

# 초고속 인터넷 서비스의 선택 만족도에 대한 연구

## Choice Satisfaction of the Broadband Internet Network Services

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### 초 록

본 연구에서는 초고속 인터넷 서비스에 대한 실증분석을 통하여 선택 만족도의 선행 변수에 관해 알아보았다. 초고속 인터넷 서비스를 대상으로 해당 서비스를 이용하고 있는 481명의 설문데이터를 수집하여 분석한 결과, 선택 상황과 관련된 변수들은 선택 만족도에는 영향을 주지만, 서비스 만족도에는 영향을 주지 않는다는 것이 확인되었다. 선택 만족도는 서비스 만족도와 함께 소비자들의 전환의도에는 중요한 영향을 미치는 것으로 나타났지만, 추천의도에 미치는 영향력은 서비스 만족도 보다 낮은 것으로 나타났다. 또한 본 연구에서는 서비스 만족도와 선택 만족도가 다르게 나타난 소비자 집단에 대해서도 분석하였다. 이러한 결과는 선택 만족도가 서비스 만족도와는 다르게 구별되는 개념이라는 것을 보여준다. 따라서 소비자가 선택 과정이나 선택 결과에 만족하도록 할 수 있다면, 마케팅 관리자는 소비자의 충성도를 높일 수 있을 것이다. 마지막으로 이러한 실증분석 결과를 토대로 시사점과 향후 연구 방향에 대하여 논의하였다.

### ABSTRACT

This study empirically investigates the antecedents and outcomes of choice satisfaction in the context of choosing and using the broadband Internet network services. Hypotheses are tested with regression models analyzing a survey data of 481 consumers of the broadband Internet network services in Korea. Our results show that choice satisfaction is affected by choice contexts while service satisfaction is not. Choice satisfaction is as important as service satisfaction for formation of switching intentions whereas it is less important for formation of recommendation intentions. Also, consumers characteristics are reported for those whose service satisfaction and choice satisfaction are not consistent. Choice satisfaction is a distinctive concept different from service satisfaction. Marketers can make consumers more satisfied not only by managing delivery of services but also by managing their choice contexts. That will increase the loyalty of their consumers. This study finds unique determinants of choice satisfaction. Further studies are needed to clarify

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boundary conditions regarding the effects of choice contexts on choice satisfaction.

**키워드** : 선택만족, 서비스만족, 선택상황, 초고속 인터넷 서비스  
Choice Satisfaction, Service Satisfaction, Choice Contexts, Broadband Internet Network Services

## 1. Introduction

*“Choosing the right Internet solutions is the key to the success of Internet service businesses. Thus, for managers of Internet services, it is critical to choose the best solutions for their businesses. I had to make a deliberate decision taking a long time to choose a shopping mall solution for our business. I am satisfied that I made a right choice at that time”*

(www.pointshop.co.kr)

As described in the comment by a user of a shopping mall solution, consumers often show their satisfaction with choices they made. Although consumer satisfaction has been one of the most important concepts studied in marketing for more than 30 years [4, 11, 18, 19, 22, 27, 28], choice satisfaction has received little attention in marketing, decision research, and psychology [12, 29].

A stream of studies focused on regrets resulting from consumer decisions [24]. These studies investigated antecedents and consequences of an important response to consumer choices, i.e., comparisons of the performance of chosen and foregone alternatives. Regret is a concept closely related to the

choice satisfaction but is mainly focused on negative aspects of choice outcomes. Recently, studies by [10, 12, 29, 30] differentiated decision satisfaction from consumption satisfaction as the satisfaction with the purchase decision process itself.

In this study, we define choice satisfaction as satisfaction with the choice process and its outcome. Especially, we differentiate the satisfaction with the choice process and its outcome, i.e., choice satisfaction, from that with the service or product, i.e., service or product satisfaction. The purpose of this study is to empirically investigate antecedents and outcomes of choice satisfaction using the data collected from consumers of the Broadband Internet Network Services in Korea. We also identify characteristics of consumers whose service satisfaction and choice satisfaction are not consistent.

To address the research purposes, we present a framework that shows the perspective of this study in the next session. Hypotheses will be presented, too. Then, our empirical data will be described followed by a descriptive analysis of the data. Finally, after test results are presented, we discuss contributions and managerial implications of this study.

