Full Length Research Paper

A review of the relationship between brand loyalty, customer satisfaction and commitment using structural equation modeling within the internal control process

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One of the factors that play a determining role in the success of today's companies is the trust given by individuals to companies and the commitment that individuals feel towards these companies and their products as a result of this trust. This situation determines the structure of internal control system policies. The purpose of this study is to identify the relationship between brand loyalty, satisfaction and commitment of consumers with the help of structural equation models (SEMs). The data obtained from a survey of 300 consumers residing in Antalya was analyzed. The research shows that consumer satisfaction has a direct effect on commitment and an indirect effect on brand loyalty and that commitment directly affects brand loyalty.

Key words: Brand loyalty, satisfaction, commitment, structural equation modeling, AMOS.

INTRODUCTION

The concept of brand loyalty that was introduced into the literature of marketing by Copeland (1923) was dealt with as a conclusion in the initial studies. Here, loyalty was accepted as a repeated purchasing of the product or resistance shown to the purchasing of alternative products (Cunningham, 1956; Pessemier, 1959; Farley, 1964). This approach which aims to explain brand loyalty and the formation of brand loyalty is named as behavioral brand loyalty.

In subsequent periods, various authors tried to interpret brand loyalty through concepts based on psychological factors. This approach is termed as attitudinal brand loyalty. The attempt to explain brand loyalty with various factors was an important step towards understanding the concept of loyalty.

Many authors continued to attach importance to the conceptualization of loyalty in this manner (Jacoby, 1971; Jacoby and Kyner, 1973; Backman and Crompton, 1991; Dick and Basu, 1994). One of the important contributions

of the studies on the concept of attitudinal brand loyalty to the literature was to differentiate between brand loyalty and repeated purchasing behavior.

Despite the fact that brand loyalty has been defined in various ways, one of the most generally accepted definitions belongs to Jacoby (1971). According to Jacoby, brand loyalty is the tendency to purchase one brand more than other brands. Brand loyalty is the rate or percentage of the purchase of a brand in a product class. It can also be the order or frequency of purchasing among different brands purchased within a given period.

In later studies, Jacoby and Chestnut (1978) came up with a definition of brand loyalty used by many authors. Brand loyalty is a function that is: (1) biased (that is, non-random), (2) a behavioral response, (3) expressed over time (continuous), (4) taken by some decision-making units, (5) chosen out of a set of alternative brands, and (6) a psychological process. According to these authors, genuine brand loyalty relies on commitment.

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In application, the definition of brand loyalty by Jacoby and Chestnut (1978) leads to certain problems. It is a highly improbable that one consumer can provide all of these conditions at the same time. For this reason, the definition of brand loyalty that rests on the tendency to purchase has been accepted in this research. When the literature on both marketing and management science is analyzed, it can be seen that researchers have generally tended to adopt the definition of brand or company loyalty suitable to the characteristics and requirements of the research.

By defining brand loyalty as the tendency of the consumer to purchase a brand in a stable manner, we will have solved the question of how brand loyalty can be measured. Analyzing the literature, it can be seen that brand loyalty is measured with two basic methods of measurement. The first approach, the behavioral brand loyalty measurement approach, is based on the arithmetic mean reached as a result of examining this or that manner of purchasing behavior style.

The attitudinal brand loyalty measurement approach is based on the intention of the consumer to purchase instead of purchasing behavior itself. In this research, the attitudinal brand loyalty approach has been adopted and brand loyalty has been measured as the intention to purchase the brand in the future.

THE RELATIONSHIP BETWEEN COMMITMENT AND BRAND LOYALTY

Even though the concept of commitment is a subject of research on organizational behavior, it was first discovered by marketing researchers and covers an important place in the literature on marketing. In studies on organizational behavior, it is a factor frequently used to research the commitment of employees to the employer (Steers, 1977; Angle and Perry, 1981; Bateman and Strasser, 1984; Lee et al., 1992; Thomson et al., 1999; Malhotra and Mukherjee, 2003; Donavan et al., 2004; Meyer et al., 2007). Later, it was used in examining the relationship between consumer and brand in the literature on marketing (Hunt et al., 1985; Garbarino and Johnson, 1999).

Many marketing academicians applied the concept and scale of organizational commitment in exactly the same way in their studies. Commitment is an important concept and tool in the literature on relational marketing (Morgan and Hunt, 1994; Lacey, 2007). In the literature on marketing, commitment is considered as a resistance against change (Pritchard et al., 1999) and the desire to maintain a valuable relationship (Moorman et al., 1992). According to Morgan and Hunt (1994), commitment is a relationship that is tried to be maintained and thus continues.

Ulrich (1989) approached the subject from an informational dimension. To Ulrich, the progress of commitment is provided by information and behavior. The first stage in creating commitment is to obtain reliable information. By obtaining wide-ranging, understandable and reliable information, individuals will join in activities suitable to this information. Unless a behavior is developed that is based on information obtained, it is not possible for commitment to take place. Behavior based on information enables consumers to develop further commitment. The more an action is done with voluntary control, the more irreversible it is and the more publicly it is done, the more the commitment will get intensified.

Delgado-Ballester and Munuera-Alemán (2001) state that commitment is based on brand trust, that involvement acts as an intermediary and that continuity of information related to the brand will also render commitment continuous. In this situation, the theory of commitment acting through information and the process of information form its own processes.

That commitment takes place at the end of a process was put forth by Pritchard et al. (1999). According to the author, commitment is formed at the end of three antecedent processes: Informational processes, identification processes and volitional processes.

