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ANTECEDENTS OF CUSTOMER LOYALTY

This article presents a theory of the effects of performance quality, customer satisfaction and brand reputation on customer loyalty. This theory is compared to a rival theory and is tested with samples from four different industries. The proposed theory was supported and both customer satisfaction and brand reputation were found to have a positive effect on customer loyalty. The effect of performance quality on customer satisfaction was also supported. The results suggest some contingencies that affect the nature of the influences on customer loyalty.

INTRODUCTION

Companies that sell goods and services in many developing or undeveloped countries often benefit from the luxury of limited or no competition. As a result of such a non-competitive environment, few companies needed to focus on customer needs and little effort was made to find ways to improve satisfaction and retention. Instead, the level of product or service quality offered to customers was often dictated by the company's existing capabilities, without much incentive to broaden or extend those capabilities (Fornell 1992). Companies in such markets are not accustomed to ask their customers for their opinions and suggestions on customer satisfaction issues, and thus how to retain customers.

Accordingly, in East European countries the concept of customer loyalty is quite new and today companies are being forced to learn how to augment loyalty among customers to compete and survive in the rapidly changing marketplace. Some companies in Poland (for example, Era and Plus mobile telephone operators) have demonstrated the importance of customer loyalty to their marketing success through loyalty programs that are aimed towards their best customers.

Customer loyalty is important to a firm for several reasons. First, loyal customers help reduce the firm's marketing costs in many ways. For instance, loyal customers are already aware of the product's features, its benefits and where it is available. Second, loyal customers are less price sensitive and thus

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they are less likely to respond to competitor promotion efforts (Krishnamurthi and Raj 1991). Third, loyal customers decrease their search for brand alternatives, and thus, customer loyalty can function as an entry barrier for competitors (Aaker 1991). Fourth, loyal customers also provide positive word-of-mouth and therefore can attract new customers. As a result, customer loyalty can have a strong influence on a firm's profitability. Indeed, Reichheld and Sasser (1990) proposed that "reducing [customer] defections by 5% boosts profits 25% to 85%". Customer loyalty is also an excellent tool for the evaluation of a firm's marketing performance because it is less confounded with variables outside of the control of marketing managers than many other commonly used measures (e.g. profitability measures). Consequently it is important for researchers in marketing to endeavour to improve our understanding of customer loyalty and its antecedents.

Research on customer loyalty has identified a number of influential antecedents. Two traditional ones are customer satisfaction and performance quality (e.g. Zeithaml, Berry, and Parasuraman 1996; Boulding et al. 1993; Fornell 1992). Additionally, brand reputation has been found to be important to consumer decision-making (e.g. Nelson 1971; Darby and Karni 1973; Zeithaml 1988; Smith and Park 1992) and has also been proposed as an antecedent of loyalty by Selnes (1993). Psychology theories (e.g. elaboration likelihood theory and theory of reasoned action) indicate that consumers do not form their brand attitudes based solely on careful personal assessments of the attributes of different brands. As a result, influences, such as brand reputation, (which are not based on personal experience) can be important to customer loyalty. This study was designed to extend the current research on customer loyalty by including brand reputation as an antecedent and investigating not only its influence on customer loyalty but also its relationship to customer satisfaction and performance quality.

1. CUSTOMER LOYALTY

Definitions of customer loyalty often imply overt repeat purchase behavior (for an overview, see Jacoby and Chestnut 1978). Some studies of customer loyalty define the domain of loyalty to only include repeat purchase behavior (see e.g. Krishnamurthi and Raj 1991). It is clear that repeat purchases represent an important part of customer loyalty because they are directly related to business performance and survival. Additionally, data on repeat purchases is more easily obtained than attitudinal data (Mellens, Dekimpe and Steenkamp 1995). However, Jacoby and Kyner (1973) argue that a customer is not necessarily loyal because they continue to buy the same brand. Repeat

purchase, or lack thereof, may be a function of factors such as inertia, availability, variety-seeking, the situation, and exit barriers. For example, a customer may be loyal to a particular consulting firm but may chose to use them only for particular tasks, and thus the customer appears to buy their consulting services only occasionally. Similarly, the regular use of a particular airline may reflect the lack of other alternatives or exit barriers (e.g. membership of a frequent flier program) and does not by itself tell us the extent to which a customer is loyal. Thus, repeat purchase behavior is not a sufficient representation of customer loyalty.

To overcome the shortcomings of the behavioral approach to customer loyalty it has been argued that customer loyalty should also include an attitudinal component, namely brand commitment (Jacoby and Kyner 1973). Jacoby and Kyner (1973) suggest the following definition of customer loyalty:

the biased (i.e. nonrandom), behavioral response (i.e. purchase), expressed over time, by some decision-making unit, with respect to one or more alternative brands out of a set of such brands, and is a function of psychological (i.e. decision making, evaluative) processes.

This definition emphasizes that a loyal customer purchases a certain brand and that the purchase is based on a certain commitment to the brand. Kiesler defines commitment as "the pledging or binding of an individual to behavioural acts" (1971, p. 30). Copeland (1923) illustrates this through his notion of consumer insistence: "When the customer approaches the purchase of an article with this attitude of mind, he accepts no substitutes unless it is an emergency". Commitment of this kind reflects a high level of certainty that the customer will not turn their back on the brand at the first opportunity or inducement to do so. Accordingly, commitment is the component that distinguishes true loyalty from spurious loyalty (Bloemer and Kasper 1995). Customer loyalty is most valuable to marketers when it is reflected in repeated purchase and brand commitment (Jacoby and Kyner 1973; Mellens, Dekimpe and Steenkamp 1995). The study reported in this paper explores the antecedents of customer loyalty from this perspective.

