The Effect of TBSS Relational Benefit on Relational Commitment and Willingness to Buy Again: Focusing on Customers Using Technology-Based Self Service of Airlines

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Abstract: Background/Objectives: This research, in the TBSS situations, identified the effects of what customers perceive as relational benefits on relational commitment and the willingness to buy again. Methods/Statistical analysis: The samples were chosen by convenience sampling with the help of a research assistant who had been given directions on research purposes in advance. Using SPSS 22.0, frequency analysis was done on collected data, and the structural equation model was tested using AMOS 21.0. Those copies which were filled out not seriously or by customers who had not used TBSS were eliminated from statistical analysis. Findings: First, the hypothesis that relational benefit has positive (+) effects on relational commitment was tested. The findings were that, while there were significant positive (+) relationship in the paths of psychological benefit -> relational commitment, and economic benefit -> relational commitment, there were no significant relationship in the paths of social benefit -> relational commitment, and customization benefit -> relational commitment. Second, relational commitment has positive (+) effects on the willingness to buy again was tested. It was found that there is significant positive (+) relationship in the path of relational commitment -> the willingness to buy again. Third, relational benefit has positive (+) effects on the willingness to buy again was tested. It was found that while there are positive effects in the paths of social benefit -> the willingness to buy again, psychological benefit -> the willingness to buy again, and economic benefit -> the willingness to buy again, there is no significant effect in the path of customization benefit -> the willingness to buy again. Improvements/Applications: This research was performed to help airlines to lead customers to have willingness to buy again and secure loyal customers through positive use of TBSS services.

Keywords: Relational Benefits, Relational Commitment, Willingness to Buy Again, Airline, Technology-Based Self-Service, IT Industry

I. INTRODUCTION

With the development of information technology, corporate management environment is rapidly changing. Thus, corporations perceive adoption of information technology as an essential subject for rapid treatment of work, improvement of customer service, and efficient production method, etc[1]. In particular, in the service industry, companies frequently use technology instead of humanistic interaction in delivering services to customers. Today, transactions mediated by technology-based interaction means are increasing, and many customers demand or prefer technology-based self service rather than what workers of service companies provide. Technology-based self service means service generated by customers through technological interface without direct intervention of service providers[2]. That is, technology-based self service is all the technological contact means where customers are let to generate service for themselves and use them[3].

Such TBSS have been applied in various areas. For example, Korean Airlines, ever since it adopted kiosk, a self check-in system in 2007, has introduced various TBSS such as mobile service, self check-in, self bag drop, and smart immigration service, etc. Successful TBSS can provide the company with various positive effects including standardized service delivery, reduction of manpower, higher satisfaction of customers as well as reduction of cost. Customers can also get benefits like saving of time and efforts, convenient access and use, and reduction of waiting time[3].

In the age of the 4th industrial revolution, information and communication technology has developed, and there are increasing numbers of companies adopting TBSS. To customers, the increasing number of TBSS means a wider range of choices for the related service. But, to companies, it means competition for the related service becomes tougher[2]. Thus, to make customers interact continuously with TBSS, companies need to pay attention to developing long-term relationship with their customers.

The concept which appeared in relation with long-term relationship with customers is relationship benefit. Relationship benefit is the benefit a company can provide its customers if the company has long-term relationship with customers, and can understand them better. That is, those benefits are all kinds of benefits the company provide customers with along with fundamental benefits of its core service[4]. That is, relationship benefits are realized not by a single interaction, but by a multiple number of interactions. For a long-term relationship between a company and its customers to be maintained, there should be benefits to both sides. When both sides get benefits, such relationship can continue, and quality of the relationship can improve. Thus, relationship benefits are essential for the formation of a relationship[5].

Researches on such relational benefit are mainly related with the situation where service receivers have man-to-man contacts with service providers. But, recently, with the advent of TBSS, there are also discussions on relationship benefit regarding interaction with machine.

Relational benefit is roughly composed of four dimensions: social benefit, psychological benefit, economic benefit, and customization benefit. First, social benefit includes relations and friendship between customers and service providers, and recognition of each customer by service provider[4,6]. These benefits happen in the situation where there are frequent contacts between customers and service providers. In the TBSS situation where customers and machine interact, as customers cannot perceive relations and friendship with machine, this research wants to define it as perception of self-service technology to each customer. Namely, technology, by possessing personal information of customers, can provide social benefit where it can recognize the customer.