1. Informational processes: Consists of informational complexity, cognitive consistency and confidence. Informational complexity uses the processing of information to form complex cognitive structures. Deviation from an attitude is said to be met with resistance. Cognitive consistency works by defending one's commitment when faced with conflicting information. Confidence takes place when the consumer thinks that his/her beliefs are true and his/her attitudes are guaranteed. When consumers are confident about their judgment, they will not change their attitudes towards the brand.
2. Identification processes: Identification has been used by Pritchard and others as the association of the consumer's self-image and values with a particular brand. When consumers identify themselves with a brand, their preference will not change.
3. Volitional processes: Consumers feel personally more responsible for their decisions when they make a choice on their free will. Free choice attaches meaning to behavior and leads to the development of the commitment.

The level of commitment determines a company's strategic decisions about its product or brand. Determining the high commitment level and the low commitment level of consumers will provide marketing staff with the opportunity to develop the appropriate marketing programs (Martin and Goodell, 1991) (Table 1). In the literature on management and marketing, com-mitment in general has been examined as two com-ponents such as affective and continuance commitment (Fullerton, 2003, 2005). While affective commitment rests on emotions developed for the brand that is the subject of the relations, the continuance commitment depends on exchange costs, self-sacrifice, non-existence of an alternative and dependency.

Table 1. Commitment and marketing mix decisions.

	High product commitment	Low product commitment
Marketing characteristics	High product/brand loyalty. In general high purchasing involvement (such as widespread search). In general it can be seen in sought after/special/durable goods. Can be seen for differentiated goods. WOM can be observed. Can be seen in non-frequently purchased items. In the event a wrong decision is made situations where an adverse outcome is met can be observed.	Low product/brand loyalty is seen. Affective purchasing is widespread. In general it can be seen in low priced items. Can be seen for non-differentiated goods. Low consumer risk. Typically low purchasing involvement (such as less searching). Intense competition, a good many substitute products.
Marketing mix	Price skimming strategy can be applied. Image shaping and emphatic messages. Avoidance of comparative ads. Selective distribution, distribution to selective shops, extensive sale and service support must be provided.	Trial price promotion, creating awareness. Competitive pricing necessary. Emphasis on eye-catching features. Comparative advertisement can be applied. More intense distribution, mass distribution, high accessibility. Competitive pricing consistent with product quality.

Source: Martin and Goodell (1991).

Beatson et al. (2006), on the other hand, divide commitment into three parts: affective commitment, temporal commitment and instrumental/beneficial commitment. They have put forward that satisfaction results in commitment. Affective commitment is defined as a desire by the consumer to maintain a relationship because of a positive emotional influence. Temporal commitment is not based on affective relationship but on the expectation of the consumer that the relationship will continue in the future. The instrumental/beneficial commitment encompasses the possible benefits to be lost in case the consumer ends the relationship. The benefits to be lost can be economic or psychological in nature. Gustafsson et al. (2005) in a similar approach classified commitment as affective and calculative commitment.

In general, it can be seen from the literature that commitment takes place out of a two-dimensional combination formed of consumer's heart and the consumer's logic. Meyer et al. (2007) added the normative commitment and put forward the view that commitment consists of three components: affective commitment (what the consumer wants to do); continuance commitment (what the consumer has to do) and normative commitment (what the consumer should do). As with brand loyalty approaches, it is also possible to name these components as attitudinal commitment and behavioral commitment. However it is defined, it is possible to state that commitment has both a psychological and a behavioral direction.

THE RELATIONSHIP BETWEEN COMMITMENT AND BRAND LOYALTY

Whether emotionally or economically based, the fact that

commitment is he need and/or desire to continue with the existing relationship in a commitment provides a suitable factor for a commitment involving brand loyalty or as an intention to repurchase. Many researchers in the literature have considered commitment as an important factor in brand loyalty. The assumption that the consumer is mediating by evaluating the operational performance with the intention to continue the relationship with the company has led to an overemphasis on commitment's role in brand loyalty (Fullerton, 2005).

In particular, authors that adopt the attitudinal brand loyalty distinguish the repeat purchase behavior as real or false commitment and have used commitment as a measure of difference (Day, 1969; Liljander and Roos, 2002). Martin and Goodell (1991) have stated that commitment has both a behavioral and an attitudinal dimension and that commitment have a more powerful structure than repeat purchasing behavior. Despite Lacey's (2007) research showed that commitment would result in both the intention to repeat purchase as well as an increase in the amount of the repurchase, Fullerton's (2005) study has put forth that commitment does not always increase customer loyalty.

Fullerton (2005) found that affective commitment affects the intention to exchange in a negative manner and the intention in defending the brand in a positive manner but that commitment that will continue with that commitment has a weaker effect than the repeat purchase intention and that it has a negative effect in the intention to defend the brand.

Vaidyanathan and Aggarwal (2005) in their empirical studies stated that individuals develop an intension to purchase the products they have indicated they are committed to and that the reason for this was to show that the commitments they had declared were consistent

with their behavior. Gustafsson et al. (2005) in explaining the repeat purchase behavior used satisfaction, affective commitment and calculative commitment and found that satisfaction and calculative commitment have an effect on repeat purchases (It was found that scales did not measure affective commitment and that is also included the dimension of satisfaction was discovered).

