DETERMINANTS OF CONSUMERS' SATISFACTION WITH SERVICE: A PRELIMINARY STUDY

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ABSTRACT

This study examines the extent to which service process and service outcome influence customers' satisfaction with service, taking into account their levels of product involvement. It is hypothesized that service process has more impact on satisfaction with service when compared with service outcome. In addition, service process rather than service outcome is more influential for low product involvement individuals. Correlation analysis and stepwise regression analyses were used to analyze the data. In general, the hypotheses were supported by the data.

INTRODUCTION

Since the 1950s, the growing trend of the American economy has been from a goods-producing society to a more service-oriented society (Attaran & Guseman, 1988; Keenan, 1990; Moore, 1987; Plunkert, 1990). As competition increases, the quality of service has become an important characteristic for winning customer loyalty, and has also been the greatest differentiator among market competitors (Berry, Bennett, & Brown, 1989; Martin, 1987).

Banks, Zweig, Lappen, Glouchevitch, and Pitta (1990) reported that the service sector remains one of the great growth frontiers of American industry. For instance, Peck and Shappell (1986) reported that the total employment in manufacturing decreased 30 percent from 1956 to 1979 while total service jobs rose 28 percent. It has been noted that service industries have continued to grow but at a decreasing rate. In order to restore a competitive advantage, service providers need to understand how quality is evaluated from the customers' perspective (Lefevre, 1989; Zeithaml, 1989) in order to ensure customers' satisfaction with service.

Service quality has recently received a lot of attention from researchers. Researchers have conducted studies to understand the quality of service from different perspectives. Parasuraman (1987) argued that process rather than outcome of service delivery should play an influential role in customers' evaluation of overall service quality because most of the time, customers have a hard time in identifying the service outcome. In addition, Brown and Swartz (1989) suggested that future research in service quality should determine whether the process or outcome quality has more of an impact on overall evaluation of service quality. However, little research has been conducted to determine the dominant factors in the evaluation of service quality. Service quality directly affects satisfaction with service (Marquardt, 1989; Nemeroff, 1989). Therefore, the primary interest of the current study is to investigate whether service process or service outcome has a dominant impact on satisfaction with service.

In addition to the process and outcome in service delivery, this study is interested in the effect of customers' product involvement on their satisfaction with service. Research has shown that product involvement influences people in various ways during the product purchase such as information search, attitude toward a product, and decision making (Zaichkowsky, 1985). Accordingly, the primary purpose of this study is to investigate how service delivery (including process and outcome) influences the satisfaction with service, and if levels of product involvement will have an moderating effect on the relationship between service delivery and satisfaction with service.

LITERATURE REVIEW

Quality of Service and Satisfaction

Generally, quality can be defined as "a comparison between expectations and performance" (Berry et al., 1989; Parasuraman, Zeithaml, & Berry, 1985). Lefevre (1989), Marquardt (1989), and Nemeroff (1989) concluded that total quality improvement brings benefits such as decreasing costs (e.g., reduce the costs of rework due to poor service), improving productivity, building customer satisfaction,

increasing sales and profits, and developing a competitive advantage in terms of a firm's market position.

Three unique characteristics -- intangibility, heterogeneity (or nonstandardization), and inseparability of production and consumption -- make the measure of service quality less objective as the measure of product quality (Berry et al., 1989; Parasuraman, Zeithaml, & Berry, 1988; Zeithaml, 1981). Moreover, service quality is an interaction between a customer and the elements in service provision. Customers will rate the quality of service as favorable or excellent when it meets or exceeds their expectation.

"Consumer satisfaction is the central element of the marketing concept." (Erevelles & Leavitt, 1992). Satisfaction is an "evaluation rendered that the (product) experience was at least as good as it was supposed to be," in effect, an "evaluation of an emotion" (Hunt, 1977, pp. 459-460). Marquardt (1989) defined "quality" as "customer satisfaction with complete business relationship, including the product and all the related services". In other words, service quality is associated with customer satisfaction (Bolton & Drew, 1991).