Second, psychological benefit is what customers feel comfort and safety in making relations with a specific service provider, meaning trust and confidence to the service provider. Namely, it is defined as feeling that anxiety is reducing, and belief in trustfulness of the service provider[4]. In TBSS situation, customers are confident that they can receive not heterogeneous, but standardized service, and that they can get more effective services through technology[7], they can behave psychological condition like comfortableness in using a related service. Third, economic benefit can be divided into monetary benefit and non-monetary benefit. Monetary benefit is related with discount or price reduction provided to customers. Non-monetary benefit is related with what customers can enjoy quicker service because of long relationship with the service provider, or can save time because the customer need not make efforts to find out other service providers[4]. Forth, customization benefit is special treatment or additional individual service given to long-time customers.[4] TBSS can be used in time and place when and where customers want and can solve strengthened needs of customers[2].

Except for that, there are other dimensions of researches on relationship benefits such as social benefit, confidence benefit, and special treatment benefit. Social benefit was explained in the same way as existing researches, and special treatment benefit was explained was explained as combination of economic benefit and customization benefit, and confidence benefit was analyzed as being similar to psychological benefit[4,7,8].

Meanwhile, relational commitment can be said to be long-term orientation on business relationship based on mutual emotional tie. It is belief of customers that benefits they can earn by maintaining the relationship with service provider will be greater than terminating it[9]. Existing researches on relational benefit have shown that, by the mediation of customer satisfaction, trust, and relational commitment, relational benefit has effects on dependent variables such as willingness to revisit and customer loyalty, etc. What customers perceive as various types relational benefits is important factor which makes them immerse more to the relationship, and maintain it. Customers want to get other benefits except for core services, leading them to have long-term relationship with service providers[4]. That is, relational commitment is strengthened if customer receives additional service as well as core service. Many researchers suggest that confidence benefit, social benefit, and special treatment benefit boost relational commitment[4,7].

Among relational benefits, confidence benefit, social benefit, and special treatment benefit were shown to increase customer satisfaction, and confidence benefit and special treatment benefit were shown to have significant effect on customer loyalty[10,11]. In addition, in the non-personal situation where there is little interaction between customer and service provider, confidence benefit, social benefit, and special treatment benefit were shown to boost customer loyalty and relational orientation[4]. In the online business environment, confidence benefit and special treatment benefit were shown to increase customer loyalty[8].

As discussed up to now, in the service environment where technology is involved, customers perceive various relational benefits, and such relational benefits increase relational commitment, customer satisfaction and loyalty. In the TBSS situation, we can expect that what customers perceive as relational benefits will have positive effects on relational commitment and the willingness to use the service continuously. Accordingly, this research set the following hypotheses.

H 1: Relational benefit has positive (+) effects on relational commitment

H 2: Relational commitment has positive (+) effects on the willingness to buy again

H 3: Relational benefit has positive (+) effects on the willingness to buy again

II. MATERIALS AND METHODS

To test the hypotheses set in this research, this research made the questionnaire. The survey targets were customers of airlines who had experiences of using TBSSs to issue tickets, enter the inspection gates and use self bag drop, etc. The questionnaire was distributed to airplane passengers who were waiting for airplanes at the Incheon Airport on November 25, 2017. In total, 250 copies of the questionnaire were distributed, and 248 were collected, and 242 were used in final analysis. The samples were chosen by convenience sampling with the help of a research assistant who had been given directions on research purposes in advance. Using SPSS 22.0, frequency analysis was done on collected data, and the structural equation model was tested using AMOS 21.0. Those copies which were filled out not seriously or by customers who had not used TBSS were eliminated from statistical analysis.

III. RESULTS AND DISCUSSION

3.1. General Characteristics

The demographic characteristics of respondents are shown in Table 1.

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They consisted of 53.7% of males and 46.3% of females. The age distribution of them was as follows: 44.2% of the 20s, 44.6% of the 30s, 10.7% of the 40s, and 0.4% of the 50s or above. In their educational levels, 41.7% were university graduates, and 14.9% were educated in graduate school or above, 12.0% were high school graduates, and 31.4% were technical college graduates. The proportion of the number of times they had used TBSS services were as follows: 57.8% of them used them 1 or 2 times; 20.3% of them did 3-4 times; 19.8% did 5-6 times.