Delgado-Ballester and Munuera-Alemán (2001) have suggested that brand loyalty is comprised of consumer commitment and the intension to purchase again and that commitment leads the consumer to the intention to repurchase again. Pritchard et al. (1999) on the other hand, have suggested that the consumer defining oneself with a brand to a large extent prevented the consumer from changing their attitude and that this situation has led to the development of brand loyalty.

Fullerton (2003) has stated that commitment (affective commitment) that rests on shared values and descriptions leads to brand loyalty but that exchange costs and commitment based on dependence (continuance commitment) must also be present. Bansal et al. (2004) has found that each of the factors in which commitment consisted of three factors has a negative effect on the consumer's intension to exchange, that is to say, it enables the consumer to be committed. In their study on the effects of satisfaction, trust and commitment on the intent to purchase, Garbarino and Johnson (1999) found that low attitudinal was the primary factor in satisfaction among consumers but that high attitudinal was more important in trust and commitment among consumers.

THE RELATIONSHIP BETWEEN CONSUMER SATISFACTION AND BRAND LOYALTY

In the literature on marketing, it has been indicated that general satisfaction takes place after the product has been purchased and consumed (Labarbera and Mazursky, 1983; Cadotte et al., 1987; Westbrook and Oliver, 1991). General satisfaction is an evaluation that is derived from the experience of the consumer on a product or a service (Beatson et al., 2006). For this reason, general satisfaction is an affective situation that takes place after a product or service experience. It is also defined as the affective reaction shown after a product of service is experienced (Spreng et al., 1996). Satisfaction is also seen as one of the affective aspects of the result of the evaluation period (Woodruff et al., 1983). The most important dimensions used in studies on satisfaction are in general affective. As a result of the evaluation, consumers experience emotions at different levels. These may be happiness, pleasant or unpleasant emotions, anger or sadness (Westbrook and Oliver, 1991). Homburg and Giering (2001) defined consumer satisfaction as the consumer's cognitive and emotional evaluation after the expected performance and the perceived

performance are compared. If the consumer's perceived performance after the purchase goes beyond the performance expectations prior to the purchase, it is accepted that the consumer is satisfied or at least will be satisfied.

The approach that considers the satisfaction as the difference between the expected and the perceived is named as "approval/non-approval of expectations" approach (Spreng et al., 1996). However, when certain expectations of the characteristics of consumer satisfaction exceed expectations, satisfaction is provided. Yet, some characteristics do not result in satisfaction. When they do not meet expectations, dissatisfaction arises (Swan and Combs, 1976). This situation led to research on satisfaction to focus on the influence of concepts such as the product itself (Labarbera and Mazursky, 1983; Spreng et al., 1996; Mittal et al., 1998), quality (Kim and Stoel, 2004), performance (Woodruff et al., 1983; Spreng et al., 1996), feature (Beatson et al., 2006), sales personnel and after sales (Homburg and Giering, 2001) etc. on the evaluation of satisfaction.

In the literature on marketing, research was carried out on the relationship between different dimensions and consumer satisfaction and recommendations were made for practitioners as to which area the most suitable improvement should take place. For example, if performance is the only determinant in general consumer satisfaction, then it was recommended to increase the perceived performance (Wu et al., 2006). For this reason, it was accepted that satisfaction in general was determined by the product's performance, quality and other perceived outputted characteristics.

It is possible to state that studies on satisfaction focuses on economic benefits and are based on the assumption of economic man. However, the approval/non-approval of expectations approach has a serious flaw: if the expectations of the consumer before the purchase are very low, the rate of satisfaction will be measured to be high because of the large difference between the expected and the perceived (Spreng et al., 1996). The reverse situation is also possible.

A majority of the satisfaction models have focused on the difference between expectations before the purchase and the product performance perceived after the purchase. As the end of this evaluation process, to what extent expectations were met, how much is acceptable and the minimum acceptable levels are taken into consideration. The more positive the perceived output is, the more the consumer is satisfied. While many authors only differentiate between being satisfied and unsatisfied, Miller (1976) mentioned different levels of satisfaction such as expected, rightful, ideal and the lowest performance (Woodruff et al., 1983).

Consumer satisfaction is mainly a defensive approach (Rust and Zahorik, 1993). According to this approach, operational resources should be used to retain existing customers. Until 1980s, it was assumed that satisfaction

would keep consumers loyal. For approximately a decade, it was believed that satisfaction would enable the consumer to be focused, that it would provide positive verbal advertisement, increase loyalty and thus increase profits (Bearden and Teel, 1983; Wu et al., 2006; Ranaweera, 2007). Therefore, consumer satisfaction was considered as the primary duty for many companies (Homburg and Giering, 2001).

Profits are not directly affected with satisfaction. However, presuming that it provides repeated purchase, it is noted to affects profitability. Rust and Zahorik (1993) stated that satisfaction affected the rate of repeated purchase and the repeated purchase rate affected the market share. It was put forth that consumer satisfaction is the premise of loyalty (Suh and Yi, 2006).

Many authors have concluded that satisfaction has a positive effect on the intention to repurchase (Labarbera and Mazursky, 1983; Mittal et al., 1998). In their studies that examined the relationship between satisfaction and brand loyalty, Homburg and Giering (2001) indicated that individual characteristics (variety search, age and income) had a powerful effect. Mittal et al. (1998), on the other hand, found that the negative performance of general satisfaction and repeat purchase had a stronger effect than positive performance. According to these authors, product performance has both a direct and an indirect effect on repeat purchase.

