공공정보의 품질, 고객가치 및 만족도에 관한 연구
Public Information Quality, Customer Value and their Effects on Satisfaction of SMEs

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요약

　본 연구의 목적은 공공정보 서비스에 대한 소비자 가치와 만족에 영향을 미치는 요인이 무엇인지 파악하는 것이며, 조사대상 집단은 국내 중소기업 소속연구원들로 하였다. 조사 분석 결과는 다음과 같다.
　(1) 고객가치는 서비스의 품질에 의해 영향을 받는다. (2) 고객가치는 소비자 만족도에 정의 영향을 미친다. (3) 고객의 정보수요는 서비스 품질과 고객가치 간의 관계를 조절한다, 그러나 고객가치와 만족도간의 관계는 조절하지 않는다. 본 연구 결과를 통해 공공정보서비스분야에 있어서 이용자의 만족도를 높이기 위해 정보서비스품질과 고객가치의 중요성을 확인할 수 있다.

■ 중심어 : | 정보품질 | 고객가치 | 만족도 | 정보수요 |

Abstract

　Abstract－The purpose of this study is to identify the factors which affect the customer value and satisfaction of public information services used by the researchers in SMEs(small-and-medium size enterprises). The results, based on statistical analyses of a survey conducted in Korea are as follows; 1) the customer value is positively influenced by the service quality; 2) the customer value, in turn, is positively associated with the customer satisfaction; 3) information needs moderate the relationship between service quality and customer value but does not moderate the relationship between the customer value and satisfaction.Our findings propose the importance of the service quality and the effort to maximize the information customer values.

■ keyword : | Information Quality | Customer Value | Satisfaction | Information Needs |

Ⅰ. Introduction

　As the importance of customer value have been recognized more and more, corporations seek to enhance it. Perceived value represents "the benefits gained relatively to the cost provided by a customer"[1]. Whereas, customer satisfaction is the reaction of the customer regarding the values gained from that a product or service provided, the positive or negative emotions of a customer regarding the

values gained as the result of using what is provided, Preceding studies of marketing have pointed out that corporate success and competitive advantage depend on the increase of service quality, perceived value, and customer satisfaction[2-4].

Consideration of consumer value, however, shows a tendency of focusing on primarily profit-oriented organizations in the private sector. Recently, in all over the world, the importance of customer-oriented activities by public organizations has been manifested. In fact, to create value in the minds of customers by meeting their needs more effectively than competitors, as embodied in the marketing concept[5], organizations needs to undertake a process of value creation and delivery[6], be it private or public. Such issues related to not-for-profit organizations have been somewhat neglected by comparison, although they are of equal applicability albeit with modification[7]. In this regard, Kotler[6] and Andersen[8] emphasize the importance of adopting a 'marketing mind-set'. Information services would not be an exception to this[9].

Whereas for normal products, value is the amount paid for a product or service, and is measured with the monetary exchange value as in what will be given to acquire something, the value of information refers to the value assigned to information acquired by or created by an organization or an individual. Since analysis of literature reveals that the studies of service quality in the information industry are still scarce, this study attempts to analyze the relationships among service quality, perceived value, customer satisfaction. The result would be able to provide valuable information for information services providers to manage their service quality and customer value. Through a search with an integrated model of service quality, customer value and customer satisfaction in a service industry, Oh[10]

found out that customer value is an important factor which needs to be considered in service quality and consumer satisfaction studies or vice versa. It is proposed that information goods, being non-exclusive and non-competitive, have characteristics similar to public goods. In view of rare prior research, this paper will try to conceptualize the factors to be involved in the customer value and satisfaction of public information.

The paper's structure will include a brief literature review of the relationship between information quality, customer value and satisfaction. The second part formulates a research hypothesis and mode. The third part will include data collection and analysis to test the hypotheses. The paper will conclude with a discussion, implications of the research as well as limitations and future research direction

II. Theoretical background and hypotheses development

Although there have been several researches to examine the factors which contribute the customer value and satisfaction, relatively very little is known about the public information service-using SMEs. After a comprehensive review of preceding researches on IS success, Delone & Mc Lean's[11] conclude with a model of interrelationship between six IS success variable categories. The categories are system quality, information quality, IS use, user satisfaction, individual and organization impact. Based on this model, Seddon[12] suggests an alternative model that added the net benefits of IS use. In an updated model, the authors included several variables such as the service quality, intention to use and net benefits of IS customers. More recently, marketing researchers and managers have begun focusing on

the hitherto ignored role of customer value as a key strategic variable to help explain repeat purchase behavioral relationship commitment[13][14].

