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Factors Influencing Customer Loyalty of Mobile Phone Service: Empirical Evidence from Koreans

Hyung Seok Lee, Ph.D.

Assistant Professor, Department of Business Administration, Sahmyook University, Seoul, Korea

Postal Address: Gongneung 2-dong, Nowon-gu, Seoul, 139-742 Korea

Author's Personal/Organizational Website: www.syu.ac.kr

Email: [hslee \(at\) syu.ac.kr](mailto:hslee@syu.ac.kr)

Dr. Hyung Seok Lee is an Assistant Professor in the department of Business Administration at Sahmyook University, Seoul, Korea. His current research interests are on IT Service, Operations Management and Quantitative Modeling. His work has previously been published in Journal of Internet Banking and Commerce, Electronic Commerce Research and Applications, and International Journal of Business and Management.

Abstract

The purpose of this paper is to verify the relationships among service quality, perceived value, customer satisfaction, and customer loyalty in mobile phone service. The study conducted an empirical research. A total of 384 mobile phone users' responses were collected from Seoul in Korea. The findings show that service quality positively influences customer loyalty. In addition, perceived value and customer satisfaction positively affects customer loyalty respectively. For customers with high perceived service quality, perceived value, and satisfaction, they have a strong loyalty.

Keywords: **customer loyalty; service quality; perceived value; customer satisfaction**

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INTRODUCTION

The introduction of mobile phones in everyday life has dramatically changed lifestyles worldwide. More than 3 billion people use mobile phones for personal and business purposes (*The Korea Herald*, December 22 2008). In addition, many subscribers use mobile phones to surf the Internet, watch movies, do their shopping, and make financial transactions, among others. In particular, most Koreans use mobile phones on a daily basis, giving the country one of the highest subscription rates in the Asia-Pacific region. According to the International Telecommunication Union (ITU), the number of mobile phone subscribers in Korea reached 43.5 million in 2007, indicating that 90.2 individuals out of every 100 had access to mobile phone services. Furthermore, Korea's telecommunications market is expected to grow by 3.9% to \$53.1 billion in 2010, helped by expanding wireless internet services and a recovery in the advertising industry. In addition, the number of mobile phone subscribers is expected to increase by 2.8% in 2010 from a year earlier, reaching a penetration rate of 101.1%. The mobile phone penetration rate refers to the number of active mobile numbers as a percentage of a specific population (*The Korea Herald*, November 13, December 15 2009).

As the mobile phone service market is already saturated, service providers need to implement marketing strategies focusing on customer retention, rather than on acquiring new subscribers to increase market shares (Turel and Serenko, 2006). As such, Korean mobile carriers have also realized the importance of customer-oriented marketing strategies, which could help them to maintain their competitiveness and profitability by preventing existing customers from churning to other carriers. This retention-based competition has intensified through the elimination of switching barriers, which allows users to switch service providers while keeping the same handset. Since January 2004, the implement of number portability regulations has allowed customers to retain their phone number when they switch to another service provider; this in turn has sharply increased competition in the mobile phone market.

The changes in Korea's competitive mobile phone service market demonstrate the importance of identifying the factors that influence customer loyalty. The motivation for understanding and improving loyalty emerges from empirically validated relations among customer loyalty, retention, and profitability (Reichheld, 1996; Turel and Serenko, 2006). Thus, in the mobile phone service sector, it would be important to develop marketing strategies that promote profitability by retaining existing customers through strengthened customer loyalty and value (Kim, Park and Jeong, 2004).

It is widely known that previous studies examining customers' purchases of services have generally focused on the link between service quality and purchase intentions (Cronin, Brady, Brand, Hightower and Shemwell, 1997). However, this raises a question for managers because it is also well known that customers do not always buy the highest quality service (Olshavsky, 1985).

In this regard, this study aims to show that value-based customer management and the understanding of customers play a very important role in the mobile phone service market. The study also suggests that, as with prior research, the concept of perceived value should be applied to the mobile phone service market to gain a deeper understanding of customer satisfaction and customer loyalty.

