THE INTERCHANGES OF HEDONIC-UTILITARIAN VALUES TOWARD INFORMATION SYSTEM-USERS SATISFACTION: A CASE OF SOCIAL MEDIA USERS

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Abstract

The main purpose of this research is to understand the relationship among various interchanges of hedonic-utilitarian values on information system-users' satisfaction. The basic premise of the Self-Determination Theory is used as the theoritical foundation of the study highlighting the importance of intrinsic and extrinsic motivations that further influence users' decision towards IS acceptance in social media users in Indonesia. Datum were obtained through online and paper-based surveys to 277 online shoppers who have experienced a purchasing activity using various social media platforms. The results suggested that hedonic values embedded in emotional responses (pleasure, arousal, and dominance) and imaginal responses (role projection and escapism), as well as utilitarian aspects of system-use (individual perceptions on information quality, system quality, and service quality) are essentials in IS users' satisfaction. Further implications and future research directions are discussed.

Keywords: Hedonic Values, Utilitarian Values, Self Determination Theory (SDT), Interchanges, Social Media Users

1. Introduction

The rapid development of computers and networks has undoubtedly become an important part of individual daily life. The use of information systems (IS) has spread into many various aspects of people' activities and shifted the way information communication technology (ICT) users perceive the value of IS for futher adoption. Technology Acceptance Model (TAM) has been widely acknowledged as the most influential theoritical foundation used to justify the adoption of IS in numerous studies (Wu and Lu, 2013; Wang and Scheepers, 2013). According to the authors, TAM undoubtfully highlights its parsimony toward the utilitarian system-use setting that affects intention and motivation of users adopting IS in the workplace. On the other hand, the authors underlined that TAM has been criticized for its robustness in reflecting the emotional aspects of users when dealing with IS and that this, to some extent, has an important role in providing a broader understanding of individual's system-use behaviour.

Interestingly, the results of the study from Igbaria et al. (1994) indicated that perceived fun/enjoyment influenced users's satisfaction on the use of technology leading to the degree of the productivity on the applied technology. More specifically, O'Brien (2010) and Hassenzahl et al. (2000) pointed out that both usefulness and appealing features embedded

in the IS are pivotal for further fostering a more comprehensive model of IS usability. The interesting factors of an IS (e.g. innovativeness, surprising, beauty etc.) that represent the hedonic quality may not be task-related like its utilitarian counterpart which focuses on making softwares or computers usable. However,the authors further emphasized that the infusion of hedonic quality within IS has an equal impact as the utilitarian path onto both users' acceptance and usage of IS. Unsurprisingly, Hassenzahl et al. (2000) suggested that utilitarian and hedonic qualities complemented each other in situations where one or the other is low. Thus, accustoming multiform desires of the IS users when interacting with computers expands a broader perspective on the users' acceptance of related-technology eventually.

However, in contrary to the investigation on consumer behaviour affected by the merge of utilitarian and hedonic motivations, the issue of the IS users' satisfaction from incorporating utilitarian and hedonic system-use has not yet been explored extensively (Wu and Lu, 2014; O'Brien, 2010). Thus, according to the authors, composing these two paths into a particular research setting will shed the light on more rigorous determinants of a system-use behaviour for further expanding models of IS users' satisfaction. In addition, Brown and Venkatesh (2005) and Van der Heijden (2004) have recommended to analyze the distinction of utilitarian against hedonic nature of systems. This attempt is not only to provide rationalization for the existing mixed findings among the studies related to users' acceptance towards IS but also to provide fruitful insight to customize the IS design that is responsive to these different motivations.

As suggested in Wu and Lu (2013), the user acceptance of technology is not entirely based on the productivity orientations but also by a substantial hedonic highlighting the pleasure-oriented. The main aim of the study investigates to what extent intrinsic and extrinsic motivators of system-use behaviour influence the users' satisfaction on social media users in Indonesia. More precisely, this study focuses on examining the relationship among interchanges of weights between utilitarian versus hedonic values – when one of them is superior to another (high versus low and vice versa) and when they both have similar levels (low – low and high – high), as well as how these schemes influence users' satisfaction towards IS from the perspective of Hedonic Information System (HIS).