2. ANTECEDENTS OF CUSTOMER LOYALTY

2.1. Customer Satisfaction

Several studies report a positive relationship between customer satisfaction and loyalty (Zeithaml, Berry, and Parasuraman 1996; Boulding et al. 1993; Fornell 1992). The rationale behind this relationship is that a satisfied customer will continue to use a product when they perceive that it satisfies their needs at least as well or better than other alternatives available on the market. This continued use leads to learning on the part of the customer which in turn influences their attitude toward the product or firm (see Anderson, Fornell, and Lehmann 1994). An attitude is defined as "a learned predisposition to respond in a consistently favourable or unfavourable manner with respect to a given object" (Fishbein and Ajzen 1975:6). Since loyalty is both an attitude towards behaviour and behaviour intention, it is reasonable to believe that customer loyalty is based on customer satisfaction. Thus, in this study it is proposed that loyalty is positively influenced by customer satisfaction.

2.2. Performance Quality

The performance qualities of products are primarily intrinsic, however extrinsic characteristics also play an important role in the evaluation of performance (Fiore and Damhorst 1992). The evaluation of a product's performance is derived from the processing of information about, or experience with, the different attributes and features of a product. The relationship between performance quality and customer satisfaction is based on the assumption that a rational process of evaluation has led to a degree of satisfaction with the product. Recent research has shown that a product's performance quality alone predicts customer satisfaction better than disconfirmation in certain situations (Tse and Wilton 1988; Oliver and DeSarbo 1988), and thus it is a more robust predictor across different product categories. Customer satisfaction can be viewed as an overall postpurchase judgement of the cumulative experiences with, or knowledge about, a product (see LaBarbera and Mazursky 1983; Fornell 1992; Selnes 1993a; 1993b). Consequently the more positive the evaluation of the experience with a product's performance quality, the more satisfied are the customers. This relationship is well-documented in several studies (e.g. Fornell 1992; Tse and Wilton 1988; Oliver and Desarbo 1988; Cronin and Taylor 1992; Anderson and Sullivan 1993).

2.3. Brand Reputation

The reputation of a brand is a general evaluation of that brand on some specific relevant characteristics (e.g. "Arthur Andersen provides excellent internal banking software systems") as well as an overall evaluation across all characteristics (e.g. "Arthur Andersen does fine work"). The reputation is the aggregate or shared beliefs within a population, or a part of a population, about these evaluations. Because it is a shared belief, brand reputation exists independently of many consumers' experiences with the brand.

Brand reputation is an important part of customer decision-making because it serves as a simplifying mechanism, or a heuristic, that increases efficiency in the decision process (Payne 1976). While brand-based heuristics may be quite useful, they can lead to errors because decisions are made without a complete search for all of the relevant information (Tversky and Kahneman 1974; Tversky 1972). Despite this potential problem, consumers commonly use heuristics to minimize the amount of cognitive effort expended in decision-making processes (Newell and Simon 1972; Tversky and Kahneman 1974; Payne 1982; Hogarth 1987). This is a perfectly rational behavior when one considers the fact that decision-making can require considerable investment in both time and effort. Even in the case of products that are very important to the consumer, (e.g. high involvement products) research has found that heuristics such as brand reputation are commonly applied in the decision making process (Newman 1977; Olshavsky and Granbois 1979; Formisano, Olshavsky and Tapp 1982; Rosen and Olshavsky 1987; Stewart et. al. 1985).

There are a number of factors that influence the likelihood that a consumer will use brand reputation in their decision process. These can be broadly delineated into factors influencing information processing efficiency and factors related to social context. If little difference is perceived among the choice alternatives, then consumers are more likely to use brand-based heuristics because they feel that devoting extensive time and effort to the decision-making process is inefficient (Engel, Blackwell, Miniard 1990). If the decision task is seen as difficult, then a person is more likely to use decision heuristics (Bettman 1979; Newell and Simon 1972) and they are also more likely to ignore a larger percentage of available information in their decision-making process (Svenson 1979). This occurs despite the fact that in their research Jacoby, Speller, and Kohn (1974) found that consumers "felt better with more information, but actually made poorer purchase decisions" (p. 67).

Customer behaviour is embedded in a social context; that is, customers are more likely to behave consistently with the norm in the social context than contrary to it (Bearden and Etzel 1982). Fishbein (1967, p. 488) proposes a person's intention to perform any behaviour (i.e. loyalty) is affected by "the norms governing that behaviour in that situation and his motivation to comply with those norms". Generally, the subjective norm is thought to be of importance in order to explain future behaviour. As proposed by Fishbein (1967, p. 490) "an individual is likely to have quite different beliefs about the consequences of performing a given behaviour in a public situation than in a private situation'. Bearden and Etzel (1982) indicate that consumers rely on the beliefs of reference groups to a great extent when they buy products that are (a) consumed publicly and (b) are not necessities. The motivation to comply with normative beliefs is suggested to be higher for such products in public consumption situations. However, the reference groups' norms were also important determinants of behaviour in other situations. Thus, to the extent that brand reputation functions as a social norm, it is an influence on customer loyalty. Second, in some situations customers have limited ability to assess their satisfaction with the product and they will rely on the firm's reputation in the market (Zeithaml 1988). This may be the situation for products which are long lasting and intangible by nature (e.g. vacations, consulting etc.) and are therefore difficult to evaluate both ex ante and ex post. Supplier or brand reputation in the market can often be seen as more valid information since it is shared by several persons. Third, the brand name may act as a peripheral route to persuasion (Petty, Cacioppo and Schumann 1983). According to Bitner and Obermiller (1985), in many cases the strengths of peripheral and centrally processed attitudes (i.e., loyalty) are equal. Clearly there are many reasons to expect that there is a positive relationship between brand reputation and loyalty.