THEORETICAL BACKGROUND AND HYPOTHESES

1) Service Quality

There have been a considerable number of empirical studies focusing on the dimensions of service quality (Cronin and Taylor, 1992; Dabholkar, Thorpe and Rentz, 1996; Parasuraman, Zeithaml and Berry, 1988; Parasuraman, Berry and Zeithaml, 1991). Grönroos (1984) proposed two dimensions of service quality: technical quality and functional quality. Technical quality is “what a customer receives,” and functional quality is “how a service is provided or delivered.” Parasuraman et al. (1988) defined perceived service quality as “the consumer’s judgment about the superiority or excellence of a product.” They suggested the SERVQUAL model conceptualized as a difference between perceptions and expectations. The model consists of five specific dimensions: tangibles, reliability, responsiveness, assurance, and empathy. Cronin and Taylor (1992) and Teas (1993) argued that performance measures eliminated expectations measures is superior to the “perceptions-minus-expectations” measures. Parasuraman, Zeithaml, and Berry (1994) proposed a reduced measure with 21 items and the use of nine-point scales, and they professed the collapsibility of the five dimensions, where responsiveness, assurance, and empathy would be blended into one dimension. In sum, service quality can be described as a form of attitude that is related but not equivalent to satisfaction, which results from the comparison of expectations with performance (Bolton and Drew, 1991; Cronin and Taylor, 1992; Parasuraman et al., 1988).

According to Babin, Darden, and Griffin (1994), perceived value is a consumer’s perception of the subjective worth of some activity or object by considering all net benefits and costs of consumption. In their study, the consumer’s consumption behavior is the global service received from a specific service provider. Thus, higher perceived service quality would positively affect the consumer’s perception of value toward the service. Several empirical studies examining the mobile phone service market revealed the a link between service quality and perceived value (Kuo, Wu and Deng, 2009; Lai, Griffin and Babin, 2009; Turel and Serenko, 2006; Wang, Lo and Yang, 2004). Thus, Hypothesis 1 is proposed as follows:

H1. Service quality has a positive effect on perceived value.

The SERVQUAL model provides a theoretical basis for examining the relationship between service quality and customer satisfaction (Tung, 2004). Prior research has revealed that there has been much debate as to whether service quality dimensions are antecedents of customer satisfaction (Cronin and Taylor, 1992; Zeithaml, Berry and Parasuraman, 1996). Some empirical studies have shown that service quality is related to customer satisfaction (Cronin and Taylor, 1992; Levesque and McDougall, 1996; Taylor and Baker, 1994; Zeithaml et al., 1996; McDougall and Levesque, 2000), and previous studies examining the mobile phone service markets suggested that service quality positively affects customer satisfaction (Kim et al., 2004; Kuo et al, 2009; Tung, 2004; Turel and Serenko, 2006). Thus, Hypothesis 2 is proposed as follows:

H2. Service quality has a positive effect on customer satisfaction.

Service quality is considered to be a key factor in firms’ financial performance, that is, profitability. Service quality not only entices new customers away from competitive firms but also induces customers’ repurchase intentions (Venetis and Ghauri, 2000). Bloemer,

Ruyter, and Wetzels (1998) and Aydin and Özer (2005) indicated that service quality is positively related to customer loyalty. That is, behavioral intentions such as repurchase intentions, recommending a provider, and resistance to switching are dependent on service quality (Cronin et al., 1997, Cronin, Brady and Hult, 2000; Levesque and McDougall, 1996; Zeithaml et al., 1996). In addition, Aydin and Özer (2005) and Kuo et al. (2009) suggested that there is a positive relationship between service quality and customer loyalty. Thus, Hypothesis 3 is proposed as follows:

H3. Service quality has a positive effect on customer loyalty.

2) Perceived Value

Perceived value can be roughly defined as the results or the benefits customers receive relative to total costs. Simply defined, value is the difference between perceived benefits and costs (McDougall and Levesque, 2000).