In particular, the research also updates the research model of IS by Wang (2008) by contuniung the evaluation on the DeLone and McLean IS success model (2003) in light of the rapid growth of e-commerce. The current study employs repurchase intentions linked with Hedonic and Utilitarian motivators and users' satisfaction to depict a more comprehensive model of IS successfulness from an e-commerce perspective. This paper is organized as follows: The subsequent section discusses the literature review linking both aforementioned motivators developed by Wu and Lu (2013) and the Self Determination Theory (SDT) by Ryan and Deci (2000) to the development of research hypotheses. The third section presents the research method and measures. The next section provides discussion and analysis of the results, followed by the remark on theoritical and managerial implications.

2. Literature Review And Hypotheses Development

It is well acknowledged that motivation drives the way an individual engages with a certain thing that further leads to the achievement of his/her satisfaction from a particular circumstance he/she is engaging with (Deci and Ryan, 1985; Ryan and Deci, 2000). From this perspective, Wu and Lu (2013) and Yoo et al. (2012) summarized two important insights: (1) the link between need-based motivations and various individual behaviours, and (2) motivations are established by two sources: intrinsic and extrinsic. In general, Deci and Ryan (1985) reflected the intrinsic motivations from several factors: interesting, enjoyable, and attractiveness that further affects an individual to do something without extra

incentives. On the other hand, the extrinsic motivations refers to any work-related thing (monetary incentives, deadline, praise) which is relatively leaving an individual without his/her personal preferences when interacting with any particular activity.These given viewpoints are augmented into Ryan and Deci (2000) SDT which is rooted from the hierarchy of human needs by Maslow (1943) encouraging SDT towards the fulfilment of basic human needs.

Several studies in IS related areas have indicated that the intrinsic motivators are associated with the hedonic values (i.e. pleasure, arousal, and adventurousness) of the IS whereby the extrinsic motivators represent the utilitarian values such as the effectiveness and ergonomical contents of IS (see for example Wu and Lu, 2013; Yoo et al., 2012; O'Brien, 2010; Hassenzahl et al., 2000). This research expands this perspective by applying Wang and Scheepers (2003) model of hedonic values and Delon and McLean's (2003) model of IS success as the construct for utilitarian values. Wang and Scheepers (2003) explored the intrinsic motivations of HIS acceptance and found that pleasure, arousal, and dominance (PAD) were embedded in emotional responses; imaginal responses defined as role projection and escapism determined the acceptance of HIS.

Accordingly, the utilitarian preferences of IS (effectiveness and efficiency qualities) can be rationalized from the Delone and McLean's (D&M) IS success model. It is based on the perspective given by Childers et al. (2001) indicating IS users would seek the excellent quality of IS with greater effectiveness and timely process, as well as less troubles. In the eye of the D&S IS model, these utilitarian aspects of system-use are formed by the individual perceptions on information quality, system quality, and service quality of the respective IS (Wang, 2008). However, as discussed on the earlier section, to what extent the relationship among the interactions weighs between hedonic and utilitarian values with users' satisfaction has remained inconclusive.

More specifically, the study from Deci et al. (1999) suggested that both extrinsic and intrinsic motivations are equally important in affecting the individual's behaviours. As reiterated by Yoo et al. (2012); Deci et al. (1999) stressed that being motivated to do something towards achieving the maximum level of utilitarian outcome would be achieved if an individual could harmonize the extrinsic motivations and the intrinsic motivations in a concert, and likewise. In the context of IS-related environment, it can be posited that IS users will find the respective IS useful if he/she views that the IS itself is not only easy and convenient to be further used but also able to entertain the users with the contents provided in the IS. Therefore,

H1: IS users are more likely to experience greater satisfaction if the respective IS contains both high levels hedonic and utilitarian values than with other weight combinations.

Furthermore, the importance of having both hedonic and utilitarian qualities puts forward. More specifically, O'Brien (2010) and Hassenzahl et al. (2000) characterized the relationship between hedonic and utilitarian values as a mutualistic relationship. It indicated that despite the essentiality on having both qualities in the design of IS, they can support each other in situations where hedonic values are low and the utilitarians' are high, and likewise.