Previous studies in different industries asserts that service quality positively influences customer satisfaction and perceived value is positively related to customer satisfaction. However, theories are still wrestling with the question of which constructs best measure IS success[15]. For example, as for the relationship between the system quality and user satisfaction, the results of researches are different. While Thomas and Hawking[16] and Johnson et al[17] found the relationship, Turpin and Hersh[18] did not substantiate such a relationship.   In this context, this study was conducted to evaluate the effect of customer value within the existing information service quality and customer satisfaction framework. This study was conducted, in particular, in a public information service, which is offered without payment by the users.

To address this research gap, we tried to examine the following research hypotheses.

- H1 : Information service quality is positively associated with customer value
- H2 : Customer value is positively associated with customer satisfaction

In addition to the proposed relationships, we also test for moderating effects of information needs of users. A moderated relationship occurs when a relationship is found to hold for some categories of a sample but not others(Bryman and Cramer 1999)[19]. Information need implies that a person has some problems to solve, and requires information to make optimum decision about how to solve the problems. We assume that relationship between information service quality and customer value, and satisfaction depend on the degree of purposive seeking for information as a consequence of a need to satisfy some goal.

We included the information need as the relationship between those variables might be different according to the information need (depending on the task of user).

- H3 : Information needs plays a moderating role on the relationship between info. service quality and customer value
- H4 : Information needs plays a moderating role on the relationship between customer value and satisfaction

[Figure 1] presents a proposed model, focused mainly on the post information use process. The model incorporated the key variables discussed above. In addition, information need and use rate of researchers were also included in the model. Information need was included in the model as a moderating variable, while information use rate was considered as a control variable. In addition, we wanted to verify that the information use rate does not influence the dependent variables in the model.
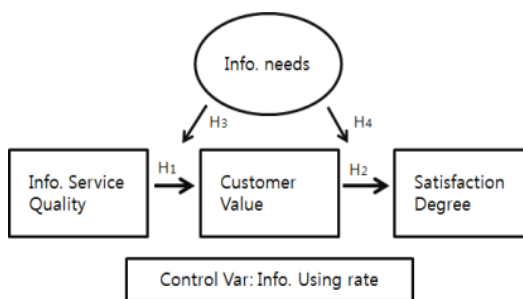

Figure 1. Research model

To test these hypotheses, a questionnaire-survey approach was adopted for data collection. The Satisfaction was measured by 5 items using 5-point Likert Scale from "Strongly disagree" to "Strongly agree" adapted from[19][20].

Table 1. Measurement

Variables	Measurements	Previous Researches
Dependent variable	Satisfaction Degree	Turpin S, Hersh W (2001) Li Xiao, Subhasish Dasgupta.(2002)
Mediating variable	Perceived Value	Hi-Ming Teng(2011) Bose R, Sugumaran V(2003)\ Chen Z, Alan J, Dubinsky A(2003) Wang Y. S.(2008) Johnson DS, F Bardhi, DT Dunn(2008) Cheng Lai-Yu ,1 Ching-Chow Yang,
Independent variable	Information service quality	Parasuraman A, Grewal D(2000) Wang Y. S.(2008) Cheng Lai-Yu ,1 Ching-Chow Yang, Hi-Ming Teng(2011)
Moderating variable	Information needs	Bunn MD(1993)

Customer value, mediating variable in our study, was measured by eight items with the likert scale which were adapted from different researches [14][17][2-23]. Information quality was adapted from[14] and [21][24], whilst information need, moderating variable, was adapted from [25] and [26]. Information using rate, control variable, was adapted from [27].

A sample frame of the companies was provided by a government supporting organization named KISTI(Korea Institute of Science and Technology Information. Research population was about 30,000 SMEs and data were collected for 2 weeks from August 5 to August 18 in 2014 with self-ministered questionnaires through internet web survey. Among the 272 copies of returned questionnaires, 124 were from the SMEs. The largest proportion of respondents aged between 31 and 40 years. The mean hours of information use was 2.2 per week. More than half of the respondents specialized in the applied research in their enterprises. We used multiple question items to measure each investigated questions, on a five-point Likert scale. Each construct had a Cronbach's alpha exceeding 0.9

III. Experimental Results

An exploratory factor analysis was conducted to assess their unidimensionality. In an effort to test the construct validity of the instruments, a principal-component factor analysis was conducted with Varimax rotation. The results of the factor analysis and Cronbach's alphas for the multi-item measures used in this study show that the multi-item measures have satisfactory validity and reliability. The internal consistency reliability of the variables was evaluated by computing Cronbach's as. The Cronbach's a values of the variables, which were all over 0.900, which is satisfactory. The reliability and validity of the research variables were all, therefore, considered acceptable.