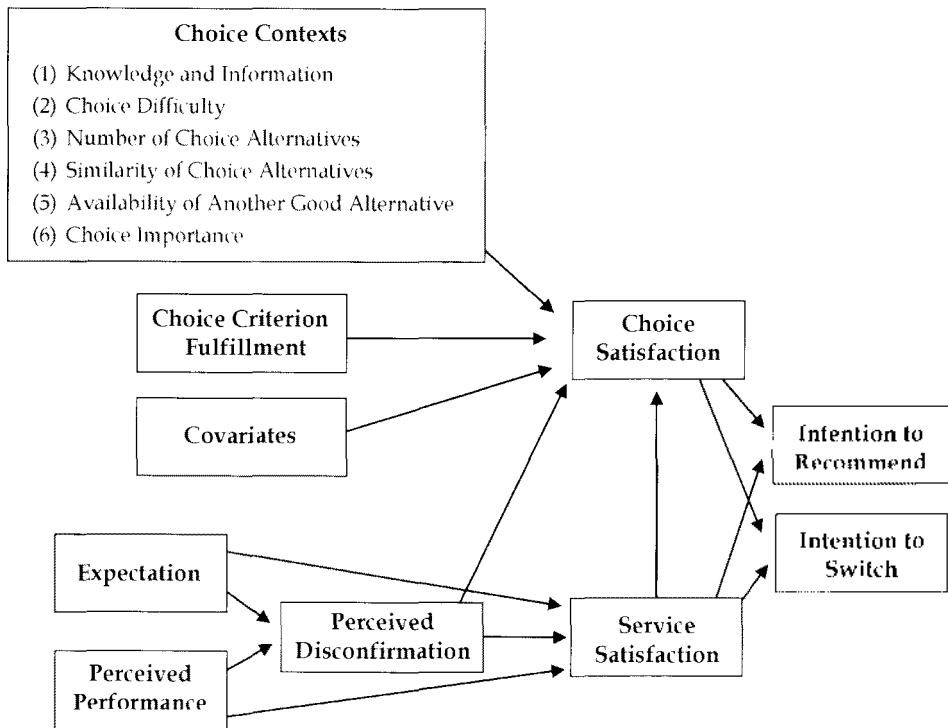
## 2. Framework and Hypotheses

The proposition that consumers experience satisfaction not only with chosen services or products but also with the decisions is not new in marketing [8, 26]. Also, behavioral decision theorists identified that there is utility coming from decision making, i.e., decision utility. It is different from utility coming from experiencing the chosen alternative, i.e., experience utility [14]. Furthermore, it is suggested that there is utility coming from a good bargain of purchasing a product, i.e., transaction utility, which is different from that coming from the needs of the product, i.e., acquisition utility [21]. Studies of cognitive dissonance [9], regret [24], decision avoidance [2], option attachment [5], and anticipatory satisfaction of choices [15, 20] presumed that there is satisfaction or dissatisfaction with the choice outcome or the choice process. However, only recently have researchers started to focus directly on satisfaction with the choice process or outcome [12, 29].

Conceptualizing choice satisfaction as satisfaction with choice process and its outcome, this study empirically investigates the issues related to the choice satisfaction in the context of choosing and using the broadband Internet network services. Using the data collected from consumers of the broadband Internet services, we attempt to address the following questions : (1) What are the important ante-

cedents of choice satisfaction? Are they different from those of service satisfaction? (2) What are the effects of choice satisfaction on intention to recommend the brand or intention to switch to its competing brands? (3) Under what circumstances a consumer's choice satisfaction and service satisfaction are not consistent?

Our analysis is based on a framework presented in <Figure 1>. A premise is that service satisfaction and choice satisfaction are two distinctive concepts. For the service satisfaction, we adopt the expectations-disconfirmation model [17, 19, 23] assuming that main determinants are expectation, evaluation, and disconfirmation between the expectation and evaluation for important aspects of the service. We suppose that choice satisfaction is directly affected by the service satisfaction and disconfirmation between the expectation and evaluation of important aspects as the concept includes not only satisfaction with the choice process but also that with its outcome. But, unlike service satisfaction, choice satisfaction is supposed to be affected by choice context characteristics. Also, it is assumed that perceived fulfillment of the most important reasons for choice is one of important factors affecting the choice satisfaction. The outcome variables of choice satisfaction we focus on are intention to recommend the brand to others and intention to switch to other brands. Based on the framework, we propose hypotheses below.



(Figure 1) A Framework for Investigating Antecedents and Effects of Choice Satisfaction

Choice satisfaction is supposed to be affected by the choice context as well as service satisfaction and disconfirmation of expectation and evaluation of main service aspects. As the choice contexts, in this study, we consider (1) choice knowledge and information, (2) choice difficulty, (3) number of choice alternatives, (4) similarity of choice alternatives, (5) availability of another good alternative, and (6) choice importance.