As highlighted by Wang (2008), D&M IS model provides the justification on the linkage between users' satisfaction and reuse. According to Oliver (1992), satisfaction is defined as a consumer's post-purchase evaluation and can further explain the consumer's affective response to overall product or service exprience. Specifically, Wang (2008) suggested that intention to reuse is affected by perceived value and users satisfaction, which in turn, are influenced by information quality, system quality, and service quality. The implication from the findings of the study by Wang (2008) can also be expanded into this research which examines social media users both as the user and the customers in the e-retail business

scheme using a social network-platform. It is further indicated that when they are satisfied with the current IS they are using, they will show loyalty by continuing purchase activity using the same social media-platform.

H2. A users' satisfaction mediates the relationship among hedonic value, utilitarian value and repurchase intention.
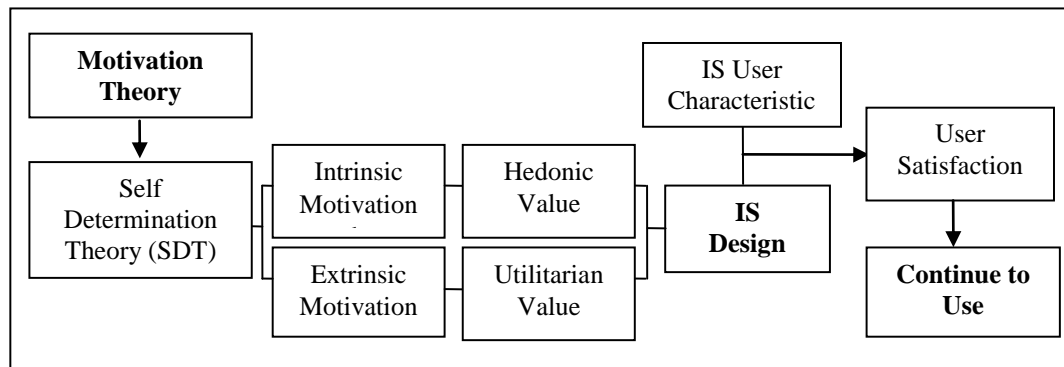

Figure 1. Conceptual Framework of the Study

3. Research Method

3.1. Data Collection

Datum were gathered from a total of 277 valid respondents from top ten popular social media platforms[1] involving various social networks and messengers/chat applications/voice over internet protocol (VOIP) in order to increase the generalizability. The survey was conducted using a snowball technique from two differents approaches: paper based and internet/online based. 122 responses were collected using electronic filling, and 155 were gathered from paper-based questionnaires. The criteria which sets a valid user is those who have had an experience with an online shopping over social media. Most respondents were ranging from 15-20 years of age (37.90%). 99 of them are male (35.74%) and 178 of them are female (64.26%). The demographics characteristics are displayed in detail in Table 1 as follows.

Table 1. Demographic Characteristics of Respondents

Indicators	Sum	Percentage
Age		
15-20 years	71	25.70%
21-25 years	105	37.90%
26-30 years	53	19.10%
31-35 years	31	11.20%
36-40 years	9	3.20%
> 40 years	8	2.90%
Total	**277**	**100%**
Sex		
Male	99	35,74%

	Female	178	64,26%
	Total	**277**	**100%**
Data collection			
	Electronic questionnaire	122	44,04%
	Non-electronic questionnaire	155	55,96%
	Total	**277**	**100%**

3.2. Measures and Constructs

The respondents were voluntarily asked to be involved in the survey that was conducted by issuing an electronic questionnaire on the online store pages and paper-based questionnaires. We adapted the instruments from Wang and Scheepers (2012) for the construct of hedonic value and Wang (2007) for the utilitarian construct's. These instruments were used due to their validity and reliability had been verified in previous studies. All of the items were quantified into a 7-point Likert scale, ranging from 1 (*strongly disagree*) to 7 (*strongly agree*).

The data analysis consists of three stages. Firstly, data from a crosstabs statistic was used to examine the association between hedonic and utilitarian values. Accordingly, this crosstabs analysis was further used to classify the weight of each hedonic value and utilitarian value followed by the evaluation of the strength of association among different weights of relationship between hedonic and utilitarian (High vs. High, Low vs. Low, High vs. Low, Low vs. High). The strength of association level will be measured by observing the value of symmetric lambda and the significance level of each variable.

The second stage of analysis used the test of Analysis of Variance (ANOVA) to see how different/similar levels of hedonic and utilitarian value affect user satisfaction. In this case, hedonic and utilitarian value will be treated as a dummy variable split into four groups: 1) High-Hedonic and High-Utilitarian (HHHU), 2) Low-Hedonic and Low-Utilitarian (LHLU), High-Hedonic and Low Utilitarian (HHLU) and 4) Low-Hedonic and High-Utilitarian (LHHU).