Authors that have examined the relationship between consumer satisfaction and brand loyalty can be gathered into three groups. The authors in the first group researched the existence of the relationship between satisfaction and loyalty. In general, these researches which used linear equations found a relationship between consumer satisfaction and brand loyalty (Halstead and Page, 1992; Biong, 1993; Anderson et al., 1994; Taylor and Baker, 1994; Hallowell, 1996). However, they did not provide further explanations. Authors who studied the function of the relationship between satisfaction and loyalty used non-linear equations (Woodruff et al., 1983; Jones and Sasser, 1995; Mittal et al., 1998).

In general, the most important contribution to the literature of the relationship explained with curvilinear functions has been that at a particular point (zone of indifference) the function of the relationship between satisfaction and loyalty reaches its lowest level (Homburg and Giering, 2001). In the third group, authors that examined the mediating variables in this relationship have tried to explain the role of external factors in satisfaction-loyalty relationship. Among these authors, Homburg and Giering (2001) examined the effects of individual characteristics on this relationship. Yet, Bearden and Teel (1983) examined the effect of complaint behavior on satisfaction.

However, many studies have turned out to be un-successful in estimating how satisfaction scores will affect the behavior of consumers. Obviously, satisfaction is necessary for loyalty but satisfaction alone is not sufficient (Jones and Sasser, 1995). Soon after these researches, it has been suggested that satisfaction measured the rational and functional aspects of consumer experience, that they were retrospective evaluations and that they did not take into account (did not measure) the emotions of the consumer involving the brand (Miller, 2005). Chandrshekaran et al. (2007) divided satisfaction into satisfaction level and satisfaction strength and indicated that consumer loyalty was effected by satisfaction strength.

It is a reasonable idea that consumer satisfaction will lead to repeat purchase. To authors that put forth the view that brand loyalty has been learnt (Sheth, 1968; Oliver, 1999), the presumption that satisfied consumers will develop their repeat purchase behavior - is as logical as the suggestion that an unsatisfied consumer will not repurchase again.

Nevertheless, studies conducted do not support the view that consumer satisfaction guarantees the repeat purchase behavior. In order to clarify this situation, it has been suggested that the satisfaction level is important rather than the satisfaction itself. That is to say, that satisfaction has levels and that completely satisfied consumers in are more loyal compared to only satisfied consumers (Jones and Sasser, 1995). To put it another way, it is not enough for a consumer to be satisfied in order for repeat purchase behavior to take place. In fact, the consumer has to be enraptured (Ngobo, 1999).

Stauss and Neuhaus (1997) suggested that the intensity of satisfaction is not sufficient by itself but that the quality of satisfaction is important, as well. The quality of satisfaction, on the other hand, was defined to be dependent on affective and cognitive situations. They have suggested that consumers at the same satisfaction level will present different emotions and that as a consequence this will affect their future purchases. As a result of the research conducted, the finding that satisfaction does not lead the consumer to a repeat purchase behavior caused doubts about the satisfaction-brand loyalty relationship.

RESEARCH

Sample

The research was conducted within the provincial boundaries of Antalya. The structural equation modeling (SEM) analysis requires large samples and only when the sample size increases, does the possibility of the verification of the hypothesis increase. This situation can result in the error of accepting a hypothesis which should be rejected (Kline, 2005). Even though an appropriate sample size is not specified in the literature on SEM studies, it can be concluded that a sample of 200 and 400 is appropriate. Taking SEM as a basis, the sample size has been specified as 300. Using the stratified sampling method in the research, the quota for each neighborhood was determined and the numbers were rounded off. In the end, 300 surveys were collected.

Data collection tool

The data collection tool consists of four sections: Satisfaction

Table 2. Ideal goodness of fit values.

Goodness of fit	Ideal value
Degree of freedom (df)	
Chi-square value (x^2)	
Chi-square/degree of freedom (x^2/df)	x^2/df <2 a good model, 2≤x^2/df≤5 average, 5< x^2/df ≤8 an acceptable model
RMR	Good as it approaches zero
GFI	Good as it approaches 1, >0.90 a good model
AGFI	Good as it approaches 1, >0.90 a good model
RMSEA	The smaller the better,<0.05 good, <0.08 an acceptable model
TLI	≥0.95 good, however 0>TLI>1 acceptable
AIC	The smaller the better, used in comparison of models, not used for a single model
ECVI	The smaller the better, used in comparison of models, not used for a single model

questions (Aaker et al., 2004), brand loyalty questions (Aaker et al., 2004), brand loyalty scale (Johnson et al., 2006) and demographic questions. The questions are of the five-point Likert type (5=strongly agree, 1=strongly disagree). The analysis was done using the AMOS 18 software package.

Analysis

The analysis utilized the SEM. The AMOS software package uses the maximum likelihood (ML) default method in its analysis. Since the purpose of the research is to examine the relationship between satisfaction, commitment and loyalty, the alternative modeling strategy was used in the analysis. In this method, it was statistically researched which of the models put forth as alternative models comply with the observed data. In the research, the Lee-Hersberger replacing rules were used.

Lee-Hersberger replacing rules (Kline, 2005: 154)

I. Within a blog of variables not completely defined and unilaterally associated with succeeding variables, the mutual correlations between direct effects (for example, Y_1 and Y_2), error terms (for example, D_1 ve D_2), the mutual effects restricted by equivalence (for example, two non-standardized direct effect defined as equal) can be exchanged with each other. To give an example, $Y_1 \rightarrow Y_2$ relationship can be exchanged with $Y_2 \rightarrow Y_1$, $D_1 \leftrightarrow D_2$ or $Y_1 \leftrightarrow Y_2$. If two variables are defined as external, they can be substituted with an unaccounted association.
II. In the subsequent stages of the model, all the relationships of two one-directional external variables with identical reasons can be substituted with each other. That is, $Y_1 \rightarrow Y_2$, $Y_2 \rightarrow Y_1$, $D_1 \leftrightarrow D_2$ and the equality constraint defined mutual effect $Y_1 \leftrightarrow Y_2$ relationship can be exchanged with each other.