Zeithaml (1988) investigated the consumer's perception of value through a literature review and an exploratory, qualitative study. She defined value as follows: (1) value is low price; (2) value is whatever I want in a product; (3) value is the quality I get for the price I pay; and (4) value is what I get for what I give. She then combined these into a single definition: "perceived value is the consumer's overall assessment of utility of product based on perceptions of what is received and what is given" (Tung, 2004). Bolton and Drew (1991) extended the definition of perceived product value by Zeithaml (1988) to perceived service value.

Thus, perceived value can be described as a cognitive tradeoff between perceptions of quality and sacrifice. Quality has been identified as the "gets" feature, whereas sacrifice has been identified as the "gives" (Drew and Bolton, 1987). A critical point that has been formed regarding the conceptualization of value is that the monetary cost is a typical component of what consumers sacrifice to receive a service offered. That is, the perceived financial price or actual price of the service is the primary monetary sacrifice involved in the service transaction (Brady and Robertson, 1999). Sacrifice is a construct that includes non-monetary costs needed to consume a service, such as time and efforts (Cronin et al., 1997). Therefore, Hypothesis 4 is proposed as follows:

H4. Sacrifice has a negative effect on perceived value.

The link between perceived value and customer satisfaction has been debated in the service management literature. According to Rust and Oliver (1994), value is an encounter-specific input to customer satisfaction. Anderson, Fornell, and Lehmann (1994), and Ravald and Grönroos (1996) argued that value is related to customer satisfaction. Cronin et al. (2000) showed that perceived value is a significant predictor of satisfaction. Fornell, Johnson, Anderson, Cha, and Bryant (1996) and McDougall and Levesque (2000) contended that perceived value is directly and positively related to customer satisfaction. Previous empirical studies examining the relationship between perceived value and customer satisfaction in the context of the mobile phone service market have found considerable evidence that perceived value directly influences customer satisfaction (Kuo et al, 2009; Tung, 2004; Turel and Serenko, 2006; Wang et al, 2004). Thus, Hypothesis 5 is proposed as follows:

H5. Perceived value has a positive effect on customer satisfaction.

The relationship between perceived value and customer loyalty has aroused service practitioners' interest. Marketing professionals have recognized perceived value as one of the key drivers improving customer loyalty. Several researchers have proposed that perceived value positively influences customer loyalty (Cronin et al., 2000; Kuo et al., 2009; Lai et al., 2009; Lin and Wang, 2006; Wang et al., 2004). Cronin et al. (2000) revealed that there is a positive relationship between perceived value and customer loyalty. Wang et al. (2004) and Lin and Wang (2006) also revealed that perceived value has a positive effect on customer loyalty. Recently, Kuo et al. (2009) and Lai et al. (2009) found that perceived value is positively related to customer loyalty. Therefore, Hypothesis 6 is proposed as follows:

H6. Perceived value has a positive effect on customer loyalty.

3) Customer Satisfaction and Loyalty

Customer satisfaction results from experiencing a service quality encounter and comparing that encounter with what was expected (Oliver, 1980). Satisfaction judgments have a broader range of dimensions that include quality aspects, whereas the dimensions underlying quality are fairly specific (Oliver, 1993). From an operational definition point of view, satisfaction can be conceived as an attitude because it can be assessed as the combined level of satisfaction with various attributes of a product or a service (Churchill and Surprenant, 1982). There is also sufficient evidence that customer satisfaction can be viewed as an attitude (Yi, 1990). According to LaTour and Peat (1979), satisfaction is a post-decision experience construct, whereas an attitude is a pre-decision construct (Caruana, Money and Berthon, 2000).

Customer satisfaction can be defined as a consumer's fulfillment response; that is, it is a judgment that "a product or service feature, or product or service itself, provides a pleasurable level of consumption-related fulfillment" (Oliver, 1997; Zeithaml and Bitner, 2000). As customer satisfaction reflects the degree of a customer's positive feeling about a service provider, it is important for service providers to understand customers' perception of their services. On the other hand, a high level of customer satisfaction may have a positive effect on customer loyalty (Deng, Lu, Wei and Zhang, 2009).