Service Dimensions and Satisfaction

Researchers have suggested that service quality is a multidimensional concept. For instance, Parasuraman et al. (1985) reported ten dimensions that consumers use in forming expectations about, and perceptions of, service. Widdows, Feinberg, and Lai (1991) reported six service dimensions, namely reliance, assurance, responsiveness, tangibles, empathy, and billing process. (These six factors are operationalized as service processes in this study, and are discussed in Study II.) These authors suggested that the relative importance of theses factors might vary in response to different product lines.

In order to test the dimensions of service quality, Lehtinen and Lehtinen (1982) conducted a study to assess service quality associated with service process and service quality associated with service outcome by using a longitudinal study method. They (1982) described quality of service process and service output as follows:

> Process quality is the customer's qualitative evaluation of his participation in the service production process. Process quality is the customer's personal and subjective judgment. It is based on how the customer sees the production process and how well he feels himself fitting into the process. (p. 6)
>
> ... output quality is a consumer's evaluation concerning the result of a service production process. (p. 8)

The results of Lehtinen and Lehtinen's study (1982) showed that process quality was mentioned more often as either a "salient" or the "most characteristic" dimension than was output quality by customers in three kinds of restaurants (i.e., disco, lunch restaurant, and pub-type restaurant) in Finland. In their study of the dimensions of service quality, Parasuraman et al. (1985, p. 42) indicated that the evaluation of the quality of service should take into account its delivery process.

Conceptual Definition and Working Hypotheses

Equity theory proposes that in a social exchange relationship people compare the ratio of their output via the exchange to their input to the exchange with that of a significant other's (Huppertz, Arenson, & Evans, 1978). The significant other can be a person, an individual's previous experience, an organization, etc. (Evans, 1982). The premise of equity theory is that there is an opportunity to make the comparison of ratios. In addition, people attempt to maximize their output relative to their input in the exchange process (i.e., people are selfish) through "behaving equitably" (Fisk & Young, 1985). Equity exists when the two ratios are perceived equal. Inequity results when differences exists between the two ratios (Swan & Oliver, 1984). In the case of inequity, actions will be taken to eliminate inequity (Fisk & Young, 1985).

The bridge between equity theory and satisfaction is the resulting psychological response. "Equity is a feeling of well being, fairness, or distributive justice" (Swan & Oliver, 1984). The expression of satisfaction is a positive feeling (affect) in response to a specific consumption experience. Thus, satisfaction is experienced by

the "focal person" if the outcome-to-input ratio is perceived to be equitable (Oliver & DeSarbo, 1988). On the other hand, a negative feeling (distress) follows a dissatisfied transaction, which is also the consequences of inequity (Swan & Oliver, 1984). Research has shown that equity is an effective predictors of satisfaction (e.g., Swan & Oliver, 1984, 1985). Instead of testing equity theory, the current study is an application study of equity theory.

One of the early research application of equity theory is in personnel psychology. It has been demonstrated that procedural justice (i.e., evaluation processes) is the dominant factor in assessing the fairness/unfairness of a performance appraisal system from employees' perspectives when compared with distributive justice (i.e., outcome of evaluation) (Greenberg, 1983; Landy, Barnes, & Murphy, 1978). In these studies, appraisal outcome refers to the appraisal rating. The appraisal procedure includes all other aspects in an appraisal system such as frequency of evaluation, evaluation criteria, and communicating with employees. Following the conceptualization of process and outcome, this study defines outcome of service quality as the result of the service (e.g., whether malfunction of an electronic appliance had been fixed). The processes of service quality refer to various aspects in service delivery encountered by customers such as service personnel, organizational surroundings, and customer service policies. From previous research, the working hypothesis is:

> H1: Service process rather than service outcome will have a greater impact on satisfaction with service.

Since the 1970s, researchers have shown increasing interest in understanding the behavioral consequences of consumers' involvement with products. "Involvement occurs when a product is related to important values, needs, or the self-concept" (Bloch, 1981). However, there is little consensus about the definition of the concept of involvement among researchers. In general, researchers agree that characteristics such as perceived importance, perceived risk, symbolic/sign value, and hedonic value associated with a product determine the levels of consumer involvement with product purchases (Laurent & Kapferer, 1985). As a result, consumers' involvement levels vary across products and situations. Research results suggest that involved consumers tend to perceive greater differences among product attributes, higher product importance, and tend to be more brand loyal than uninvolved consumers.

