#) Mail showed 0.1 level while initial experienced users showed 0.05 level, and there were differences in the affecting path coefficients. As the two groups showed differences like this, moderating effect verification of [11] was performed to verify if these differences are significant. Moderating effect verification verifies theoretical relationship between independent variable and dependent variable when there exists a variable having strong and uncertain effect between independent variable and dependent variable.

Because moderating effect verification result of Keil in [Table 4] shows that factors affecting behavioral intention of potential users of Sharp (#) Mail and factors affecting use intention of initial experienced users both have p-value lower than 0.05, we may conclude that there is a significant difference at 95% level. This analysis result can be interpreted as showing that the influence of performance expectancy factor and social influence factor on use intention is stronger with initial experienced users than with potential users. But, on the contrary, it is possible to see that security factor affects use intention of potential users more strongly than initial experienced users and there is a significant difference at a level higher than 99.9%.

Table 4. Moderating effect verification result on Sharp (#) Mail use intention

	(1) Potential users		(2) Initial Experienced users		P-Value (two-tailed test)
	PCL	SEL	PCF	SEF	
Performance expectancy	0.193	0.108	0.223	0.100	0.0146
Effort expectancy	0.074	0.095	0.010	0.096	0.0000
Social influence	0.435	0.128	0.486	0.125	0.0167
Security	0.209	0.086	0.153	0.067	0.0000

4. Conclusion

The research result suggested the analysis that cannot say that effort expectancy had significant effect on use intention, unlike the result of [1]. As in the implications suggested by the research of [12]. on Sharp mail use, this may be interpreted to agree with the conclusion that acceptance factor may change the result depending on Context and Culture. That is, unlike the research of [1], this research on acceptance factor of Sharp (#) Mail may derive the analysis result coming from the differences in Context and Culture as in [Table5].

Table 5. Summary of differences in context and culture

Item	Venkatesh et al.(2003)	This research	Note
Time difference	2003	2013	Difference in time (10 years before and after)
Analysis domain	Entertainment, banking, communication service and public service	Sharp (#) Mail	Difference of analysis domain
Country of study	USA	Korea	Cultural and geographical difference

security factor was analyzed in moderating effect verification to imply that potential users act stronger than initial experienced users. This may lead to the conclusion that potential users with no experience of Sharp Mail would consider security factor important when they use it, which may be an important factor to convert potential users to real users.

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Received: October 28, 2014; Published: December 2, 2014