Furthermore, in the research, recommendations made by Kline (2005) to be used in testing the equivalent models were applied. In all of the equivalent models x^2 and the goodness of fit values are the same. For this reason, while making a selection between the equivalent models, compliance with the theory rather than the statistical evaluations should be considered (Kline, 2005: 156). In the research, first, the Lee-Hersberger replacing rules were applied and models with the most promising statistically significant results were identified. Subsequently, among the equivalent models, the model most suitable to the marketing theory was identified as the last model.

The reliability and validity of the scale

In testing the reliability and validity of the model, Cronbach's alpha value and the confirmatory factor analysis methods were employed. Both methods are frequently preferred in calculating reliability and validity in research. The Cronbach's alpha value was calculated to be 0.906. This value is an indication of high reliability.

In the SEM analysis while rectangles symbolize the observed variables, ellipses symbolize latent variables. Latent variables are theoretically accepted to exist in real world but are dimensions that cannot be directly measured. In this respect, latent variables are accepted as factors.

In the statistical analysis and in SEM analysis, two criteria are considered. First, whether the relationships between the variables are significant or not is questioned. Second, whether the model in general is significant or not is questioned. In the analysis of variables, one way arrows are taken into account. Each arrow is denoted with a regression equation and stands for a hypothesis. Comments are done in a way similar to the regression analysis. The analysis shows that the relationships between variables are statistically significant.

In the second criteria, whether the model as a whole is significant is controlled. For this purpose, the goodness of fit (GOF) values is looked at (Table 2). The result of the analysis indicates that both the relationships between the variables and the model considered as a whole are statistically significant.

Model tests

Model 1: This model suggests that commitment affects both customer satisfaction and consumer brand loyalty. According to Model 1, commitment is an indicator of both consumer satisfaction and customer loyalty (Figure 1 and Table 3).
Model 2: This model suggests that consumer satisfaction affects commitment and that commitment affects consumer brand loyalty. Consumer satisfaction affects brand loyalty through commitment. It has been suggested that it has no direct affect on brand loyalty (Figure 2 and Table 4).
Model 3: This model suggests that consumer brand loyalty affects consumer satisfaction and commitment. According to the model, brand loyalty is considered as the premise of consumer satisfaction and commitment (Figure 3 and Table 5).
Model 4: This model suggests that commitment affects consumer satisfaction and that consumer satisfaction affects consumer brand loyalty. According to this model, commitment affects brand loyalty through customer satisfaction; there is no question of a direct effect on brand loyalty (Figure 4 and Table 6).
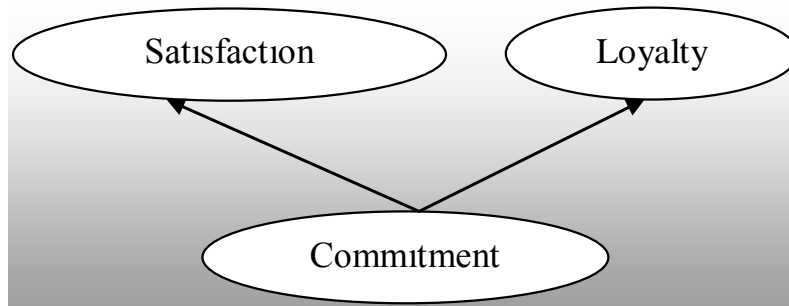
Figure 1. Model 1.

Table 3. Regression weights for model 1.

Non-standardized regression weights							Standardized regression weights			Estimate
			Estimate	SE	CR	P				Estimate
Loyalty	<---	Commitment	1.021	0.090	11.391	***	Loyalty	<--- Commitment		0.824
Satisfaction	<---	Commitment	0.801	0.075	10.643	***	Sat	<--- Commitment		0.692
Satisfaction1	<---	Satisfaction	1.000				Sat1	<--- Satisfaction		0.915
Satisfaction2	<---	Satisfaction	0.928	0.074	12.572	***	Sat2	<--- Satisfaction		0.784
Loyal1	<---	Loyalty	1.000				Loyal1	<--- Loyalty		0.822
Loyal2	<---	Loyalty	0.976	0.084	11.665	***	Loyal2	<--- Loyalty		0.732
Com6	<---	Commitment	1.000				Com6	<--- Commitment		0.731
Com5	<---	Commitment	1.286	0.093	13.839	***	Com5	<--- Commitment		0.816
Com4	<---	Commitment	1.301	0.094	13.868	***	Com4	<--- Commitment		0.817
Com3	<---	Commitment	1.192	0.097	12.349	***	Com3	<--- Commitment		0.731
Com2	<---	Commitment	1.127	0.092	12.302	***	Com2	<--- Commitment		0.728
Com1	<---	Commitment	1.160	0.093	12.407	***	Com1	<--- Commitment		0.734