Involvement is defined as "motivation to expend personal resources to learn about or purchase a product or service" by Heslin and Johnson (1992). Bloch, Sherrell, and Ridgway (1986) proposed a framework for consumer information search which indicated that involvement in the purchase and the product will lead to prepurchase and ongoing search, respectively. Heslin and Johnson (1992) proposed that if people had high involvement with a product, they tended to search for more information regarding this product compared to people who had low product involvement. They also proposed that high product involvement people might have little need for such information since they had more experience (Heslin & Johnson, 1992). Product involvement affects perception of attribute differences, product importance and brand loyalty (Zaichkowsky, 1985). Accordingly, involvement is proposed as an intermediate variable that should influence customers' perception and satisfaction with service. The moderating effect of product involvement on the relationships of service process, service outcome, and satisfaction with service can be derived either theoretically or rationally.

Theoretically, the Elaboration Likelihood Model (ELM; Petty & Cacioppo, 1981, 1986a, 1986b) proposed that level of involvement influence individuals on utilizing either a central or a peripheral route of information processing. Johnson and Eagly (1989) referred to the ELM as outcome-relevant involvement. Notice that product involvement differs from traditional ELM in that levels of involvement are manipulated by researchers in the ELM research, while product involvement is measured in the current study. Since ELM is outcome-relevant involvement, service outcome is the central element in determining satisfaction with service for high product involvement individuals. In contrast, low

product involvement individuals use peripheral cues (i.e., service process in the current study) to evaluate service quality.

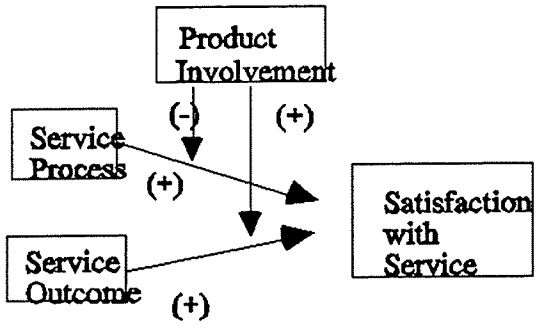
Rationally, product involvement, by definition, means involve with product. In service encounters, high product involvement individuals focus on service outcome and low product involvement individuals emphasized service outcome. The working hypotheses are:

H2: Service outcome rather than service process will have a greater impact on satisfaction with service for people who are high in product involvement.

H3: Service process rather than service outcome will have a greater impact on satisfaction with service for people who are low in product involvement.

Figure 1 summarizes the relationships among the independent variables and the dependent variable used in this study. The independent variables are service process and service outcome. Service outcome is operationalized as the results of a service. Elements other than service outcome in a service delivery are defined as service process. In addition, as shown in the figure, product involvement is incorporated as a moderating variable. In other words, different levels of product involvement will affect the impact of service process and service outcome on satisfaction with service.

Figure 1
Determinants of Satisfaction with Service



METHODOLOGY

The hypotheses were tested with a data set collected for the NEC Corp. in 1989 (Feinberg, Widdows, Trappey, & Wynchott, 1989). These data were gathered from customers who had purchased an NEC electronic product and had to bring it back for repair while it was still under warranty. Respondents were asked to describe their experience with the service and fill out modified version of the SERVQUAL questionnaire. Since no information with respect to product involvement was available in this original NEC data set, a study (Study I) was carried out to establish the relationship between different product lines and levels of product involvement. It was hoped that the results of Study I could be utilized in Study II to infer the moderating effects of involvement in order to test the hypotheses.

Study I

The involvement measurement developed by Zaichkowsky in 1985 (i.e., Personal Involvement Inventory, PII) was used to assess product involvement levels. The Personal Involvement Inventory (PII) has been reported to have high reliability, validity, and sensitivity to situational differences (Zaichkowsky, 1985). Personal Involvement Inventory (PII) is a 20-item semantic differential scale. The total PII score ranges from 20 to 140 on each product for each respondent.

Thirty-seven PII surveys were distributed among a convenience sample of faculty and staff members of a large university. Similar Socio-demographic breakdowns were found between respondents in Study I and NEC study. Respondents were asked to rate each of the six products, including three products in the NEC data set, against the 20 PII items. Television, VCR, and audio product were selected from the NEC data set because of their nearly even split of positive versus negative repair experience (Feinberg, Widdows, Trappey, & Wynchott, 1989). These three products, along with wine, detergent, and automobile were included for point of comparison were the six products that respondents were asked to evaluate in this study.