2.4. The Model

The model that results from these hypotheses is presented in Figure 1. Most studies have analyzed the effects of customer satisfaction on loyalty without considering the impact of brand reputation. As a result, some of the variance in loyalty that has been attributed to customer satisfaction may instead be a result of brand reputation. The model presented here provides an opportunity to investigate the contribution of that relationship. This model is consistent with the framework of the theory of reasoned action (Fishbein and Ajzen 1975; Fishbein 1967), where loyalty can be viewed as a function of intrinsic cues (as parallel to beliefs, expressed as customer satisfaction and performance quality), and extrinsic cues (as parallel to subjective norm, expressed as brand

reputation). Similarly, the model is also consistent with the elaboration likelihood model (Petty, Cacioppo and Schumann 1983), in which the central route to persuasion (i.e. loyalty) is represented by customer satisfaction and performance quality and the peripheral route is represented by brand reputation. The relationships among the constructs in the model (customer satisfaction, performance quality and brand reputation) are stated as the following three hypotheses:

H1: Customer satisfaction has a positive effect on customer loyalty.

H2: Performance quality has a positive effect on customer satisfaction.

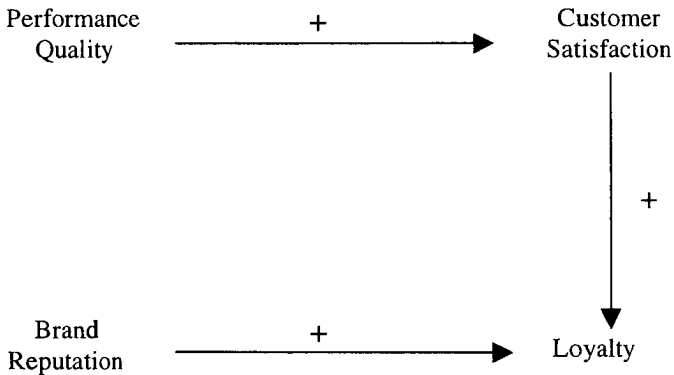H3: Brand reputation has a positive effect on customer loyalty.

Figure 1: The proposed model for the study.
Source: Authors' own

3. THE TEST OF THE MODEL

3.1. The Research Context

The test of this model was done with data gathered from four service industries. In service industries the performance quality and satisfaction with most services may be difficult for the customers to assess accurately (see e.g. Zeithaml 1988; Iacobucci 1992) and therefore customers are likely to rely on other antecedents such as brand reputation. The data was collected by Selnes (1993a; 1993b) from customers in markets for (1) life insurance, (2) telecommunications services, (3)

higher education services, and (4) agricultural supply services (wholesaler). The four different contexts provide a good opportunity for testing the "generalizability" of the model across services industries. These contexts capture both business-to-business decision situations (i.e., telephone service and agricultural supplier) and consumer decision situations (i.e., life insurance and higher education). Furthermore, it is also possible to describe differences across situational, buyer, and product category variables.

3.2. Measures

Performance quality was assessed with three indicators reflecting various aspects of the service (measured on a six-point scale from " little satisfied" to "very satisfied"). The three indicators were selected from a greater set of quality items, and the selection was based on the three indicants that had the highest loadings on the first factor in a principal component analysis. Customer satisfaction was also measured with three indicators. Overall satisfaction was measured both before and after the evaluation of performance quality. Therefore, the first measure can be viewed as an immediate attitude and the latter as a more formative overall measure of the product's attributes. Both indicators were measured on a six-point scale from "very little satisfied" to "very much satisfied". The third indicator is an evaluation of the company's distance from an ideal product or service provider (measured on a 10-point scale ranging from "the supplier is far from the perfect" to "the supplier is perfect"). Brand reputation was assessed with two indicators reflecting the company's overall reputation. The first item assessed the absolute level of reputation among colleagues (for the business-to-business firms) and friends and family (for the consumer products firms). The second item addressed the relative reputation as compared with competitors. Both indicators were measured on a six-point scale from "very negative" to "very positive". Customer loyalty was measured with two indicators. The first indicator is the likelihood that the customer will continue the relationship with the vendor (purchase intention). The second indicator addressed the degree to which respondents would recommend their supplier to others. The latter item reflects the brand commitment component of the loyalty construct. Both indicators were measured on a six-point scale (from 0%-probability to 100%-probability).

3.3. Analysis

Model testing can be done in several ways. The most common test procedure is to adopt a strictly confirmatory test. However, there are several weaknesses in applying such an approach. Meehl (1990) points out

that common hypothesis testing procedures can be inappropriate due to the fact that the observed parameters are rarely equal to zero even though that is the basis of the hypothesis test, and the fact that a larger sample size will always produce greater levels of significance. Therefore, in many cases it is too easy to get support for theories, even "false" theories (Meehl 1990). Furthermore, it is only rarely (if ever) that the proposed theories are expected to be perfect (see Browne and Cudeck 1993).
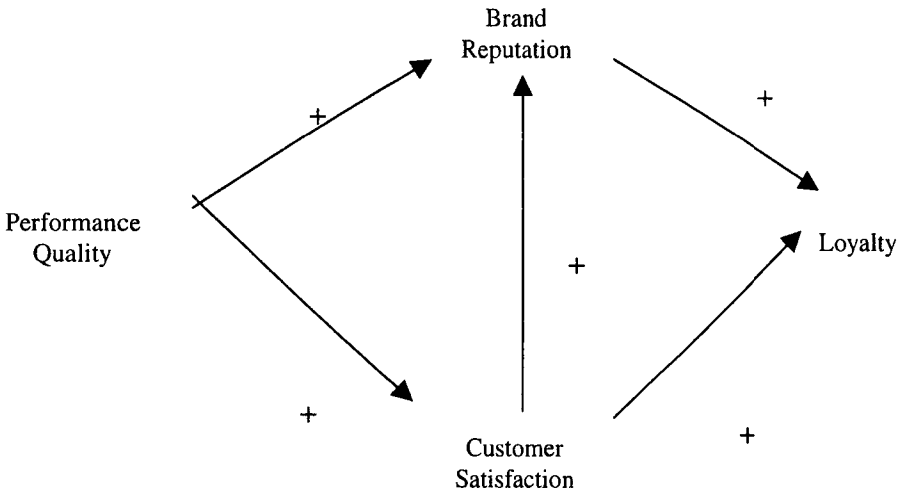