Zeithaml et al. (1996) suggested that favorable behavioral intentions are related to service providers' ability to maintain their customers' loyalty and persuade them to recommend their services to potential customers.

In addition, many studies have examined repurchase intention (Tung, 2004). Cronin and Taylor (1992) proposed that customer satisfaction significantly influences future purchase intentions. Turel and Serenko (2006) and Kuo et al. (2009) examined the mobile phone service market and showed that customer satisfaction has a positive impact on purchase intentions. Customer loyalty is the consequence of customer satisfaction. It has also been found to be a key determinant of a firm's long-term viability (Deng et al., 2009). Satisfied customers may use mobile phone services more than those who are not satisfied, and they may be more likely to continue their use and recommend the service to their friends and relatives (Zeithaml et al., 1996). Fornell (1992) stated that higher customer loyalty depends mainly on higher customer

satisfaction. As such, Hypothesis 7 is proposed as follows:

H7. Customer satisfaction has a positive effect on customer loyalty.

METHODOLOGY

1) Measures

The items used to measure the constructs to confirm content validity were adapted from previous studies. Service quality is the customer's overall perceived assessment of service performance. Three items were used to measure the overall service quality: "Overall service quality of this provider," These items were adapted from Cronin et al. (1997) and McDougall and Levesque (2000) and assessed by using a seven-point scale. The first item was anchored by "poor" and "excellent." The second item was anchored by "inferior" and "superior," and the third item, "low standards" and "high standards." These items measured the overall perceived quality of services based on a series of adjectives. Sacrifice is what customers give up to obtain a service, including monetary costs such as money and non-monetary costs such as opportunity costs, time, and efforts (Cronin et al., 1997; Kuo et al., 2009; Zeithaml, 1988). Sacrifice was measured by three items: "The price charged to use this service," "The effort I must make to receive the service offered," and "The time required to use this service." These items were adapted from Cronin et al. (1997) and Brady and Robertson (1999) and measured on a seven-point scale ranging from "very low" to "very high."

Perceived value is a tradeoff between what customers receive and what they sacrifice. Perceived value was measured by two items: "Overall, the value of this provider's services to me" and "The benefit I get for the price I pay to use the services." These items were adapted from Cronin et al. (1997) and Zeithaml (1988) and assessed on a seven-point scale ranging from "very low" to "very high."

Customer satisfaction is a customer's positive feeling about a service provider and the overall evaluation of the consumption experience (Lai et al., 2009 ; Oliver , 1997; Stank, Goldsby and Vickery, 1999). Two items were used to measure customer satisfaction: "Overall, how satisfied are you with this provider" and "Overall, how satisfied are you with the services you receive from this provider." These items were adapted from Lai et al. (2009) and measured on a seven-point scale ranging from "very dissatisfied" to "very satisfied."

Customer loyalty is related to a service provider's ability to maintain its customers' loyalty and persuade them to recommend its services to potential customers (Zeithaml et al., 1996). Two items were used to measure customer loyalty: "The probability that I would use this service provider again" and "The likelihood that I would recommend this provider's services to a friend." These items were adapted from Cronin et al. (1997) and Brady and Robertson (1999) and measured on a seven-point scale ranging from " very low" to "very high." Thus, all measures employed in the present study have been widely used in prior service marketing research (Brady and Robertson, 1999; Cronin and Taylor, 1992; Jamal and Naser, 2002; Oliver, 1997; Yi, 1990; Zeithaml et al., 1996; Zeithaml and Bitner, 2000).