It is well known that with the better product category knowledge, consumers can make better decisions [1, 16, 20]. Heitmann et al. [12] show that product category knowledge affects

the choice confidence and justifiability of choice positively. These, in turn, affect decision satisfaction and consumption satisfaction, positively. They suggest that expert compared to novice consumers can have more confidence in identifying a preferred option. Also, they easily find reasons for choosing one option over another. Following the results of previous studies, we hypothesize that knowledge and information regarding the service and brands will positively affect the choice satisfaction.

Empirical evidence of previous studies tends to show that decision difficulty negatively affects satisfaction with the choice

process. Fitzsimons [10] finds that stockouts can increase decision satisfaction when it reduces the decision difficulty. Zhang and Fitzsimons [29] also find that consumers are more satisfied with their decisions when options can be compared with aligned attributes as they make decisions easier. Following the evidence, we hypothesize that the choice difficulty negatively affects the choice satisfaction.

As consumers perceive a greater number of choice alternatives, they may perceive the decision more difficult. Iyengar and Lepper [13] find that increasing the number of alternatives of jams to purchase from 6 to 24 decreased the purchase rate and satisfaction. It increased the regret, too. Heitmann et al. [12] also consider the number of alternatives as an important component of product overload that increases the evaluation cost and anticipated regret. However, if increased number of alternatives does not increase the choice difficulty significantly, it can provide the consumer better information for the choice, or allow him or her to choose a closer-to ideal option. Chernev [7] shows that if a consumer has an ideal point, his or her preference of the chosen alternative is increased as there are more alternatives to choose from. For the broadband Internet network service, consumers typically have 2 to 4 brands in their consideration set. Thus, under this context where the number of alternatives is not overwhelming, we propose that the number of perceived alternatives has a positive effect on choice satisfaction.

The composition of choice alternatives with different characteristics are known to affect choices as well as accompanying feelings and regrets. For example, choosers are more satisfied than nonchoosers only when they are selecting from among more preferred alternatives [3]. In general, assuming the preference of presented alternatives are held constant, evaluation cost and regret are likely to be increased when alternatives are similar to one another, or when there is another attractive alternative. Thus, similarity among alternatives and existence of more than one attractive alternative are hypothesized to affect choice satisfaction negatively.

Perceived importance affects the perceived relevance of a choice. The perceived relevance is the essential characteristic of involvement [6]. As consumers are more involved with the choice, they are likely to make more elaborated and prudent decisions. The cautiousness in the choice may not directly affect choice satisfaction [5]. However, consumers who perceive the choice to be more important are likely to justify their choices. It will positively affect their choice satisfaction. Thus, we predict a positive effect of perceived choice importance on choice satisfaction.

Finally, we assume that fulfillment of the main reason for choosing will positively affect choice satisfaction. Disconfirmation between expectation and evaluation represent the consumer's general perception of fulfillment of expectations. On the other hand, fulfillment of

the main reason for choosing focuses on whether the most important reason for choosing has been met or not. We summarize our predictions as hypothesis 1-1 and 1-2.

Hypothesis 1-1 : Choice satisfaction is positively affected by

- (1) service satisfaction,
- (2) positive disconfirmation between expectation and evaluation of main aspects of the service,
- (3) information and knowledge for choice,
- (4) number of alternatives to choose from,
- (5) choice importance, and
- (6) fulfillment of the most important reason for choosing.

Hypothesis 1-2 : Choice satisfaction is negatively affected by

- (1) choice difficulty,
- (2) similarity of choice alternatives, and
- (3) availability of another attractive alternative.

Although it is not explicitly presented as a hypothesis, our framework expects that service satisfaction is significantly affected by expectation, evaluation and disconfirmation between the expectation and evaluation of the service aspects. However, unlike choice satisfaction, it is not expected to be affected by choice context factors.

As outcomes of choice satisfaction and service satisfaction, we consider intention to

recommend the brand to other consumers and intention to switch brands. We expect both the service and choice satisfaction to affect the recommendation intention positively and the switching intention negatively. However, studies of regret show that experiencing regret may lead to brand switching even when consumers are satisfied with the purchased brand [24]. Also, studies of stockouts show that consumers may change their store-switching behavior, but not change their consumption satisfaction with the chosen brand [10]. Therefore, we predict that switching intention will be affected by choice satisfaction more sensitively than service satisfaction. On the other hand, we predict that recommendation intention will be more sensitively affected by service satisfaction than choice satisfaction.

Hypothesis 2 :

- (1) Intention to recommend the chosen brand is more sensitively affected by service satisfaction than choice satisfaction.
- (2) Intention to switch brands is more sensitively affected by choice satisfaction than service satisfaction.