Finally, in the third stage of analysis, we the author testing the research model, used Structural Equation Modelling (SEM) under Partial Least Square (PLS) to examine both the measurement model and the structural model. In this case, PLS is used to analyze the relationship among each group consisting of different and similar weights of hedonic and utilitarian qualities, users' satisfaction, and repurchase intentions.

Table 2 provides the a more thorough description on the research variables adapted from prior relevant studies as previously discussed.

Table 2. Research Variables and Operational Definitions

Dimension	Variable	Operational Definitions
Hedonic Value (Intrinsic Motivators)	Emotional Response	Various feelings in the experience when interacting with social media while doing electronic shopping (Wang and Scheepers, 2012)
	Imaginal Response	Psychological state in which social media user distract himself from unpleasant events in to a particular role or character when doing electronic shopping (Wang and Scheepers, 2012)
Utilitarian Value	System Quality	User perception of the consistency of user interface, ease of use, and quality of documentation when doing electronic

(Extrinsic Motivators)		shopping in social media (Seddon, 1997)
	Information Quality	User perception about relevance, timeliness, and accuracy of information generated by electronic commerce information systems in social media (Seddon, 1997)
	Service Quality	User perception of the overall support delivered by service provider when doing electronic shopping in social media. Regardless of whether this support is delivered by the department of information systems and electronic traders on social media pages (Seddon, 1997)
	User Satisfaction	Favorable feelings towards consumer services obtained from the use of social media when doing electronic shopping (Wang, 2008)
	Repurchase Intention	Encouragement of individual store-do the electronic shopping via social media (Wang, 2008)

4. Discussion And Analysis

4.1. Crosstabs Analysis

In order to conduct a cross-tabulation analysis, we transformed the existing rated converting a likert scale into a dummy variable focusing on LOW (1) and HIGH (2) for each hedonic values, utilitarian values, and satisfaction variables. From the average scores of each scale, those with score < 4 were categorized as Low (1) and those with scores ≥ 4were grouped into High (2). Table 3 shows the result of crosstab tabulation highlighting HHUH as the most dominant combination among others (177 respondents), and this group experienced the highest satisfaction in dealing with IS.

Table 3. Crosstab Analysis

Variable		Count			Satisfaction			
Hedonic	Utilitarian	F	%	High	%	Low	%
High	Low	45	16,2%	31	11.1%	14	5.1%
Low	High	38	13.7%	24	8.7%	14	5.1%
High	High	177	63.9%	163	58.8%	14	5.1%
Low	Low	17	6.1%	7	2,5%	10	3.6%
Total		277	100%	225	81.1%	52	18,9%
				277 (100%)			

4.2.ANOVA Analysis

ANOVA was performed to examine the influence of individual relationship among different weights of hedonic-utilitarian values on users' satisfaction: HHHU, LHLU, HHLU and LHHU. The results demonstrated that only the HHHU has significant effect on user satisfaction over the other combinations. A post hoc analysis using Tukey HSD and Benferroni test indicated that the IS users perceived to have HHHU in having greater satisfaction on the IS, therefore H1 supported.

Table 4. Multiple Comparison

Level Combination	HHHU	LHLU	HHLU	LHHU

HHHU			
LHLU	0,00/0,00**		
HHLU	0,01/0,01**	0,002/0,002**	
LHHU	0,00/0,00**	0,139/0,192	0,233/0,356

Left side: Tukey HSD
Right side: Benferroni
* : p < .05; ** : p < .01

4.3. Construct Validity

SEM-PLS test was performed on each group. In sum, all of the groups have met the expected construct validity (see Appendix 1). Convergent validity in this study is met by reviewing the value of factor loading with the critical number 50 (Fornell and Larcker, 1981; Hair, 2010). Several variables were eliminated because they did not meet the threshold. Fornell-Larcker matrix and the cross loading table are further observed to generate the discriminant validity. The result of the discriminant validity test shown on Appendix 1 indicated that the constructs of this study are eligible to be further tested.