Figure 2: A rival model
Source: Selnes 1993a; 1993b

Several solutions are suggested to address these weaknesses. The common trait among these recommendations is an increase in the likelihood of falsifying the theory. This is often referred to as a "risky test" (Meehl 1990). The first way of doing a risky test is to state precise expectations (i.e., point estimates). If the data are consistent with the expectations, then it would be "a damn strange coincidence" if the theory is still false (Meehl 1990, p. 115). A typical approach to testing point-expectations is through structural equation modelling (Jöreskog and Sörbom 1989). Structural equation models can be used to test for a theory's ability to reproduce the observed (sample) covariation matrix. The more discrepancy that exists between the estimated covariations derived

from the theory and the true covariations, the less likely the theory is to be true. In contrast to common hypothesis testing, in this approach the higher the sample size the stronger the test. Therefore structural equation modeling can be one way of overcoming weaknesses emphasized by Meehl (1990).

The second way of overcoming the weaknesses of common theory testing is the phenomenon of approximation. Browne and Cudeck (1993, p.137) argue that:

In applications of the analysis of covariation structures in the social sciences it is implausible that any model that we use is anything more than an approximation to reality. Since a null hypothesis that a model fits exactly in some population is known a priori to be false, it seems pointless even to try to test whether it is true. If the sample size is sufficiently large in a practical investigation, it can be expected that even models that approximate the covariance matrix closely will be rejected.

Accordingly, models are fitted to data in order to understand the underlying processes which are operating. This is an important issue since testing structural equation models is a more accurate a test of over-identified restrictions (i.e. the more degrees of freedom the stronger, and more risky, the test of the theory). The difficulty with this approach is that the fit of the model can be improved by increasing the number of parameters. Therefore, there is a conflict between the parsimony of a model and its goodness of fit. Two solutions to this problem are suggested. The first is to estimate the approximation error of the theory. According to Browne and Cudeck (1993, p. 146) a test of close fit with a corresponding statistical test is most realistic. The test procedure provided by Browne and Cudeck is called the root mean square error of approximation (RMSEA), which rewards parsimonious models. RMSEA has a known sampling distribution and can, therefore, be applied as a test statistic. Therefore, the RMSEA-test is a test of the likelihood that the theory is an acceptable approximation of the data (i.e. the real world phenomenon).

A second aspect of the model testing approach applied here is parallel to the logic behind the error of approximation. This approach is to test theories by comparing them to an alternative theory. By doing so, theories can be used to make scientific progress, that is, to substitute proposed theories for existing theories if a better approximation to the data is found in the proposed theory (Browne and Cudeck 1993; Jöreskog 1993; Bollen and Long 1993; Morgan and Hunt 1994). The model proposed here is compared with a rival model from Selnes (1993a; 1993b) on the effect of product performance on brand reputation, satisfaction and loyalty (please see Figure 2). The Selnes' model has the same variables and the same purpose as the model proposed here. However, the Selnes' model is more

saturated (has more parameters) since it includes a path from customer satisfaction to brand reputation, and one from performance quality to brand reputation. The differences between the models can be argued for as follows. First, individuals are assumed to be influenced by their social context more than the other way around. The impact of an individual on a social group will be, on average, absent. Therefore, any empirical effects might be attributed to confounding effects more than to the theory. Second, reputation might be believed to be a function of performance quality assessment from all the customers in the market. However, this is a multi-level approach to the problem, which requires numerous brands within the same industry to be possible to undertake. Here the problem is overcome by assuming that brand reputation is correlated with performance quality.

4. RESULTS

The four samples contained 187 observations from life insurance customers, 395 observations from telephone services customers, 325 observations from business school students (customers), and 125 observations from salmon-feed supply customers. A complete description of the sampling procedures and results is provided in Selnes (1993a; 1993b).

The procedure of the test is first to assess the overall model fit, and then to assess the parameter estimates of the models with satisfactory fit (see Bollen 1989; Bagozzi and Yi 1988). The estimation of the overall fit was done using both the maximum likelihood estimation and generalized least square estimation. The fit index used is the chi square value for a given number of degrees of freedom. As reported in the goodness of fit indices (see Table 1), the model has a reasonable fit to the data. The chi-square measures the degree of exact fit between the predicted covariance matrix and the sample covariance matrix. Additionally, as discussed previously the phenomenon of approximation of a theory, root mean square error of approximation (RMSEA) is also reported. Schwarz's Consistent Akaike's Information Criterion (CAIC) is an index used to assess the parsimony of the theories by adjusting for the sample size and the number of free parameters. Generally, CAIC will penalize models with small sample sizes and large number of free parameters. CAIC compensates for the weaknesses of the chi-square measure of fit (see Jöreskog 1993; Bollen 1989). The results of the fit estimations are shown in Table 1.

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Table 1

Fit indices for the theory and the alternative theory for each of the four samples

SAMPLE	χ^2/df	P-VALUE (χ^2)	RMSEA (ε)	P-VALUE (ε)	CAIC
COLLEGE (N=325)					
Theory ML[a]	23.99/31	0.81	0.0	1.00	186.81
Theory GL[b]	23.48/31	0.83	0.0	1.00	186.29
Alternative theory ML	23.27/30	0.80	0.0	1.00	192.86
Alternative theory GL	22.91/30	0.82	0.0	1.00	192.50
INSURANCE (N=187)					
Theory ML	129.40/31	0.00	0.13	0.00	278.94
Theory GL	116.36/31	0.00	0.12	0.00	265.91
Alternative theory ML	103.06/30	0.00	0.11	0.00	258.84
Alternative theory GL	92.74/30	0.00	0.11	0.00	248.52
AGRI (N=125)					
Theory ML	43.51/31	0.067	0.057	0.36	183.39
Theory GL	40.99/31	0.11	0.051	0.45	180.87
Alternative theory ML	42.26/30	0.068	0.057	0.35	187.97
Alternative theory GL	40.01/30	0.10	0.052	0.44	185.72
TELE (N=395)					
Theory ML	37.60/31	0.19	0.023	0.97	205.09
Theory GL	34.80/31	0.29	0.018	0.99	202.30
Alternative theory ML	36.16/30	0.20	0.023	0.97	210.63
Alternative theory GL	33.13/30	0.32	0.016	0.99	207.60