### 3. Description and Descriptive Analysis of Data

The population of this study is consumers of the broadband Internet network services in Korea. The data for the study were collected

〈Table 1〉 Measurement Items

Category and Factors	Items	Factor loading	Eigen Value	Cronbach's Alpha
Service Expectations	(Expectation for)			
Utility expectation	Fun	.772	2.411	.801
	Information acquisition	.851		
	Utilization of spare time	.803		
Product variety expectation	Variety in service items	.684	3.121	.853
	Variety in price system	.783		
	Variety in linked services	.782		
	Variety in augmented services	.773		
Service quality expectation	Stability of connection	.853	2.41	.823
	Free from Network problems	.841		
	Consumer Service	.762		
Service Evaluations	(Evaluation of)			
Utility Evaluation	Fun	.875	2.54	.851
	Information acquisition	.832		
	Utilization of spare time	.837		
Product variety evaluation	Variety of service items	.843	1.686	.775
	Variety of linked services	.843		
Service quality evaluation	Speed	.873	1.746	.840
	Stability of connections	.873		
Price evaluation	Monthly rate	.762	3.591	.901
	Contracted discounts	.865		
	Variety in the price system	.703		
	Price compared to the service level	.724		
	Overall evaluation of price	.786		
Positive Disconfirmations	Service and price	.842	2.825	.814
	Speed and stability	.745		
	Consumer service	.784		
	Overall Internet service	.673		
Choice Context				
Knowledge and Information	Availability of information	.723	2.986	.859
	Knowledge of service providers	.872		
	Knowledge of the service	.851		
	Knowledge of subscribing process	.805		

Category and Factors	Items	Factor loading	Eigen Value	Cronbach's Alpha
Choice difficulty	Difficulty of choosing one	.855	2.630	.856
	Hesitation of choosing one	.893		
	Taking a long time to choose one	.889		
Choice importance	Importance to the respondent	.810	1.620	.750
	Demand for a careful judgment	.810		
Number of alternatives	Availability of many alternatives	N.A. <sup>1</sup>	N.A.	N.A.
Similarity of alternatives	No distinctive difference compared to other alternatives	N.A.	N.A.	N.A.
Availability of another attractive alternative	Availability of another attractive alternative	N.A.	N.A.	N.A.
Service satisfaction	Overall satisfaction with the service	.821	2.803	.814
	Overall quality of the service	.838		
	Overall quality compared to the price	.817		
	Positive image of the service brand	.840		
Choice satisfaction	Excellent choice	.721	1.142	.837
	Wise choice	.721		

1: N.A. : Not applicable (Measured by one item)

between December 2007 and February 2008. A quota sample of 1,600 consumers was interviewed personally. Respondents were recruited outside a quota sample reflecting location. They live in seven major areas of Korea, Seoul, Busan, Daegu, Daejeon, Gwangju, Incheon and Ulsan. Among the interviewed, we excluded consumers who chose the current brand more than two years ago, assuming that their responses to choice related questions may be unreliable. Remaining 481 responses were used for the further analysis.

The profiles of 481 respondents are as follows : 48.4% were female; 31.6% used Korea Telecom, 20.8% Powercom, 13.1% SK

broadband, and 34.5% other brands; 6.9% were teenagers, 28.5% were in the twenties, 27.9% in the thirties, 21.0% in the forties, and 15.8% were in the fifties or older; 40.7% lived in Seoul or its vicinity, 13.7% in the southwest area, 21.0% in the southeast area, and 24.5% in the middle area.

<Table 1> presents the items used to measure concepts analyzed in the empirical study. The 7-point scales were used asking the degree of agreement for each measurement item. The items were specifically developed for users of broadband Internet network services. Service expectations were measured for three different dimensions: utility, variety,



and quality of the service. Service evaluations were measured for four dimensions: utility, variety, stability and speed, and price. Because actual price is presented when the choice is made, evaluation for the price level is measured but not the expectation. For disconfirmation, four items was used asking how much the perceived performance exceeded the expectation. It was measured in the positive direction.

Choice context was measured along six dimensions : knowledge and information, choice difficulty, choice importance, number of alternatives, similarity among alternatives, and availability of another attractive alternative. Service satisfaction was measured focusing on the overall evaluation of the Internet service. On the other hand, choice satisfaction was measured directly asking how excellent and how wise the choice was.

In addition, the respondents answered a question asking the most important reason for making his or her choice. Among the respondents, 27.7% noted improving the speed, 15.8% better price, 12.1% better stability of connection, 12.5% recommendation by others,

11.2% promotional events, and 10.6% changes in the environment as their main reason for making the choice. Changes in the environment include contract expirations, bundling services with cable TVs, and special contracts made for the whole neighborhood. Finally, we measured covariates such as gender, age, areas of living, the brand name being used, type of services, time since the current subscription was made, average usage time per day, occupations, family size, and total experience with broadband Internet network services. On the average, respondents had 60.0 months of total experience using broadband Internet network services. Their average time for using the current services was 9.4 months.