Table 5. Discriminant Validity Test

Methods	Results	Conclusions
CFA	CF value > 0.6	Valid
AVE	r^2 values < AVE values	Valid

4.4. Structural Model

We used partial least squares (PLS) as a structural equation modelling (SEM) in examining measurement and structural models for this study (Thatcher and Perrewe, 2002; Bollen, 1989). According to the authors, the use of PLS for the measurement model is to examine the hypothesized links between indicators and latent constructs, whereas the hypothesized paths between exogenous (independent) and endogenous (dependent) are estimated by the structural model. Furthermore, Goodhue et al. (2006) noted that PLS path modelling is still considered convenient and powerful for complex research models with sample sizes that would be too small for covariance based-SEM techniques, and this attempt could overcome the issue on the statistical power over the use of PLS.

We focused on the PLS logarithm that was used to examine the relationship among HHHU, satisfaction and repurchase intention. The results of the structural model are displayed in Figure 2. We conducted a bootstrapping procedure to generate t-statistics and standard errors (Chin, 1998). Surprisingly however, service quality found no positive impact on IS users' satisfaction.

Lastly, we tested for the mediating effect of satisfaction in the relationship between HHHU and repurchase intention. We followed a three step-testing developed by Baron and Kenny (1986) in examining H2. The result of H2 testing partially supported the influence of utilitarian value on repurchase intention. Service quality, as one of indicators of utilitarian value, has a negative coefficient value on IS users' satisfaction. Hence, H2 is partially supported. The result of SEM-PLS on the relationship among HHUH IS users' satisfaction and repurchase intention is presented in figure 2 below.
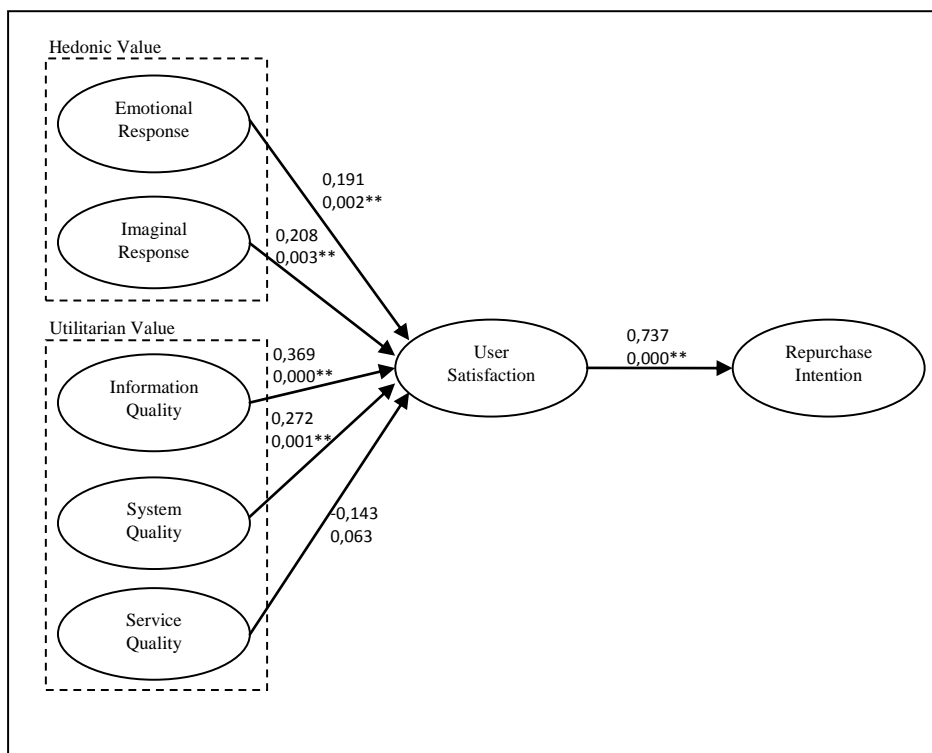
Figure 2. Structural Model

5. Conclusion

5.1. Summary of Findings

The main aim of the study was to examine the interchange role of hedonic and utilitarian values on IS users' satisfaction and repurchase intention. The investigation that merged hedonic and utilitarian values as the antecedent of IS acceptance and IS usability were studied in a number of research (see for example Wu & Lu, 2013; Wang & Scheepers, 2012; O'Brien, 2010; Childers, 2001; Hassenzahl, et al., 2000). This paper expands the previous studies by conducting an advance testing on the expanded model of IS usability focusing various interchanges of hedonic-utilitarian values that influence IS users' satisfaction and repurchase intentions.