Source: Own computation

Note. a: Maximum likelihood estimation of the fit function (F_0); b: General least square estimation of the fit function (F_0)

Using RMSEA, the college sample and the telephone sample provide a good fit. According to Browne and Cudeck (1993) RMSEA-values within a sampling error of .05 can be interpreted as reasonable fit. Consequently, the proposed theory has a reasonable fit in the agricultural sample, the telephone sample, and the college sample. However, neither that theory nor the alternative theory have a satisfactory fit in the insurance sample.

CAIC is used to assess the models' relative fit. The findings in the study support the proposed theory in all samples except from the life insurance sample. Notably, the measurement model accounts for χ^2 of 89.5 with 28 degrees of freedom. According to Anderson and Gerbing (1988), the measurement model is not good enough for testing the structural model (i.e., the GIGO-problem). Life insurance is, however, difficult for customers to evaluate due to its nature, and might also be a low involvement product for the time between purchase and consumption (e.g. death). Furthermore, the customers' knowledge of insurance products is generally low (Formisano et al., 1982), and the quality of an insurance product is often first evidenced when the conditions in the contract come into operation (e.g. age, injury, and death). The life insurance product is assumed to be difficult to evaluate due to the customers' lack of both involvement and experience with the core product (see Petty, Cacioppo and Schumann 1983; Bitner and Obermiller 1985). Despite the lack of fit in the model, the proposed theory, compared to the alternative theory, treats the effect of customer satisfaction on customer loyalty differently. Contrary to the alternative theory, the proposed theory is supported in that this effect is positive and significant. However since the model in the life insurance sample does not fit well it is inappropriate to assess its parameter values. As argued by Jöreskog (1993), the model should either be accepted or rejected as a whole. As emphasized by Meehl (1990) post hoc explanations (i.e. respecification of the model to the data) are not desirable.

ML and GL estimates of fit get systematically different results. GLS estimation gives the best fit for all the models. Particularly, the GLS seems to penalize models with lack of fit less than ML. As reported by Jöreskog and Sörbom (1989), ML and GL give the same estimates of fit as well as parameter values. However, when the fit is not satisfactory, there might be a systematic difference between the methods of estimation. In a simulation study by Olsson, Howell and Troye (1999), it was found that ML gives a relatively accurate estimation of even severely misspecified models. The larger the discrepancy between the true model and the theory, the greater the difference in fit between the estimations by ML and GL. Consequently, it might be possible to use the difference as an indicator of the amount of approximation error of the model (compared to the true model). The greatest discrepancy between ML and GL was found in the insurance sample (i.e., an average estimation discrepancy between GL and ML of .42 $\chi2$ per degree of freedom) and the smallest discrepancy was found in the college sample (i.e. an average of .016 χ^2 per degree of freedom).

Table 2

Unstandardized parameter estimates of the theory and the alternative theory

Parameter	COLLEGE SAMPLE (N=325)	LIFE INSURANCE SAMPLE[a] (N=187)	SALMON FEED SUPPLIER SAMPLE (N=125)	TELEPHONE COMPANY SAMPLE (N=395)
Performance quality→Customer Satisfaction				
Theory ML	1.93 (t=10.38)	1.53 (t=7.06)	.61 (t=2.80)	2.30 (t=8.02)
Theory GL	1.92 (t=10.51)	1.45 (t=7.52)	.62 (t=2.74)	2.29 (t=8.85)
Alternative theory ML	1.88 (t=10.11)	1.43 (t=6.87)	.57 (t=2.73)	2.16 (t=7.31)
Alternative theory GL	1.88 (t=10.25)	1.34 (t=7.36)	.58 (t=2.67)	2.14 (t=7.97)
Customer Satisfaction →Loyalty				
Theory ML	.53 (t=7.05)	.12 (t=2.37)	.23 (t=0.92)	.57 (t=3.33)
Theory GL	.53 (t=7.17)	.09 (t=1.61)	.41 (t=1.61)	.60 (t=3.42)
Alternative theory ML	.53 (t=6.92)	-.11 (t=0.50)	.20 (t=0.76)	.56 (t=3.14)
Alternative theory GL	.53 (t=7.01)	-.03 (t=-0.24)	.39 (t=1.45)	.59 (t=3.17)
Brand Reputation→ Loyalty				
Theory ML	.46 (t=3.42)	.51 (t=3.82)	.53 (t=3.54)	.64 (t=2.47)
Theory GL	.46 (t=3.46)	.54 (t=3.78)	.47 (t=3.54)	.59 (t=2.26)
Alternative theory ML	.45 (t=3.23)	1.00 (t=1.82)	.54 (t=3.34)	.65 (t=2.41)
Alternative theory GL	.45 (t=3.33)	.69 (t=2.44)	.47 (t=3.32)	.61 (t=2.20)

Source: Own computation.

Note. a: According to the previous discussion of the inappropriateness of assessing parameter estimates of a model with non-satisfactory fit, the life insurance sample is excluded in the further hypotheses test and estimates assessments.

These findings are consistent with the evaluation of the theories' fit. Moreover, since several different models are expected to obtain a reasonable fit, it is not sufficient to only assess the model's fit to the data (MacCallum 1986). Additionally, one can assess the degree of discrepancy between the ML and GL estimation. All samples except for the life insurance sample have an acceptable amount of similarity between the ML and GL. Finally, Olsson, Howell and Troye (1999) indicate that:

It seems quite clear that the "underestimation" of lack of fit by GLS in misspecified models is a result of more severe bias in the parameter estimates. That is, GLS is able to achieve an apparently "better" fit by estimating parameter values quite different from population values. ML, on the other hand, portrays a more accurate picture of the degree of misspecification while estimated parameters in the misspecified model are closer to their values in the generating population under the true model.