2) Data Collection

The data were collected by trained interviewers in August 2009; the respondents were drawn from mobile phone subscribers located in Seoul. A stratified sampling technique was used; the population was divided into groups based on market shares, and the samples were randomly drawn from each group. A total of 384 valid responses were collected out of the 400 distributed. This study employed structural equation modeling to test the hypothesized relationships and used LISREL 8.30 software; SPSS 12.0 software was used for the frequency analysis and the reliability test.

Table 1 presents the descriptive statistics of the respondents' demographic characteristics. Of the 384 respondents, 51.6% were male, and 48.4% were female; 25.0% were between the ages of 10 and 19, 31.3% were between the ages of 20 and 29, 22.9% were between the ages of 30 and 39, 12.0% were between the ages of 40 and 49, and 8.9% were 50 and over. The majority (56.3%) were in the 10-29 age group. Approximately 51% had an associate's or bachelor's degree. Further, nearly 52% were SK Telecom subscribers.

Table 1. Descriptive statistics of respondent characteristics

Variable		Frequency (%)
Gender	Male	198 (51.6)
	Female	186 (48.4)
Age	<19	96 (25.0)
	20-29	120 (31.3)
	30-39	88 (22.9)
	40-49	46 (12.0)
	>50	34(8.9)
Education level	High school	182 (47.4)
	Associate's or Bachelor's degree	194(50.5)
	Master's degree or above	8(2.1)
Monthly income	<1.5 million won	76 (19.8)
	1.5-3.0 million won	164 (42.7)
	3.0-4.5 million won	88 (22.9)
	>4.5 million won	56 (14.6)
Service provider	SK Telecom	198 (51.6)
	KTF	112 (29.2)
	LG Telecom	74 (19.3)

3) Reliability and Validity Assessment

To assess the reliability and validity of the measures of each construct, this study employed internal consistency and confirmatory factor analysis. Cronbach's alpha coefficients ranged from 0.70 to 0.96, which were greater than the acceptable level of 0.7 for all of the items (Nunnally, 1978). The alpha coefficients of the measurement items for each construct are presented in Table 2.

The goodness of fit of the measurement model was evaluated by using a variety of indices. The results of the confirmatory factor analysis are presented in Table 2. The chi-

square test was used to assess the overall goodness of fit. The chi-square test assessed the adequacy of the hypothesized model in terms of its ability to reflect the variance and covariance of the data. Because of its tendency to be sensitive to the sample size, other fit indices (e.g., GFI, NFI, and CFI) were considered in conjunction with the chi-square test. For the statistical significance of parameter estimates, t-values were used. The results of the confirmatory factor analysis indicated that the chi-square was 153.35(p<0.01), the goodness-of-fit index (GFI) was 0.94, the normed fit index (NFI) was 0.95, the comparative fit index (CFI) was 0.96, and the root mean square residual (RMSR) was 0.04. Generally, fit statistics greater than or equal to 0.90 for GFI, NFI, and CFI indicate a good model fit (Bagozzi and Yi, 1988; Mulaik, James, Van Alstine, Bennett, Lind and Stilwell, 1989). The RMSR indicated that the average residual correlation value was acceptable (Bagozzi and Yi, 1988). Thus, the measurement model provided a good fit to the observed data.

Table 2. Results of confirmatory factor analysis

Construct	Item	Standard loadings	t-value	CR	Cronbach's α	Fit indices
Service quality	SQ1	0.90	22.56 ^{***}	0.96	0.96	$\chi^2=153.35$ df=44 (p=0.00) GFI=0.94 NFI=0.95 CFI=0.96 RMSR=0.04
	SQ2	0.97	25.73 ^{***}			
	SQ3	0.96	25.25 ^{***}			
Sacrifice	SA1	0.32	6.12 ^{***}	0.79	0.74	
	SA2	0.91	16.73 ^{***}			
	SA3	0.92	17.00 ^{***}			
Perceived value	PV1	0.74	12.90 ^{***}	0.69	0.70	
	PV2	0.72	12.61 ^{***}			
Customer satisfaction	CS1	0.95	23.46 ^{***}	0.93	0.93	
	CS2	0.91	21.88 ^{***}			
Customer loyalty	CL1	0.82	16.77 ^{***}	0.76	0.77	
	CL2	0.75	15.20 ^{***}			