In order to infer the levels of product

involvement, minimum, maximum, mean and standard deviation of the total PII scores for each product were calculated (see Table 1).

Table 1
Means and SDs of the Six Products Evaluated by Respondents

	Detergent	Wine	Television*	VCR*	Audio product*	Automobile
min.	60	20	65	32	42	63
max.	129	98	140	133	140	140
mean	104.26	60.1	104.89	94.37	94.53	122.84
SD	18.69	27.47	22.18	26.87	27.31	18.50

* The repair service with these three products were further studied in Study II.

The results indicated that there are variations of the total PII scores both within each of the six products and among the six products. That is, product involvement does vary with product types. Moreover, different individuals had different levels of product involvement for the same product. Based on the mean PII scores, the product involvement levels for the three products to be used in Study II are, ranging from low to high, VCR, audio product, and television, respectively.

Study II

The purpose of study II is to examine the hypotheses using the NEC data set. The independent variables in this study are service process and service outcome. Service process consists of the following six dimensions -- reliance, assurance, responsiveness, tangibles, empathy, and billing process -- which are the results of a factor analysis (Widdows, Feinberg, & Lai, 1991). The service outcome is whether the problem with the product had been fixed the first time the customer brought the component back to NEC for repair. It was created by summing the following two dummy variables coded from respondents' narratives regarding their service experience. The first dummy variable was that product did not work immediately after repair. The second dummy variable was that an improper repair was performed. As a result, a higher number of "service outcome index" indicated a more negative service outcome (ranging from 0 to 2). Product involvement is a moderating variable which has been investigated in Study I. The dependent variable is satisfaction with the service. The "satisfaction" index is the sum of three 5-point Likert scales (i.e., I would recommend NEC repair service to friends; I would recommend NEC products to my friend; I would purchase another NEC product), with 1 indicating strongly agree and 5 indicating strongly disagree.

The results from the first study (see Table 1) indicate that respondents have a higher levels of product involvement on Television than on VCR and audio product. Therefore, the prediction drawn from hypothesis 3 is that service process rather than service outcome will account for more variance of satisfaction with service for VCR and audio product than for Television. Similarly, service outcome rather than service processes accounts for more variance of satisfaction with service for Television (H2). Since the product involvement levels for VCR and audio product are approximately equal, the impact of service processes and service outcome on satisfaction with service was predicted to be similar for these two products. Data analyses were performed using the entire NEC data set (N=996) and were carried out separately for the evaluation of these three product-repair service (i.e., television, VCR, and audio product).

RESULTS

Pearson correlation coefficients (see Table 2) showed that there are significantly positive correlations of satisfaction with service outcome and service process, except on the responsiveness dimension.

Stepwise regression analyses were used to test hypotheses 2 and 3. Table 3 presents the results of regression analyses.

> H1: Service process rather than service outcome will have a greater impact on satisfaction with service.

The hypothesis is supported by the stepwise regression analysis using the entire NEC data (see Table 3). The three independent variables which enter the regression model are all service process

Table 2
Pearson Correlation Coefficients of Service Process, Service Outcome, and Satisfaction With Service

reliance	assurance	responsiveness	tangibles	empathy	billing process	service outcome	satisfaction
reliance	.69**	-.20**	.38**	.15**	.53**	.17**	.60**
assurance	—	-.13**	.49**	.11	.61**	.15**	.71**
responsiveness		—	.06	.29**	.04	-.07	-.22**
tangible			—	.04	.49**	.02	.32**
empathy				—	.13**	.03	-.06
billing process					—	.11*	.44**
service outcome						—	.19**
satisfaction							—

* $p < .05$
** $p < .001$

Table 3
Results of Stepwise Regression Analyses with Satisfaction as Dependent Variable

I.V.	entire NEC data	TV	VCR product	audio
reliance	** (2)		** (3)	** (2)
assurance	.47** (1)	.25** (1)	.39 ** (1)	.46** (1)
responsiveness				
tangible				
empathy		** (3)	** (2)	** (3)
billing	** (3)	** (4)		
service outcome		** (2)		
R-Square	.532	.36	.52	.53
F-value	99.58**	8.57**	22.50**	16.68**

a: R-Square as the first independent variable entering the regression model
** variables enter the regression model at a .001 significant level

Note: numbers in parentheses indicate the order of variables entering the stepwise regression model with satisfaction as the dependent variable for each product-repair service.

dimensions. Together, they explain 53% of the variance.