Table 1: General Characteristics

Distinction		Frequency	Percentage
Gender	Female	130	53.7
	Male	112	46.3
Age	20-29	107	44.2
	30-39	108	44.6
	40-49	26	10.7
	50 and above	1	0.4
Education	High school	29	12.0
	2-year College graduates	76	31.4
	Undergraduate school	101	41.7
	Graduates	36	14.9
Frequency of use	1-2	140	57.8
	3-4	49	20.3
	5-6	48	19.8
	7 and over	5	2.1
Total		242	100

3.2. Reliability and Validity of Variables

To test validities of scales, this research did confirmatory factor analysis. The findings of the analysis are shown in Table 2. Model fit indicators GFI=.943, NFI=.973 satisfied the criteria. T values of parameter estimates of all items in confirmatory factor analysis were statistically significant. Construct reliability values were .924~.966. Averaged variance extracted (AVE) was .783~.934, satisfying acceptable criteria (concept reliability of .6 or over; AVE of .5 or over.). This, the model satisfied the reliability[12].

Test of discriminant validity needs differences in measurement results of different constructing concepts[12]. First, 95% confidence interval calculated using correlation matrix should not include "1", and AVE should be larger than R-square between all constructing concepts. Tests of all variables in this way led to Table 3 showing significant differences between all variables. And, AVE is larger than R-square between all constructing concepts, satisfying the criteria of discriminant validity.

Table 2: Confirmatory factor analysis for the measurement model

Factor	ITEM	Std. factor loadin	t Value	SMC	AVE
Psychological benefit	PB 1	.787	---	.759	.503
	PB 2	.766	16.718 **	.780	
	PB 3	.626	14.072 **	.694	
	PB 4	.648	16.711 **	.771	
Economic benefit	EB1	.764	---	.569	.576
	EB 2	.862	19.198 **	.771	
	EB 3	.796	19.708 **	.519	
Social benefit	SB 1	.777	---	.611	.604
	SB 2	.714	10.884 **	.656	
	SB 3	.730	10.467 **	.552	
Customization benefit	CB 1	.777	---	.567	.674
	CB 2	.680	18.023 **	.589	
	CB 3	.535	13.302 **	.692	
Relational commitment	RC 1	.534	---	.688	.598
	RC 2	.595	11.008 **	.643	
	RC 3	.767	16.098 **	.558	
	RC 4	.757	10.778	.625	
Willingness to buy again	WB 1	.615	---	.551	.554
	WB 2	.665	17.371 **	.684	
	WB 3	.703	19.134 **	.766	
	WB 4	.778	18.178 **	.777	

Table 3: Correlation Matrix

	A	B	C	D	E	F
Psychological benefit: A	**.709**					
Economic benefit: B	.562	**.758**				
Social benefit: C	.435	.461	**.800**			
Customization benefit: D	.307	.135	.212	**.820**		
Relational commitment: E	.339	.222	.224	.301	**.773**	
Willingness to buy again: F	.301	.254	.364	.471	.201	**.744**

3.3. Analyzing Structural Equation Model

The findings of hypothesis tests of the structural equation model are shown in Table 4. This research estimated fits and parameters of path analysis using maximum likelihood method. In general fit, absolute general fit index GFI was .909, and normed fit index NFI was .947, and Adjusted Goodness-of-fit-index AGFI was .885. All of the indices showed the fit of the model. The model was found to be good to structurally explain the relationship between structural concepts. The results of hypothesis tests are as follows.

First, relational benefit has positive (+) effects on relational commitment was tested. The findings were that, while there were significant positive (+) relationship in the paths of psychological benefit → relational commitment, and economic benefit → relational commitment, there were no significant relationship in the paths of social benefit → relational commitment, and customization benefit → relational commitment.

Second, relational commitment has positive (+) effects on the willingness to buy again was tested. It was found that there is significant positive (+) relationship in the path of relational commitment → the willingness to buy again.

Third, relational benefit has positive (+) effects on the willingness to buy again was tested. It was found that while there are positive effects in the paths of social benefit → the willingness to buy again, psychological benefit → the willingness to buy again, and economic benefit → the willingness to buy again, there is no significant effect in the path of customization benefit → the willingness to buy again.