Table 2. Factor analysis and reliability test result

	Info. Quality	Customer Value	Satisfaction Degree	Cronbach Alpha
Appropriate classification of information	0.692			
Relevance of information	0.726			
Timeliness of information	0.763			
Differentiation of Info. Service	0.798			
Ease of link	0.787			
Info. Quality upgrade	0.781			. 916
Convenience in use	0.811			
Speed of information search	0.805			
Bulletine board	0.826			
Sreen design	0.779			
System for user convenience	0.848			

Reduced time required for R&D idea	0.809		
Savings in usage fees for external information	0.711		
Reduced costs for using research equipment	0.796		
Reduced time to search for experts	0.796	. 919	
Time saving of R&D	0.752		
Savings in usage fees for external information	0.808		
Convenience of use of research equipment	0.835		
Higher value in using NTIS Info.	0.88		
Continued usage of NTIS Info.		0.855	
Willing to use more often than now.		0.885	
Will use NTIS Info. Preferentially		0.927	0.941
Willing to recommend		0.937	
Feel satisfied in general		0.895	
Eigen Value	7.209	4.055	1.986	
% of Var.	60.074	81.09	15.742	
% Cumul.	60.074	81.09	64.577	

To estimate the causal model of this study, a hierarchical regression analysis was performed through 4 stages.

At stage 1 and 4, customer value and satisfaction were regressed on the control variable. At stage 2,3 and 5,6, in addition to the control variable, theoretical variables and interaction terms were entered into the regression equation.

As shown in the Table, the control variable was not significant. The hierarchical regression results at stage 2 shows the service quality has significant effect on the customer value.

In addition, at stage 4, customer value has positive impact on satisfaction. On the other hand, information needs, which is the moderating variable of this research, partly has significant effect on the dependent variables.

This result means that information needs moderate the relationship between service quality and customer value(Stage 3) but does not moderate the relationships between the customer value and satisfaction(Stage 6).

Table 3. Regression Analysis Results

Dependent		Regression coefficients(β)			Regression coefficients(β)		
		Model 1 Cust. Value	Model 2 Cust. Value	Model 3 Cust. Value	Model 4 Satis. degree	Model 5 Satis. degree	Model 6 Satis. degree
Cont. var.	Info. using rate	−.010	−.072	−.063	.103	.041	.037
Indpt. var.	SVC quality		.596***	.414***			
	Cust. value					.382***	.548**
Mod. var.	Info. needs		.274***			.470***	.662**
Inter. terms	IS*IN			.383**			
	CV*IN						−.324
R² (Adjusted R²)		.000 (.910)	.603 (.593)	.588 (.578)	.011 (.003)	.584 (.574)	.587 (.574)
⊿R² (p)		.000 (.254)	.603 (.000)	.588 (.000)	.011 (.254)	.584 (.000)	.587 (.000)

note; *p⟨.1, **p⟨.05, ***p⟨.01;

Ⅳ. Conclusions, Implications and future research

The results of this study point out that the customer value is positively influenced by the service quality. The customer value, in turn, is positively associated with the customer satisfaction. It has to be noted, most obviously, that the service quality and the

customer value should be improved in order to higher the satisfaction degree of the information customers.

The results of this study propose the importance of the service quality and the effort to maximize the information customer values in the public services. We could also recognize the necessity to extend the contribution of 'customer-oriented' information marketing strategies. The creation of customer value is the base of the development of a meaningful marketing orientation, and is a challenge that more public sector and not-for-profit organizations will have to willingly face. As the dichotomy between the public and private sectors becomes gradually vague[17], public sector organizations are being increasingly subjected to both legislative and competitive pressures which are forcing them to reconsider their relationships with users and customers.

In addition, information needs moderate the relationship between service quality and customer value. Information service providers needs to aware that to boost the customer value of the users through enhancing the service quality, they should focus more on the custmers who are more in need of information.

Yet this study also has several limitations that should be considered when interpreting our results. First, we obtained our data mostly from the researchers in SMEs. Second, the information services we studied are specific to KISTI(Korea Institute of Science and Technology Information); therefore our findings might not be generalizable to other information services. Therefore, this research needs to be duplicated in the private organizations or other public institutions to get a more comprehensive external validity of the study. It should be also noted that the model should be further developed and tested to explore the variables to improve the satisfaction as well as the performances in the SMEs in the

information services. In addition, we used question items derived from conceptual analogies in preceding research.

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