H2: Service outcome rather than service process will have a greater impact on satisfaction with service for people who are high in product involvement.

Service outcome is the second independent variable to enter the stepwise regression model for television repair service. But service outcome is not in the regression models for either VCR or audio product repair service. Therefore, hypothesis 2 is partially supported. The results from correlation analysis (see Table 2) indicate that service outcome is significantly correlated with satisfaction ($r = .19$), which is relatively small compared to service process (e.g., .71 between assurance and satisfaction). Using an r to Z transformation (Edwards, 1984, pp. 70-73), the two correlations (.71 vs. .19) are significantly different at $p < .01$, which means service process rather than service outcome has a stronger influence on satisfaction.

H3: Service process rather than service outcome will have a greater impact on satisfaction with service for people who are low in product involvement.

The results in Study I indicate that VCR and audio product have identical level of product involvement which are lower than that of television. Therefore, the prediction is that service process rather than service outcome will have more impact on overall satisfaction for VCR and audio product than for television repair service. Regression analyses with the stepwise method yield the same three independent variables in the regression model for both of the VCR and audio product repair service. The three variables are assurance, reliance, and empathy, which are all service process dimensions as expected. The variance of the dependent variable (i.e., satisfaction with service) accounted by these three variables are .52 and .53 for the VCR and audio product repair service, respectively. Thus, hypothesis 3 is supported.

CONCLUSIONS AND IMPLICATIONS

Service quality has recently receive a lot of attentions from researchers. It has been argued that service process rather than service outcome is more important in evaluation of service quality (Lehtinen & Lehtinen, 1982; Parasuraman, 1987), which associates satisfaction with service positively. However, little research has been conducted to test this assumption. The intention of this study is to investigate the determinants of consumers' satisfaction with service. Based on the literature review, it was hypothesized that service process rather than service outcome have more of an impact on satisfaction with service. The effect of service process and service outcome was predicted to vary in response to different levels of product involvement. In other words, under high product involvement circumstances, service outcome rather than service process is the influential factor of satisfaction with service

In general, the hypotheses are supported by the results. The current study approaches this topic with a different perspective. It is an application research of equity theory. The results of this study show that both service process (procedural justice) and service outcome (distributive justice) appear to have a positive impact on satisfaction. However, service process is more influential in satisfaction with service compared to service outcome. In addition, the results of this study imply that the relationships of service process, service outcome, and satisfaction with service are moderated by product involvement. The findings contribute to the literature of service and satisfaction by examining the issue from an equity theoretical perspective. Equity theory illuminates the service-satisfaction link by the resulting psychological response.

For the marketers, the results from this study also give service providers direction in improving their service quality which will, in turn, achieve the six benefits of good quality of service proposed by Berry, Bennett, & Brown (1989): (1) stronger customer loyalty; (2) more repeat business; (3) reduced vulnerability to price wars; (4) ability to command higher relative price without affecting market share; (5) lower marketing costs; and (6) growth in market share. It is shown that service process is an influential factor in determining customers' satisfaction with service (see Table 3). Most importantly, assurance (i.e., knowledge and courtesy of employees and their ability to inspire trust and confidence) appears to be the dominant service dimension that affects customers' satisfaction with repair service. Therefore, marketers should emphasize this service dimension in a service delivery encounter to increase customers' satisfaction with service. In addition, service outcome also has an impact on satisfaction with service for some product categories, but not for others.

There are limitations with this study. First, this study only investigates the effects of service process and service outcome on service evaluation. Future research should include other variables such as personality to further explore this topic. Second, a problem arises from using different respondents in Study I and Study II, which may create difficulties in drawing conclusions regarding, for example, the moderating effect of product involvement on the relationships among service process, service outcome, and satisfaction with service. Future research should obtain a single data set to directly test the hypotheses.

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