The findings support the SDT by Ryan and Deci (2000) to the extent that the interchange of HHHU influence the most of IS users' satisfaction. Optimizing both hedonic and utilitarian components in the IS design can provide a more effective and efficient flow of users when dealing with IS. In addition, the findings also complemented the result of study from Hassenzahl et al. (2000) suggesting that different interchanges of hedonic-utilitarian values represent a symbiotic relationship in situations where hedonic components are low and the utilitarian components are high in the IS, and likewise. The findings also strengthen the importance of incorporating hedonic and utilitarian values in the IS that can maximize the productivity of IS *per se.*

5.2. Practical Implications and Future Research Directions

From the IS managerial perspective, our findings highlighted one important point on the issue in increasing usability of IS from various angles of hedonic-utilitarian interchanges. In more detail, the main hypothesis testing result argued the implication of the study from Hassenzahl et al. (2000) underlining the importance of having high elements of both hedonic and utilitarian values. By adding some arousal and entertainment aspects in the

design of IS such as colouring, positioning, angle, search stream, and music can elevate the IS user's satisfaction, which in turn, can shift their motivation into a more voluntary basis. Thus, it can contribute to the higher level of performance of an individual, as well as the organization.

On the other side, the result of the study emphasized the findings from Hassenzahl et al. (2000) on the importance of a proportional hedonic and utilitarian elements in a design of IS. If one of them is superior to the other then it will create another issue on both usability and productivity of IS. For instance, as stated in Hassenzahl et al. (2000), when the design of IS is less entertaining, the IS tends to be a boring system. Likewise, making the IS too sophisticated may increase the complexity and difficulty in applying the IS, thus decreasing the ergonomic aspect of the IS *per se.*

Future studies should consider conducting an experimental method to provide a higher level of internal validity that can provide a more comprehensive understanding on the evaluations of IS users change over time. Given the limitation on the study focusing on the Asians perspective, further studies are encouraged to expand the scope of study involving Western perspective and/or conducting a comparison study across different cultures.

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Appendix 1

Factor Loadings for The Measurement Model

Latent Variabl	Observed Variables	Factor Loading	Cronbach's Alpha
Imaginal Response	Playing social media helps me temporarily esape from the world of reality	0.691	0.935
	Playing social media helps me temporarily esape from problem and pressures	0.657	
	Playing social media enables me to project myself into a particular role	0.832	
	Playing social media enables me to project myself into a particular character	0.773	
Emotional Response	To what extent do you feel happy or unhappy when playing social media?	0.821	0.738
	To what extent do you feel pleased or annoyed when playing social media?	0.857	
	To what extent do you feel relaxed or bored when playing social media?	0.842	
	To what extent do you feel stimulated or relaxed when playing social media?	0.832	
	To what extent do you feel exited or calm when playing social media?	0.901	
	To what extent do you feel in control or cared for when playing social media?	0.767	
	To what extent do you feel controlling or controlled when playing social media?	0.822	
	To what extent do you feel dominant or submissive when playing social media?	0.782	
Information Quality	The e-commerce system provide the precise information you need	0.889	0.888
	The information content meets you need	0.867	
	You feel the output is reliable	0.833	
	The e-commerce system provide up-to-date information	.0873	
System Quality	The e-commerce system is user friendly	0.715	0.771
	The e-commerce system is easy to use	0.781	
	When you have problem, the e-commerce system service show a sincere interest in solving it.	0.808	
	The e-commerce system service is always willing to help you	0.718	
	You feel safe in your transaction with the e-commerce system service in terms of security and privacy protection	0.563	
Service Quality	The e-commerce system service has the knowledge to answer your questions	0.913	0.875
	The e-commerce system service give you individual attention	0.881	
	The e-commerce system service understand your specific needs	0.888	
Satisfaction	You are satisfied with thw e-commerce system	0.888	0.880
	The e-commerce system is high quality	0.905	
	The e-commerce system has met you expectations	0.902	

Repurchase Intention	Assuming that you have access to the e-commerce system, you intend to reuse it.	0.911	
	You will reuse the e-commerce system in the future.	0.889	0.881
	You will frequently use the e-commerce system in the future.	0.894	