<Table 2> shows the distribution of respondents along service satisfaction and choice satisfaction dimensions. For each dimension, the table shows the number of respondents who rated their satisfaction level higher than 4 (High group) and equal to or less than 4 (Low group). According to this classification, service satisfaction and choice satisfaction of 203 respondents (42.2%) are found to be inconsistent. Especially, among those

<Table 2> Number of Respondents in Service and Choice Satisfaction Groups

		Choice Satisfaction		
		Low	High	Total
Service Satisfaction	Low	91 (81.3%)	21 (18.8%)	112
	High	182 (49.3%)	187 (50.7%)	369
	Total	273 (56.8%)	208 (43.2%)	481

who are in the high service satisfaction group, 49.3% showed low choice satisfaction. On the other hand, only 18.8% among those who are in the low service satisfaction group had high choice satisfaction.

To identify different characteristics of these four groups, we applied the cross-tabulation analysis for nonmetric variables, i.e., gender, education level, residence area, and reason for choosing, and the ANOVA analysis for metric variables, i.e., age, time from the subscription, daily usage time, monthly fee, perceived burden for the monthly fee, number of users, total period of using a brand, and total tele-communications cost. The four groups showed significant differences in the reason for choosing ( $\chi^2=26.6, p=.086$ ), residence area ( $\chi^2=74.78, p=.000$ ), education level ( $\chi^2=14.0, p$

$.030$ ), daily usage time ( $F=3.49, p=.016$ ), time from the subscription ( $F=3.40, p=.018$ ), and perceived burden of monthly fee ( $F=2.99, p=.031$ ). In the following description, we will use HSS-HCS, HSS-LCS, LSS-HCS, LSS-LCS groups to denote high service satisfaction and high choice satisfaction, high service satisfaction and low choice satisfaction, low service satisfaction and high choice satisfaction, and low service satisfaction and low choice satisfaction group, respectively. <Table 3> shows the characteristics of consumers in each group.

<Table 3> shows that LSS-LCS and LSS-HCS consumers are the heavy users of the Internet services. They use the service 141 and 139 minutes per day, respectively, compared to the average of 116 minutes. One of the distinctive characteristics of the

<Table 3> Characteristics of Consumers in Service and Choice Satisfaction Groups

		Choice Satisfaction	
		High	Low
Service Satisfaction	High	Light usage	Light Usage
		High education level	Low education level
		Speed and Stability	Recommendation
		Best service area	Moderate service area
		Feel less burden for price	Feel more burden for price
		Shortest time from subscription	Average time from subscription
	Low	Heavy usage	Heavy Usage
		Low education level	High education level
		Environmental changes	Promotion events
		Worst service area	Worst service area
		Feel more burden for price	Feel more burden for price
		Longest time from subscription	Longer than average time from subscription

inconsistent consumers is the relatively lower level of education. Among consumers of the LSS-HCS group, 66.7% did not attend a college. Also, among consumers of the HSS-LCS group, 58.8% did not attend a college. In contrast, only 39.6% of the LSS-LCS and 47.1% of HSS-HCS consumers did not attend a college.

It is also interesting that consumer who chose a brand for different reasons show different distributions among the four groups <Table 4>. For example, among the consumers who chose a brand for speed, 42.1% are in the HSS-HCS group. Among those who chose a brand for stability, 48.3% are in this group, too. These percentages are much higher than the average percentage of 38.9% calculated across all the reasons for choosing. Among the consumers who chose a brand because of promotional events, 25.9% are in the LSS-LCS group compared to the average of 18.9%. Thus, it is clear that promotional events

do not play a role of reinforcement for satisfaction. Rather, it appears to be used as an external cue to which consumers make attribution of their choice. Among the consumers who chose a brand because of a recommendation of others, 53.3% are in the HSS-LCS group compared to the average of 37.8%. Thus, recommendation appears to make consumers feel good with the services but not with the choices. Among the consumers who chose a brand due to changes in the environment, 11.8% are in the LSS-HCS group compared to the average of 4.4%. These consumers may have a justification for their choices. But, they are not satisfied with the chosen services.