^{***} p<0.01

To assess the convergent and discriminant validity, this study used the fit of model, statistical significance of each standardized path coefficient, composite reliability (CR), and average variance extracted (AVE). All of the standardized path coefficients of the items were significant (t>1.96). As shown in Tables 2 and 3, the CR values were higher than 0.70, and the AVE values were higher than 0.50, suggesting that the convergent validity of the scale was satisfied (Anderson and Gerbing, 1988; Fornell and Larcker, 1981).

Table 3. Means, standard deviations, and construct correlations

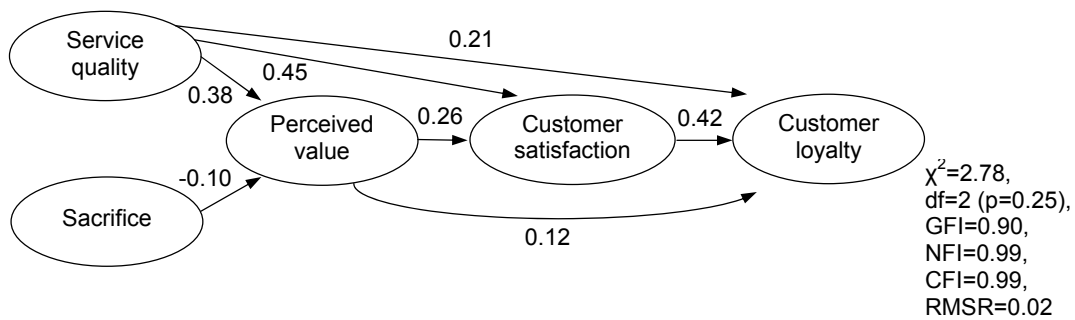
Construct	Mean	SD	SQ	SA	PV	CS	CL
SQ	4.32	1.41	0.89				
SA	4.38	1.43	-0.16 ^{***}	0.59			
PV	3.83	1.38	0.39 ^{***}	-0.15 ^{***}	0.53		
CS	4.53	1.47	0.56 ^{***}	-0.06	0.44 ^{***}	0.87	
CL	4.21	1.55	0.49 ^{***}	-0.04	0.39 ^{***}	0.59 ^{***}	0.62

^{***} p<0.01, Average variance extracted (AVE) is shown on the diagonal elements.

According to Fornell and Larcker (1981), AVE should be greater than the square of the correlations between constructs. As shown in Table 3, the values of the square of the correlations between the construct and any other construct in the model were all smaller than the AVE values, which indicated that discriminant validity was satisfied. The results, therefore, confirmed that the instrument had satisfactory construct validity.

PATH ANALYSIS AND HYPOTHESIS TESTS

The path model was assessed to test the hypotheses. The fit of the model is shown in Figure 1. The GFI, the NFI, and the CFI were 0.99, 0.99, and 0.99, respectively. They exceeded the recommended threshold value of 0.9. The RMSR indicated that the average residual correlation was 0.02, an acceptable value.



The path coefficient (-0.10) was significant at the 0.05 level, and the others were significant at the 0.01 level.

Figure 1. Results of path analysis

As shown in Figure 1 and Table 4, the path estimates indicated that service quality was a significant predictor of perceived value (H1; $\gamma=0.38$, $p<0.01$), customer satisfaction (H2; $\gamma=0.45$, $p<0.01$), and customer loyalty (H3; $\gamma=0.21$, $p<0.01$). Service quality had an indirect effect on customer loyalty via perceived value and customer satisfaction (0.28, $p<0.01$) and on customer satisfaction via perceived value (0.10, $p<0.01$). Sacrifice as a negative predictor of perceived value significantly influenced perceived value (H4; $\gamma=-0.10$, $p<0.05$). As predicted by H5 and H6, perceived value had a positive and significant effect on customer satisfaction and customer loyalty (H5; $\beta=0.26$, $p<0.01$, H6; $\beta=0.12$, $p<0.01$) and indirectly influenced customer loyalty via customer satisfaction (0.11, $p<0.01$). Similarly, as predicted by H7, customer satisfaction positively and significantly affected customer loyalty (H7: $\beta=0.42$, $p<0.01$). All of the hypothesized relationships were significant at the 0.01 level, except for H4 (significant at the 0.05 level). Therefore, all of the hypotheses were supported.