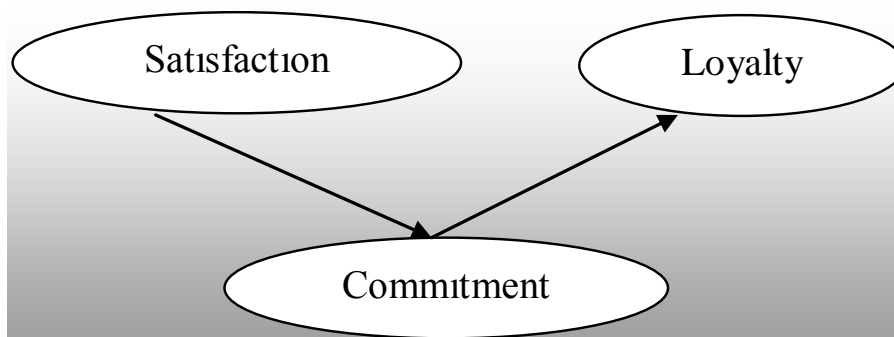*** Significant at p=0.001 level.

Figure 2. Model 2.

Model 5: This model suggests that consumer satisfaction effects both consumer brand loyalty and commitment. It has been suggested that commitment does not have a direct or an indirect effect on brand loyalty (Figure 5 and Table 7).

Model 6: This model suggests that consumer satisfaction and commitment together determine consumer brand loyalty (Figure 6 and Table 8).
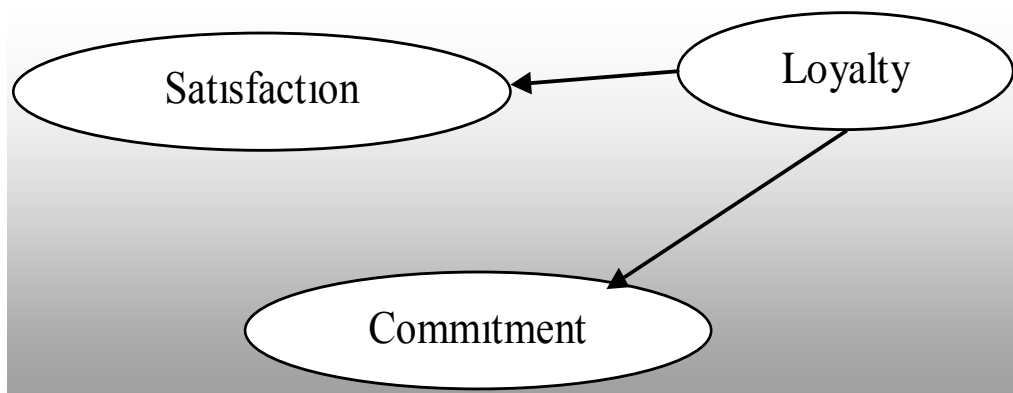
Comparison of the models

At this stage of the research, the statistical analysis values of the six models will be compared. Also, which of the models the observed variables support best will be identified. The comparison of the models was based on the criteria given in Table 9.

In examining GOF values, we can observe that among the

Table 4: Regression weights for Model 2.

Nonstandardized Regression Weights			Estimate	SE	CR	P	Standardized Regression Weights			Estimate
LOYALTY	<---	SATISFACTION	0.598	0.063	9.517	***	COMMIT MENT	<---	SATISFACTION	0.692
LOYALTY	<---	COMMITMENT	1.021	0.090	11.391	***	LOYALTY	<---	COMMITMENT	0.824
SAT1	<---	SATISFACTION	1.000				SAT1	<---	SATISFACTION	0.915
SAT2	<---	SATISFACTION	0.928	0.074	12.572	***	SAT2	<---	SATISFACTION	0.784
LOYAL1	<---	LOYALTY	1.000				LOYAL1	<---	LOYALTY	0.822
LOYAL2	<---	LOYALTY	0.976	0.084	11.665	***	LOYAL2	<---	LOYALTY	0.732
COM6	<---	COMMITMENT	1.000				COM6	<---	COMMITMENT	0.731
COM5	<---	COMMITMENT	1.286	0.093	13.839	***	COM5	<---	COMMITMENT	0.816
COM4	<---	COMMITMENT	1.301	0.094	13.868	***	COM4	<---	COMMITMENT	0.817
COM3	<---	COMMITMENT	1.192	0.097	12.349	***	COM3	<---	COMMITMENT	0.731
COM2	<---	COMMITMENT	1.127	0.092	12.302	***	COM2	<---	COMMITMENT	0.728
COM1	<---	COMMITMENT	1.160	0.093	12.407	***	COM1	<---	COMMITMENT	0.734

*** Significant at p=0.001 level.

Figure 3. Model 3.

Table 5. Regression weights for model 3.