This can be observed in Table 2, where different parameter estimates under the two estimation techniques can affect whether a hypothesis is supported or not (for example, see the effect of customer satisfaction on loyalty in the life insurance sample and in the salmon-feed supplier sample).

The effect of performance quality on customer satisfaction is positive and significant ($p \leq .01$) in all samples. As proposed in both models, customers derive their satisfaction from their assessment of the attributes of the product. The effect of customer satisfaction on loyalty is positive and significant in all samples except from the agricultural wholesalers. The lack of a satisfactory t-value might partly be attributed to the small sample, compared to the other samples in the test. The effect of brand reputation on loyalty is positive and significant in all samples. It is also worth noting that the effect of brand reputation on loyalty is of equal strength compared to the effect of customer satisfaction.

5. IMPLICATIONS

The strong effect of brand reputation on loyalty is notable. The effects of extrinsic cues, brand name, and subjective norm, have been emphasized in the marketing literature (Lutz 1991; Petty, Cacioppo and Schumann 1983). The recent attention to the brand effect and brand value (Aaker 1991; Keller 1993) is also relevant in this case. However, some parts of the literature indicate that attitudes that result from thoughtful considerations (e.g. experience with the product) are stronger than those resulting from extrinsic cues (Petty, Cacioppo and Schumann 1983). No studies have provided support for the proposition that extrinsic cues (e.g. brand name) have less impact on attitudes than intrinsic cues (e.g. customer satisfaction) (see Bitner and Obermiller 1985). This study found that both kinds of cues might be of equal importance. Consequently, the significance of reputation as an important determinant of loyalty supports the notion that maintaining the firm's reputation in the market is important to customer loyalty. For products such as services, which are difficult to evaluate by customers and where comparison standards for

performance are not always readily available, reputation is highly important for the customers to assess with the firm (Darby and Karni 1973). However, this varies by product category. When the customer faces product differences, brand reputation can be useful to reduce the risk of choosing an inefficient product alternative. On the other hand, when the product alternatives are similar, brand reputation will facilitate loyalty due to both the role of evoked set and the role that brand reputation serves as a buying heuristic. Additionally, brand reputation may function as a social norm, particularly when the products are exclusively and public consumed (Bearden and Etzel 1982).

In addition to the effects of supplier reputation, a positive effect of customer satisfaction on loyalty was found in this study. As suggested in the marketing literature, customer satisfaction entails loyalty. Therefore, it is no surprise that there was a significant and positive relationship in two of the samples. Furthermore, satisfaction can be viewed as a function of performance quality of the experience with the product, which also was supported in this study.

There are two additional issues in the study that should be addressed. The first issue is the brand reputation and customer satisfaction relationship. There is a better fit for the model when brand reputation and customer satisfaction are treated as two independent constructs. There are positive and significant effects with both of the loyalty drivers. One way of explaining this is by drawing a parallel to the theory of reasoned action (Fishbein 1967; Fishbein and Ajzen 1975), in which the attitude toward behavior is a function of the social context as well as the individual's own thoughtful considerations. One should expect a particularly strong effect on loyalty when brand reputation and customer satisfaction are consistently perceived (positively or negatively). A second possible explanation (i.e. post hoc explanation) is provided by Lefkoff-Hagius and Mason (1993). A product consists of three kinds of attributes: characteristic, beneficial, and image. In their study, Lefkoff and Mason (1993) found that beneficial attributes are relatively most important in evaluating preference, and that characteristic and image attributes are relatively most important for distinguishing among products (i.e. judgment of product similarities). Consequently brand reputation might be an important information source regarding product similarities (e.g. brand image and product descriptions), and the customer's own experience might be an important information source regarding the product's use benefits (Nelson 1970). It is expected that the use of benefits is more idiosyncratic because customers are different, the use situations are different, etc. Therefore, it might appear that the two sources of loyalty included in this study are complementary in nature.

The other issue is why the theory does not behave equally with all samples. As indicated in Tables 1 and 2, there might be some systematical differences

among the samples. As proposed in the product classification literature (e.g. Murphy and Enis 1986; Iacobucci 1992), products differ across many dimensions. This heterogeneity of services and contexts might affect the customers' buying decisions and loyalty formation. Traditionally, involvement and risk have been important variables for explaining differences among decision processes (Petty, Cacioppo and Schumann 1983; Murphy and Enis 1986). However, other characteristics can be added to "the list", for example whether the products are services or goods, the credence or experience characteristics of the products, their complexity, intangibility, standardization, etc. (Iacobucci 1992; Nelson 1970; Darby and Karni 1973). If we consider the college and the telephone company samples as experience products, the life insurance sample as credence product, and the agricultural wholesaler sample as search products, we might be able to provide some post hoc explanations for why the model behaves differently for those three groups of samples. For example, the credence nature of life insurance products makes it difficult for the customers to evaluate the products before and even after purchase. Consequently, the traditional approach to modeling antecedents of loyalty may no longer hold. This can further be extended by including situational factors (e.g. time pressure, decision reversibility, personal accountability), and person variables (e.g. need for cognition, individual differences in sensitivity to peripheral cues, knowledge) (see Bitner and Obermiller 1985; Bloemer and Kasper 1995). Therefore, the theory proposed in this paper will most likely perform differently for different products, situations, and persons. An extension of the model might increase the amount of variance explained, and contribute toward a contingency theory of routes to loyalty. It should, however, be noted that the theory presented in the paper has a satisfactory overall fit, and therefore it is viewed as being not rejected.