Table 4: Structure model path analysis

H	Path	Estimate	S.E	C.R	p value
1-1	Psychological benefit →Relational commitment	.227	.042	2.275**	.001
1-2	Economic benefit →Relational commitment	.209	.038	3.228**	.000
1-3	Social benefit →Relational commitment	.017	.032	0.217	.300
1-4	Customization benefit →Relational commitment	.001	.027	1.492	.220
2	Relational commitment →Willingness to buy again	.442	.043	4.376**	.000
3-1	Psychological benefit →Willingness to buy again	.114	.021	2.012**	.002
3-2	Economic benefit →Willingness to buy again	.146	.027	2.362**	.000
3-3	Social benefit → willingness to buy again	.261	.043	2.887**	.000
3-4	Customization benefit →Willingness to buy again	.034	.031	0.557	.326

**:=t-statistic ($\geqq$ 1.96) sig. level of $p<0.05$

IV. CONCLUSION

This research, in the TBSS situations, identified the effects of what customers perceive as relational benefits on relational commitment and the willingness to buy again. Relational benefits were divided into social benefit, psychological benefit, economic benefit, and customization benefit. The findings of the analysis are as follows.

First, this research set the hypothesis that relational benefit has positive (+) effects on relational commitment (H1). Analysis found out that, while psychological benefit and economic benefit have positive effects on relational commitment, social benefit and customization benefit do not. That is, when customers use TBSS services, the more they perceive that such services can be trusted and that there will be little possibility to go wrong, the higher their relational commitment get. And, it was found that the more they perceive that they receive needed services and save time, the higher their relational commitment get. In contrast, it was found that when customers use TBSS, they do not perceive that TBSS considers preference of each customer and provides differentiated service to each of them.

Accordingly, to make customers use TBSS functions easily, it seems necessary for airlines to simplify design formats of the screen and guidance procedure, which will make customers more at home in using TBSS functions. In addition, airlines should develop programs to provide economic benefits which make customers perceive them highly such as letting them to accumulate millage, or providing lounge use rights.

Second, relational commitment has positive (+) effects on the willingness to buy again was tested. It means that the more customers like a certain airline, the more likely they are to use it again. Accordingly, airlines need to make efforts to lead customers to have rational and economic considerations, and emotional favor and identity with them. To achieve them, they need to provide various relational benefits, and develop programs to strengthen relational commitment between airlines and customers.

Third, relational benefit has positive (+) effects on the willingness to buy again was tested. It was found that while there are positive effects of social benefit, psychological benefit, and economic benefit on the willingness to buy again, there is no significant effect of customization benefit on the willingness to buy again. Namely, the more customers perceive that TBSS is aware of my information and know them well, the more likely they are willing to use the service continuously. And, the more they perceive that they can save time and the TBSS service is efficient, the more likely they are willing to use the service continuously.

To promote relational commitment and the willingness to buy again through TBSS, airlines should provide reliable information, and they should pay attention to the speed of such services to make customers feel that they can save time. TBSS should be able to efficiently provide information customers want. To make the TBSS service similar to man-to-man service, they should design TBSS programs to ask additional questions to customers and guide them to additional services. Namely, TBSS service should provide detailed guide on frequently asked questions and benefits customers can get, and requirements in riding airplanes.

Also, it is necessary for airlines to periodically check the TBSS service system, and update it. Furthermore, to reduce the uncertainty of using TBSS, it is also necessary for airlines to adopt instant after-sales service by sending text messages or e-mails to customers who used the TBSS service system to guide them to know that work was done mechanically. By doing such after-sales service, airlines can eliminate anxiety of customers that something can go wrong. Reservation and ticket issuance proceed in a series of steps, and customers can get psychological benefits through confirmation of the proceeding steps.

This research was performed to help airlines to lead customers to have willingness to buy again and secure loyal customers through positive use of TBSS services. This research wishes that various researches on TBSS will contribute to realization of service through IT in the aviation service area. This research divided relational benefits into 4 sub-dimensions, and wishes that more dimensions will be developed in future studies. And, it seems that the relationship between relational commitment and willingness to buy again needs to include other variables in the future studies.

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