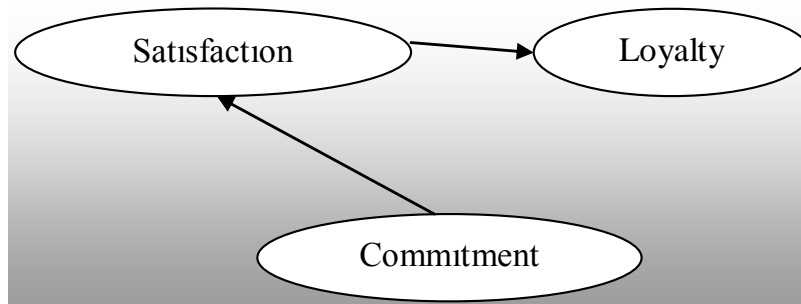| Non-standardized regression weights			Estimate	SE	CR	P	Standardized regression weights			Estimate
Satisfaction	<---	Loyalty	0.692	0.063	10.968	***	Satisfaction	<---	Loyalty	0.735
Commitment	<---	Loyalty	0.708	0.066	10.788	***	Commit ment	<---	Loyalty	0.860
Sat1	<---	Satisfaction	1.000				Sat1	<---	Satisfaction	0.896
Sat2	<---	Satisfaction	0.968	0.075	12.846	***	Sat2	<---	Satisfaction	0.801
Loyal1	<---	Loyalty	1.000				Loyal1	<---	Loyalty	0.797
Loyal2	<---	Loyalty	0.964	0.082	11.765	***	Loyal2	<---	Loyalty	0.702
Com6	<---	Commitment	1.000				Com6	<---	Commitment	0.724
Com5	<---	Commitment	1.290	0.095	13.548	***	Com5	<---	Commitment	0.810
Com4	<---	Commitment	1.318	0.096	13.727	***	Com4	<---	Commitment	0.821
Com3	<---	Commitment	1.215	0.099	12.326	***	Com3	<---	Commitment	0.738
Com2	<---	Commitment	1.149	0.094	12.287	***	Com2	<---	Commitment	0.736
Com1	<---	Commitment	1.180	0.095	12.357	***	Com1	<---	Commitment	0.740

*** Significant at p=0.001 level.

Figure 4. Model 4.

Table 6. Regression Weights for Model 4.

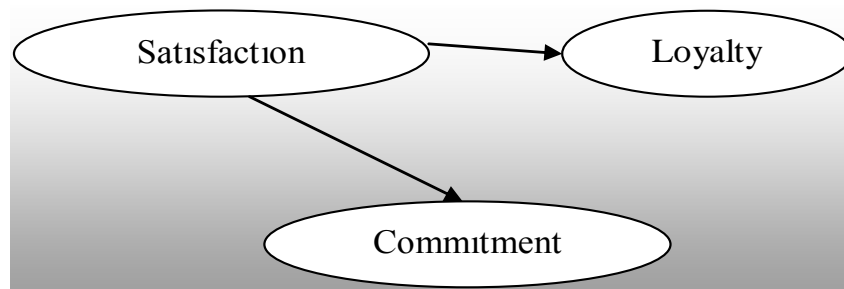|			Non-standardized regression weights				Standardized regression weights			
			Estimate	SE	CR	P				Estimate
Satisfaction	<---	Commitment	0.825	0.075	10.986	***	Satisfaction	<---	Commitment	0.766
Loyalty	<---	Satisfaction	0.933	0.080	11.609	***	Loyalty	<---	Satisfaction	0.766
Sat1	<---	Satisfaction	1.000				Sat1	<---	Satisfaction	0.848
Sat2	<---	Satisfaction	0.997	0.072	13.916	***	Sat2	<---	Satisfaction	0.781
Loyal1	<---	Loyalty	1.000				Loyal1	<---	Loyalty	0.865
Loyal2	<---	Loyalty	0.880	0.086	10.243	***	Loyal2	<---	Loyalty	0.695
Com6	<---	Commitment	1.000				Com6	<---	Commitment	0.728
Com5	<---	Commitment	1.293	0.094	13.700	***	Com5	<---	Commitment	0.817
Com4	<---	Commitment	1.314	0.095	13.795	***	Com4	<---	Commitment	0.823
Com3	<---	Commitment	1.201	0.098	12.276	***	Com3	<---	Commitment	0.733
Com2	<---	Commitment	1.133	0.093	12.203	***	Com2	<---	Commitment	0.729
Com1	<---	Commitment	1.167	0.095	12.315	***	Com1	<---	Commitment	0.735

*** Significant at p=0.001 level.

Figure 5. Model 5.

models suggested regarding the relationship between consumer satisfaction, commitment and brand loyalty, only the chi-square/SD value of Model 6 indicated that it is not a good model. The chi-square/SD value of Model 6 has an acceptable value. All chi-square analysis is significant at p=0.000. In conclusion, it can be stated that all models are acceptable and that Model 1 and 5 are models that have acceptable levels.

In terms of RMR value, Models 1, 2 and 3 indicate to be a good model while the remaining has values that are beyond the acceptable level. Even though the RMR values of Models 1, 2 and 3 are close to each other, the lowest value was provided by Model 3. A similar tendency is seen in the goodness-of-fit index,
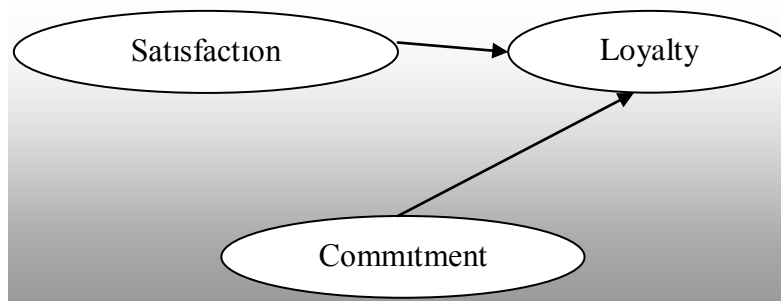
Adjusted Goodness-of-Fit Index, Tucker-Lewis index (TLI) and root mean square error of approximation (RMSEA**)** goodness of fit values. In examining GFI and AGFI, all models excluding Model 6 are at an acceptable level. However, the best value is provided by Model 3. In considering the TLI value, it can be observed that Model 3 is the second best model with a small difference. In examining RMSEA, it can be observed that Models 1, 2 and 3 have the same values, while the remaining models have not received RMSEA values within acceptable limits.