6. LIMITATIONS AND FURTHER RESEARCH

This study has several limitations. First, the hypotheses are deduced from the theory, but the research design does not provide any support for the causal directions among the variables. Second, the lack of control variables may result in possibly spurious covariations. Possible control variables could be: product involvement, product knowledge, and product experience. Third, the measures could be further developed. Measure development research on true brand loyalty versus spurious brand loyalty (Bloemer and Kasper 1995; Zeithaml,

Berry, and Parasuraman 1996), product performance, and customer satisfaction (see Oliver 1997) could be taken into account. Furthermore, since supplier reputation has a great impact, a more fine-grained construct and appropriate measures should be developed in order to capture additional facets of reputation. Such measurement improvement also includes a multi-level analysis to reduce the threat of confounding effects. Fourth, if the effects in this study vary across services industries, further studies should explore more moderating effects. Fifth, in order to improve the cross-validation of the theory comparison, new samples should be added.

REFERENCES

Aaker, D. A. (1991): *Managing Brand Equity: Capitalizing on the Value of Brand Name*. The Free Press, New York.

Anderson, E. W., Fornell, C., Lehmann, D. R. (1996): *Customer Satisfaction, Market Share and Profitability: Findings From Sweden,* "Journal of Marketing" vol. 58, no 3, pp. 53-66.

Anderson, J. C. and Gerbing, D. W. (1988): *Structural Equation Modeling in Practice: A Review and Recommended Two-Step Approach*, "Psychological Bulletin" vol. 3, pp. 411-423.

Bagozzi, R. P., Yi, Y. (1988): *On the Evaluation of Structural Equation Models*. "Journal of the Academy of Marketing Science" vol. 16, no 1, pp. 74-94.

Bearden, W. O., Etzel, M. J. (1982): *Reference Group Influence on Product and Brand Purchase Decisions,* "Journal of Consumer Research" vol. 9, September, pp. 183-194.

Bitner, M. J., Obermiller, C. (1988): *The Elaboration Likelihood Model: Limitations and Extensions,* in: Hirschman, E. C. and Holbrook, M. B., eds.: *Advances in Consumer Research*, Association for Consumer Research, Ann Arbor, vol. 12, pp. 420-425.

Bloemer, J. M. M. and Kasper, H. D. P. (1995): *The Complex Relationship Between Consumer Satisfaction and Brand Loyalty*, "Journal of Economic Psychology", pp. 311-329.

Bollen, K. A. (1989): *Structural Equations with Latent Variables*, Wiley, New York.

Bollen, K. A. and Long, J. S. (1993): *Introduction*, in: Bollen, K. A., Long, J. S., ed.: *Testing Structural Equation Models*, London, Sage, pp. 1-9.

Boulding, W., Kalra, A., Staelin, R. and Zeithaml, V. A. (1993): *A Dynamic Process Model of Service Quality: From Expectations to Behavioral Intentions,* "Journal of Marketing Research" vol. 30, February, pp. 7-27.

Browne, M. W. and Cudeck, R. (1993): *Alternative Ways of Assessing Model Fit*, in: Bollen, K. A., Long, J. S. eds.: *Testing Structural Equation Models*, London, Sage, pp. 136-162.

Copeland, M. T. (1923): *Relations of Customers" Buying Habits to Marketing Methods*, "Harvard Business Review" vol. 1, no. 2, pp. 282-289.

Darby, M. R. and Karni, E. (1973): *Free Competition and the Optimal Amount of Fraud,* "The Journal of Law and Economics" vol. 2, no. 16, pp. 67-88.

Deighton, J. (1992): *The Consumption of Performance*, "Journal of Consumer Research" vol. 19, December, pp. 362-72.

Dick, A. S. and Basu, K. (1994): *Customer Loyalty: Toward an Integrated Conceptual Framework*, "Journal of the Academy of Marketing Science" vol. 22, no. 2, pp. 99-113.

Engel, J. E., Blackwell, R. D. and Miniard, P. W. (1990): *Consumer Behavior*, 6th ed. The Dryden Press, Chicago.

Fiore, A. M. and Damhorst, M. "L. (1992): *Intrinsic Cues as Predictors of Perceived Quality Apparel*, "Journal of Consumer Satisfaction, Dissatisfaction and Complaining Behavior" vol. 5, pp. 168-178.

Fishbein, M. (1967): *Attitude and the Prediction of Behavior*, in: Fishbein, M., ed.: *Readings in Attitude Theory and Measurement*, John Wiley & Sons, New York, pp. 477-492.

Fishbein, M. and Ajzen, I. (1975): *Beliefs, Attitude, Intentions, and Behavior: An Introduction to Theory and Research*, Addison-Wesley, Massachussets

Formisano, R. A., Olshavsky, R. W. and Tapp, S. (1982): *Choice Strategy in a Difficult Task Environment*, "Journal of Consumer Research" vol. 8, March, pp. 474-479.

Fornell, C. (1992): *A National Customer Satisfaction Barometer: The Swedish Experience*, "Journal of Marketing" vol. 55, January, pp. 1-21.

Hogarth, R. (1987): *Judgement and Choice*, John Wiley & Sons, New York.

Iacobucci, D. (1992): *An Empirical Examination of Some Basic Tenets in Services: Goods-Services Continua*, "Advances in Services Marketing and Management" vol. 1, pp. 23-52.

Jacoby, J. and Chestnut, R. W. (1978): *Brand Loyalty Measurement and Management*, John Wiley & Sons, New York.

Jacoby, J. and Kyner, D. B. (1973): *Brand Loyalty vs. Repeat Purchasing Behavior*, "Journal of Marketing Research" vol. 5, February, pp. 1-9.

Jöreskog, K. G. (1993): *Testing Structural Equation Models*, in: Bollen, K. A., Long, J. S., ed.: *Testing Structural Equation Models*, London, Sage, pp. 294-316.