Among the consumers living in Seoul or its vicinity 54.1% are in the HSS-HCS group. This is an area that the broadband Internet network is served best in Korea. In contrast, among those living in the southwest area where service is the worst, only 24.2% are in

<Table 4> Reasons for Choosing and Distribution of Consumers

		HSS-HCS*	HSS-LCS	LSS-HCS	LSS-LCS	Total
Reasons For Choice	Speed	56 (42.1%)	51 (38.3%)	4 (3.0%)	22 (16.5%)	133
	Stability	28 (48.3%)	19 (32.8%)	3 (5.2%)	8 (13.8%)	58
	Price	29 (38.2%)	28 (36.8%)	2 (2.6%)	17 (22.4%)	76
	Promotional events	20 (37.0%)	18 (33.3%)	2 (3.7%)	14 (25.9%)	54
	Recommendation	22 (36.7%)	32 (53.3%)	1 (1.7%)	5 (8.3%)	60
	Environmental changes	18 (35.3%)	16 (31.4%)	6 (11.8%)	11 (21.6%)	51
	Others	14 (28.6%)	18 (36.7%)	3 (6.1%)	14 (28.6%)	49
Total		187 (38.9%)	182 (37.8%)	21 (4.4%)	91 (18.9%)	481

\* HSS stands for High Service Satisfaction, LSS Low Service Satisfaction, HCS High Choice Satisfaction, and LCS Low Choice Satisfaction.

this group. On the other hand, 39.4% of them are in the LSS-LCS group. On the average, only 18.9% are in the LSS-LCS group. Furthermore, 13.6% of those living in this area are in the LSS-HCS group. Only 4.4% are in the LSS-HCS group on the average. Interestingly, among the consumers living in the southeast area where the service level is in the middle, 52.5% are in the HSS-LCS group. This number can be compared to the average level of 37.8%. Also, consumers in the HSS-HCS group perceived relatively less burden for the price and subscribed the current service relatively more recently than those in the other groups.

### Hypothesis Testing

To test the hypotheses H1-1 and H1 2, we used the following regression model.

$$\begin{aligned}
 \text{(M1) Choice Satisfaction} &= \beta_0 + \beta_1 \text{ Service} \\
 &\text{Satisfaction} + \beta_2 \text{ Disconfirmation} \\
 &+ \beta_{31} \text{ EXUtility} + \beta_{32} \text{ EXVariety} \\
 &+ \beta_{33} \text{ EXQuality} + \beta_{11} \text{ EVUtility} \\
 &+ \beta_{12} \text{ EVVariety} + \beta_{13} \text{ EVQuality} \\
 &- \beta_{14} \text{ EVPrice} \\
 &+ \beta_{71} \text{ CHInformation} \\
 &+ \beta_{72} \text{ CHDifficulty} \\
 &+ \beta_{73} \text{ CHIImportance} \\
 &- \beta_{51} \text{ CHNumber} \\
 &+ \beta_{55} \text{ CHSimilarity} \\
 &+ \beta_{56} \text{ CHAttractive} + \beta_{61} \text{ RESpeed} \\
 &+ \beta_{62} \text{ REStability} + \beta_{63} \text{ REprice}
 \end{aligned}$$

$$\begin{aligned}
 &+ \beta_{64} \text{ RERecommendation} \\
 &+ \beta_{65} \text{ REEnvironment} \\
 &+ \beta_{66} \text{ REPromotion} \\
 &- \beta_{71} \text{ FRSpeed} + \beta_{72} \text{ FRStability} \\
 &- \beta_{73} \text{ FRPrice} \\
 &+ \sum_i \beta_{s_i} \text{ Covariate}(i) \tag{1}
 \end{aligned}$$

where EX stands for expectation, EV evaluation, CH choice context, RE main reason for choice, and FR fulfillment of the main reason. RE variables were constructed as dummies for representing speed, stability, price, recommendation, environmental change, and promotion event. FR was operationalized by multiplying the main reason dummy with the evaluation score for the variable denoted as the main reason. Considered covariates are the measured covariates described in the measurement items.

A model with the same independent variables was also analyzed for service satisfaction after eliminating the service satisfaction from the list of independent variables. We will denote the service satisfaction model M2. We expected that estimates of CH variables will be significant for the choice satisfaction model M1 but not for model M2. The estimation results of models M1 and M2 are summarized in <Table 5>.