When asynchronous index cleanup (AIC) and expected cross-validation (ECV) indexes that are used to compare more than one model are examined, we can observe that Models 1, 2 and 3

Table 7. Regression weights for model 5.

Non-standardized regression weights							Standardized regression weights			
			Estimate	SE	CR	P				Estimate
Loyalty	<---	Satisfaction	0.933	0.075	10.986	***	Satisfaction	<---	Commitment	0.766
Commitment	<---	Satisfaction	0.711	0.080	11.609	***	Loyalty	<---	Satisfaction	0.766
Sat1	<---	Satisfaction	1.000				Sat1	<---	Satisfaction	0.848
Sat2	<---	Satisfaction	0.997	0.072	13.916	***	Sat2	<---	Satisfaction	0.781
Loyal1	<---	Loyalty	1.000				Loyal1	<---	Loyalty	0.865
Loyal2	<---	Loyalty	0.880	0.086	10.243	***	Loyal2	<---	Loyalty	0.695
Com6	<---	Commitment	1.000				Com6	<---	Commitment	0.728
Com5	<---	Commitment	1.293	0.094	13.700	***	Com5	<---	Commitment	0.817
Com4	<---	Commitment	1.314	0.095	13.795	***	Com4	<---	Commitment	0.823
Com3	<---	Commitment	1.201	0.098	12.276	***	Com3	<---	Commitment	0.733
Com2	<---	Commitment	1.133	0.093	12.203	***	Com2	<---	Commitment	0.729
Com1	<---	Commitment	1.167	0.095	12.315	***	Com1	<---	Commitment	0.735

*** Significant at p=0.001 level.

Figure 6. Model 6.

Table 8. Regression weights for model 6.

Non-standardized regression weights							Standardized regression weights			
			Estimate	SE	CR	P				Estimate
Loyalty	<---	Satisfaction	0.345	0.068	5.094	***	Loyalty	<---	Satisfaction	0.317
Loyalty	<---	Commitment	0.836	0.086	9.749	***	Loyalty	<---	Commitment	0.718
Sat1	<---	Satisfaction	1.000				Sat1	<---	Satisfaction	0.821
Sat2	<---	Satisfaction	1.151	0.178	6.455	***	Sat2	<---	Satisfaction	0.873
Loyal1	<---	Loyalty	1.000				Loyal1	<---	Loyalty	0.801
Loyal2	<---	Loyalty	0.959	0.097	9.927	***	Loyal2	<---	Loyalty	0.690
Com6	<---	Commitment	1.000				Com6	<---	Commitment	0.710
Com5	<---	Commitment	1.296	0.100	12.920	***	Com5	<---	Commitment	0.798
Com4	<---	Commitment	1.349	0.101	13.306	***	Com4	<---	Commitment	0.823
Com3	<---	Commitment	1.258	0.103	12.163	***	Com3	<---	Commitment	0.749
Com2	<---	Commitment	1.189	0.098	12.122	***	Com2	<---	Commitment	0.746
Com1	<---	Commitment	1.215	0.100	12.128	***	Com1	<---	Commitment	0.746

*** Significant at p=0.001 level.

received values close to each other. While Model 3 was the best model for ECVI, Models 1 and 2 appear to be the best models for AIC.

DISCUSSION

This study, which is explanatory in terms of its

Table 9. Comparison criteria of models.

Goodness of fit values	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Chi-square	92.677	92.677	93.767	143.498	143.498	213.666
Degree of Freedom	33	33	33	33	33	33
Chi-square/SD	2.808	2.808	2.841	4.348	4.348	6.474
p	0.000	0.000	0.000	0.000	0.000	0.000
RMR	0.059	0.059	0.057	0.116	0.116	0.290
GFI	0.931	0.931	0.933	0.90	0.90	0.886
AGFI	0.885	0.885	0.888	0.833	0.833	0.810
TLI	0.950	0.950	0.949	0.907	0.907	0.848
RMSEA	0.078	0.078	0.078	0.106	0.106	0.135
AIC	136.677	136.677	137.767	187.498	187.498	257.666
ECVI	0.467	0.467	0.461	0.627	0.627	0.862

qualifications, examined the relationship between consumer satisfaction, commitment and loyalty during the internal control process of companies in order to identify a model that includes the best combination of compatible relationship with real life data. The SEM was used to identify the most compatible model among alternative models.

The models suggested were examined in two stages. During the first stage the relationship between the variables were examined. All the relationships were found to be statistically significant. During the second stage, the models were evaluated in general. The GOF values with real life data indicated that the most compatible models were Models 1, 2 and 3. Among these three models, Model 3 in general indicated better GOF values. However, the GOF values for all three models were very close to each other. In these situations, the model most appropriate for the literature should be selected. In other words, the model closest to the existing theoretical framework should be chosen. For this reason, since Model 1 is not compatible with the literature, it was excluded from the evaluation.

Model 2 suggests that customer satisfaction leads to commitment and that commitment leads to brand loyalty. Customer satisfaction indirectly affects brand loyalty through commitment. Model 3, on the other hand, suggests that brand loyalty leads to customer satisfaction and commitment. According to this model, brand loyalty is an independent variable.

Examining Model 2 and 3 together, it is concluded that Model 2 is more compatible to theory, in other words, that customer satisfaction affects commitment directly and brand loyalty indirectly and that commitment has a direct effect on brand loyalty. However, whether loyal consumers feel more satisfied or they are more committed should be questioned.

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