Jöreskog, K. G. and Sörbom, D. (1989): *LISREL 7: A Guide to the Program and Applications*, SPSS, Chicago.

Keller, K.L. (1993): *Conceptualizing, Measuring, and Managing Customer-Based Brand Equity*, "Journal of Marketing" vol. 57, January, pp. 1-22.

Kielser, C. A. (1971): *The Psychology of Commitment*, The Academic Press, New York.

Krishnamurthi, L. and Raj, S. P. (1991): *An Empirical Analysis of the Relationship Between Brand Loyalty and Consumer Price Elasticity*, "Marketing Science" vol. 10, no. 2, pp. 172-183.

LaBarbera, P. A. and Mazursky, D. (1983): *A Longitudinal Assessment of Consumer Satisfaction/Dissatisfaction: The Dynamic Aspect of the Cognitive Process*, "Journal of Marketing Research" vol. 20, November, pp. 393-404.

Lefkoff-Hagius, R. and Mason, C. H. (1993): *Characteristic, Beneficial, and Image Attributes in Consumer Judgments of Similarity and Preference*, "Journal of Consumer Research" vol. 20, June, pp. 100-110.

Lutz, R.J. (1991): *The Role of Attitude Theory in Marketing*, in: Kassarjian, H. H. and Robertson, T. S. eds.: *Perspectives in Consumer Behavior*, Prentice-Hall, New Jersey, pp. 317-339.

MacCallum, R. (1986): *Specification Searches in Covariance Structure Modeling*, "Psychological Bulletin" vol. 100, no. 1, pp. 107-120.

Meehl, P. E. (1990): *Appraising and Amending Theories: The strategy of Lakatosian Defense and Two Principles That Warrant It*, "Psychological Inquiry" vol. 1, no. 2, pp. 108-141.

Mellens, M., Dekimpe, M. G. and Steenkamp, J. B. (1995): *A Review of Brand-Loyalty Measures in Marketing*, Onderzoeksrapport No. 9516, Katholieke Universiteit, Leuven.

Morgan, R. M and Hunt, S. D. (1994): *The Commitment-Trust Theory of Relationship Marketing*, "Journal of Marketing" vol. 58, July, pp. 20-38.

Murphy, P. E. and. Enis, B. M. (1986): *Classifying Products Strategically*, "Journal of Marketing" vol. 50, July, pp. 24-42.

Nelson, P. (1970): *Information and Consumer Behavior*, "Journal of Political Behavior" vol. 78. pp 311-329

Newman, J. W. (1977): *Consumer External Search: Amount and Determinants*, in: Woodside, A. G., Sheth, J. N. and Bennett, P. D., eds.: *Consumer and Industrial Buying Behavior*, Elsevier North-Holland, New York , pp. 79-94.

Newell, A. and Simon, H. A. (1972): *Human Problem Solving*, Prentice Hall, Englewood Cliffs.

Oliver, R. L. (1997): *Satisfaction: A Behavioral Approach*, McGraw-Hill, New York.

Oliver, R. L. (1980): *A Cognitive Model of Antecedents and Consequences of Satisfaction Decisions*, "Journal of Marketing Research" vol. 17, November, pp. 460-469.

Olshavsky, R. W. and Granbois, D. H. (1979): *Consumer Decision Making - Fact or Fiction?* "Journal of Consumer Research" vol. 6, September, pp. 93-100.

Olsson, U. H., Troye, S. V. and Howell, R. D. (1999): *Theoretical Fit and Empirical Fit: The Performance of Maximum Likelihood versus Generalized Least Squares Estimation in Structural Equation Models*, "Multivariate Behavior Research" vol. 34, no. 1, pp. 31-58.

Petty, R. E., Cacioppo, J. T. and Schumann, D. (1983): *Central and Peripheral Routes to Advertising Effectiveness: The Moderating Role of Involvement*, "Journal of Consumer Research" vol. 10, September, pp. 135-146.

Payne, J. W. (1982): *Contingent Decision Making*, "Psychological Bulletin" vol. 92, pp. 382-402.

Reichheld, F. F. and Sasser, W. E. (1990): *Zero Defections: Quality Comes to Services*, "Harvard Business Review" September-October, pp. 105-111.

Rosen, D. L. and Olshavsky, R. W. (1987): *A Protocol Analysis of Brand Choice Strategies Involving Recommendations*, "Journal of Consumer Research" vol. 14, December, pp. 440-444.

Selnes, F. (1993a): *An Examination of the Effect of Product Performance on Brand Reputation, Satisfaction and Loyalty*, "European Journal of Marketing" vol. 27, no. 9, pp. 19-35.

Selnes, F. (1993b): *An Examination of the Effect of Product Performance on Brand Reputation, Satisfaction and Loyalty*, "Journal of Product & Brand Management" vol. 2, no. 4, pp. 45-60.

Smith, D. C. and Park, C. W. (1992): *The Effects of Brand Extensions on Market Share and Advertising Efficiency*, "Journal of Marketing Research" vol. 24, August, pp. 296-313.

Stewart, D. W., Hickson, G. B., Ratneshwar, S., Pechmann, C. and Altemeier, W. (1985): *Information Search and Decision Strategies Among Health Care Consumers*, "Association for Consumer Research" vol. 12, pp. 252-257.

Tversky, A. (1972): *Elimination by Aspects: A Theory of Choice*, "Psychological Review" vol. 79, July, pp. 281-299.

Tversky, A. and Kahneman, D. (1974): *Judgement under Uncertainty: Heuristic and Biases*, "Science" vol. 185, pp. 1124-1131.

Zeithaml, V. A. (1988): *Consumer Perceptions of Price, Quality, and Value: A Means-End Model and Synthesis of Evidence*, "Journal of Marketing" vol. 52, July, pp. 2-22.

Zeithaml, V. A., Berry, L. L. and Parasuraman, A. (1996): *The Behavioral Consequences of Service Quality*, "Journal of Marketing" vol. 60, April, pp. 31-46.