To test H2, we analyzed the following models M3 and M4.

$$\begin{aligned}
 \text{(M3) Recommendation Intention} &= \beta_0 + \beta_1 \\
 &\text{Choice Satisfaction}
 \end{aligned}$$

〈Table 5〉 Estimation Results of Models

	Choice Satisfaction(M1)	Service Satisfaction(M2)	Recommendation Intention(M3)	Switch Intention (M4)
R Square	0.612	0.735	0.512	0.299
F ratio	18.925	34.290	16.315	6.634
Coefficients				
Constant	0.481	1.579	1.927	5.475
Service Satisfaction	0.137	NA	0.484	-0.253
Choice Satisfaction	NA	NA	0.128	0.169
Disconfirmation	0.627	0.162	-0.050	-0.120
EXUtility	0.022	0.037	NA	NA
EXVariety	-0.007	0.010	NA	NA
EXQuality	-0.066	0.047	NA	NA
EVUtility	-0.005	0.007	-0.033	0.045
EVVariety	0.050	0.030	0.125	0.087
EVQuality	0.052	0.348	0.136	-0.191
EVPrice	-0.060	0.167	0.068	0.098
CHInformation	0.112	0.023	NA	NA
CHDifficulty	0.119	-0.018	NA	NA
CHImportance	0.058	-0.019	NA	NA
CHNumber	0.063	0.012	NA	NA
CHSimilarity	-0.009	0.044	NA	NA
CHAttractive	-0.135	0.007	NA	NA
RESpeed	-0.029	-0.071	-0.359	0.302
REStability	0.392	0.200	0.004	0.813
REprice	0.285	-0.478	0.828	2.014
RERecommendation	0.036	0.048	0.114	0.163
REEnvironment	0.004	0.016	0.148	0.381
REPromotion	-0.253	0.004	0.157	0.181
FIRSspeed	0.000	0.010	0.077	0.030
FIRStability	0.075	-0.047	0.001	-0.152
FIRPrice	0.034	0.088	0.181	-0.362
Covariate		Areas of living:		Age : 0.010
		Southwest : -.107		Past experience of
		Southeast : .122		Switching : -.290
	Areas of living :	Gender : -.081	None	Daily usage time :
	Southwest : .189	Daily usage time : .000		0.001
Southeast : .223	Number of users : -.035		Areas of living :	
	Telecommunications		Southwest : 0.104	
	cost : .000*		Southeast : -.269	

1) NA : Not Applicable.

\* Significant at  $\alpha = .1$ . \*\* Significant at  $\alpha = .05$ . \*\*\* Significant at  $\alpha = .01$ .

$$\begin{aligned}
 &+ \beta_2 \text{ Service Satisfaction} \\
 &+ \beta_3 \text{ Disconfirmation} \\
 &+ \beta_{41} \text{ EVUtility} + \beta_{42} \text{ EVVariety} \\
 &+ \beta_{43} \text{ EVQuality} + \beta_{44} \text{ EVPrice} \\
 &- \beta_{51} \text{ RESpeed} + \beta_{52} \text{ REStability} \\
 &+ \beta_{53} \text{ REprice} \\
 &+ \beta_{54} \text{ RERecommendation} \\
 &+ \beta_{55} \text{ REEnvironment} \\
 &+ \beta_{56} \text{ REPromotion} \\
 &+ \beta_{61} \text{ FRSspeed} \\
 &+ \beta_{62} \text{ FRStability} \\
 &+ \beta_{63} \text{ FRPrice} \\
 &+ \sum_i \beta_{7i} \text{ Covariate}(i) \quad (2)
 \end{aligned}$$

A model with the same independent variables was also applied for analyzing the switching intention to other brands. We will denote the model M4. In models M3 and M4, expectations and choice context variables were excluded from the list of independent variables. They are not supposed to directly affect the outcome variables in our framework. The estimation results of M3 and M4 are also presented in <Table 5.>

<Table 5> shows that all the choice context variables significantly affect choice satisfaction ( $\alpha = .10$ ). Among them, information and knowledge for choice (CHInformation), number of alternatives to choose from (CHNumber), and choice importance (CHImportance) affect choice satisfaction positively as predicted. Also, similarity of choice alternatives (CHSimilarity) and availability of another at

tractive alternative (CHIAttractive) influence choice satisfaction negatively as predicted. However, choice difficulty is shown to affect choice satisfaction positively rather than negatively. It is possible that choice difficulty has an inverted U-shape effect on choice satisfaction. If a choice is not too overwhelming, increased choice difficulty may increase the use of cognitive resources and efforts for making choices. It may also increase the feeling of achievement when the choice is made appropriately. In contrast, only one of the choice contexts, i.e., similarity of choice alternatives (CHSimilarity), is found to be significant for service satisfaction in M2 ( $\alpha = .10$ ).

Also, as predicted service satisfaction and positive disconfirmation are found to be significant, too. However, our analysis did not show the significant effect for fulfillment variables of the most important reason for choosing. This result might be unique to the broadband Internet network services as consumers appear to evaluate multiple criteria rather than the most important reason for their choices. It is also shown that choice satisfaction is negatively affected if consumers choose brands due to promotional events. Service characteristics of different areas affect choice satisfaction, too.