Using the standardized path coefficients between the constructs, the direct effect, indirect effect, and total effect of each construct on customer loyalty were calculated (see Table 4). The total effects of the constructs on customer loyalty (the direct effect plus the indirect effect) can be ranked as follows: service quality (0.49), customer satisfaction (0.42), perceived value (0.23), and sacrifice (-0.02). These results suggest

that Korean mobile phone service providers should continuously improve their service quality. Providing higher service quality may improve customer loyalty and encourage customers to share their positive experiences with others. Therefore, service quality is still critical to retaining customers and maintaining competitiveness. As shown in Table 4, customer satisfaction was an important factor in the relationship between firms and customers. In addition, perceived value played a mediating role in the relationship between service quality and customer satisfaction and between service quality and customer loyalty. A comparison of the total effects indicated that service quality influenced customer loyalty more strongly than did customer satisfaction and that customer satisfaction affected customer loyalty more strongly than did perceived value.

Table 4. The direct effect, indirect effect, and total effect of each construct

	Direct effect			Indirect effect			Total effect		
	PV	CS	CL	PV	CS	CL	PV	CS	CL
SQ	0.38	0.45	0.21		0.10	0.28	0.38	0.55	0.49
SA	-0.10				-0.03	-0.02	-0.10	-0.03	-0.02
PV		0.26	0.12			0.11		0.26	0.23
CS			0.42						0.42

CONCLUSIONS AND IMPLICATIONS

Previous studies have focused mainly on the importance of customer satisfaction and its impact on a service provider's profitability and customer retention. For service providers, the challenge is identifying the critical factors that determine customer satisfaction and loyalty (Aydin and Özer, 2005; Reichheld, 1996).

This study investigated the factors affecting customer loyalty in the context of Korea's mobile phone service sector. The results of the path analysis indicated that service quality, perceived value, and customer satisfaction significantly affected customer loyalty. Service quality had the strongest total effect on customer loyalty. This result suggests that customer loyalty may be most significantly influenced by high-quality services. That is, if customers perceive a high-quality mobile phone service, they may be more likely to stay with their existing service provider and recommend the provider to others.

Customer satisfaction and perceived value were also found to be important antecedents of customer loyalty. Although customer satisfaction affected customer loyalty less than did service quality, customer satisfaction played a significant role in the mediating relationship between the others and customer loyalty and directly enhanced customer loyalty. Prior research has demonstrated the importance of customer satisfaction and its impact on customer retention (Woo and Fock, 1999). The total effect of perceived value on customer loyalty was smaller than the aforementioned two factors. However, perceived value played an important role in understanding customers' actual behaviors (i.e., "the quality they get for the price they pay" or "the benefit they obtain for the sacrifice they make"). In addition, perceived value played a mediating role in the relationship among service quality, sacrifice, and customer satisfaction and between these and customer loyalty. Thus, perceived value as a tradeoff between quality and sacrifice is one reason why customers stay with their existing service provider.

These results have important implications for practitioners; they should determine the exact role of perceived value in their customers' satisfaction and loyalty. If perceived value is an antecedent of their customers' loyalty, marketing practitioners should incorporate it into their customer loyalty relations. They need to discard the view that improvements in customer satisfaction can only be achieved through improved service quality. By considering the role of perceived value (and the relationships among customer satisfaction, service quality, perceived value, and customer loyalty), marketing practitioners may be better able to improve customer satisfaction and loyalty.

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