As expected, expectation or evaluation factors do not affect choice satisfaction significantly. In contrast, we can see in the results of M2 that evaluation of stability of the service and that of price level significantly affect

service satisfaction. Choosing a brand because of price has a negative effect on service satisfaction. However, among those who chose a brand for price, those who evaluated the price highly showed higher service satisfaction. Service satisfaction is also related to different service characteristics of different areas, gender, daily usage time, number of users, and telecommunications costs.

Overall, among the hypotheses in 1-1, (1), (2), (3), (4), and (5) were supported but (6) were not. Among the hypotheses in 1-2, (2) and (3) were supported but (1) was not. The comparison of results between M1 and M2 generally supports our premise that choice contexts affect the choice satisfaction but not the service satisfaction.

The hypothesis 2 was tested by comparing whether the coefficient estimates of choice satisfaction and service satisfaction are significantly different for each model. We applied the model comparison F-tests using M3 and M4 as full models. Restricted models were those that assume two coefficients of service satisfaction and choice satisfaction were the same, respectively. For the recommendation intention model M3, the null hypothesis that two coefficients 0.484 and 0.128 are the same is rejected ( $\alpha = .01$ ), as  $F(1,451) = 15.40$ . On the other hand, for the switching intention model M4, the null hypothesis of estimates 0.253 and  $-0.169$  are the same could not be rejected ( $\alpha = .10$ ) as  $F(1,451) = .26$ . Thus, recommendation intention is found to be significantly

more sensitive to service satisfaction than choice satisfaction, supporting (1) of H2. However, switching intention is not significantly more sensitive to choice satisfaction than service satisfaction. It does not support (2) of H2. Unlike for M3, choice satisfaction plays an equally important role to service satisfaction for the formation of intention to switch brands. Overall, the results support a proposition that service satisfaction is more important than choice satisfaction for recommendation intention but the same is not true of switching intention.

<Table 5> also shows that recommendation intention is affected by evaluation of service variety, and stability. However, the sign is negative for evaluation of service variety. It is possible that consumers perceive service variety as not a recommendable property for network services. In contrast, evaluation of network stability which is more basic to the broadband Internet network services affects the recommendation positively. Evaluation of network stability lowers switching intention, too. Those who chose a brand for price showed lower intention to recommend their brands and higher intention to switch to other brands compared to those who chose for other reasons. But, among those, consumers who are satisfied with their price have lower intention to switch brands. Finally, those who chose a brand because of environmental changes were likely to have higher intention to switch brands.

## 4. Discussion

Choice satisfaction is a distinctive concept different from service satisfaction. We empirically investigate the antecedents and outcomes of choice satisfaction in the context of choosing and using the broadband Internet network services. Using empirical data of consumers of the broadband Internet network services, we analyzed the antecedents and outcomes of choice satisfaction. Our research supports the framework in <Figure 1> that choice satisfaction is affected by choice contexts whereas service satisfaction is not. Choice satisfaction is positively related to choice difficulty, information and knowledge, choice importance, and number of alternatives, and negatively related to similarity of choice alternatives and availability of another attractive alternative. Choice satisfaction is also affected by service satisfaction and disconfirmation between expectation and evaluation of important service aspects. Furthermore, we find that compared to service satisfaction, choice satisfaction is less important for recommendation intention of the service brand, but is equally important for switching intention to other brands.

These results show that choice satisfaction is a distinctive concept different from service satisfaction. If marketers can make consumers satisfied with their choice process and outcome, they can increase the loyalty of their consumers. Providing better information or

making the choice more important to consumers may help increase choice satisfaction. Increasing choice difficulty and adding more alternatives may be helpful, too. This may be true only when the choice difficulty is not overwhelming or there are not too many alternatives to consider. The situation of choosing the broadband Internet network services appears to have met the condition. Differentiating services from those of competitors should increase choice satisfaction, too.

And, we show that choice satisfaction is worth receiving research attention. Using real world data, it provides rare empirical evidence that choice satisfaction is different from service satisfaction in the antecedents and in the effects on the outcomes.

Also, we find that a substantial number of consumers are satisfied with the services but not with their choices. Disproportionately more consumers who choose brands by others' recommendations are in this high service satisfaction and low choice satisfaction group. Many of them are living in the area where the service level is moderate. Also, their average education level is lower than those who show consistency between choice and service satisfaction.

This is one of rare studies that empirically focused on choice satisfaction using real world data collected from actual consumers. We need further studies analyzing the relationships between service and choice satisfaction. Especially, we need to make clear



the boundary conditions regarding the effects of choice contexts on choice satisfaction. For example, it is likely that effects of choice difficulty and number of alternatives are of inverted U-shape.

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