

# Investigating the Relationships between Customer Satisfaction, Behavioral Intentions, and Customer Loyalty of Electronic Household Products

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**Abstract**

This study seeks to explore the representative dimensions of customer satisfaction along with the interrelationship among satisfaction, intentions, and loyalty in electronic household industry. A two-rounds survey was conducted in this study among undergraduate student sample, and then a more representative formal sample from the general public using a questionnaire survey method. Measurement scale developed in this study was first calibrated by an iterated factor analysis with principal component analysis (PCA) using data from the student sample and then cross-validated by confirmatory factor analysis (CFA) using the formal sample data. The empirical results demonstrate that customer satisfaction is a higher-order construct, can be measured by product quality, price, perceived value, and customer service, and customer satisfaction has a positive impact and/relationship on behavioral intentions and customer loyalty. The results did not find any positive relationship between behavioral intentions and customer loyalty. Managers are recommended to formulate operations and marketing strategies by emphasizing factors influencing customer satisfaction to ensure positive behavioral intentions and customer loyalty. This study shows interrelationship between customer satisfaction, intentions, and loyalty in a manufacturing industry (electronic household) which is useful for academicians and managers. Similar industries may reveal similar relationship features in respect to these relationships constructs, if they are under similar category.

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**Keywords:** Customer satisfaction, Behavioral intentions, Customer loyalty, Principal component analysis, Confirmatory factor analysis

## Introduction

The use of electronic household appliances such as television, refrigerator, washing machine, fan, microwave oven, etc. in daily life is critical to making the performance of chores less stressful in many homes. Consumers derive satisfaction which in turn fosters positive behavioral intentions and ultimately create brand loyalty. The last decades have initiated a number of researches on customer loyalty. Customer loyalty can ensure the higher market position that leads to a higher market resulting in higher profitability (Homburg and Rudolph, 2001). As a result, corporate managers and academic scholars are making efforts to understand the perceptions of customers regarding customer satisfaction (Olorunniwo, Hsu and Udo, 2006). There is also concern how this satisfaction converts into behavioral intentions and customer loyalty. Consistent with these efforts, there is ongoing interest to understand the different constructs as customer satisfaction, behavioral intentions, and customer loyalty.

A brief review of the literature discloses that the concepts of customer satisfaction, behavioral intentions, and customer loyalty have appeared as strong influencing factors of customer retention. The concepts of satisfaction, behavioral intentions, and loyalty may be considered to refer to the same underlying portfolio. From a conceptual point of view, it is important to make distinction among them. The overall evaluation of a product or service by consumers of their purchase and consumption experiences is referred to satisfaction. The evaluation of product or service experience changes over time

(Eshghi, Haughton and Topi, 2007). The behavioral dimension is basically an expression of the psychological affective state, which is sometimes connected with customer retention and sharing of experiences (Gustafsson and Johnson, 2002). The intention or tendency to repurchase the product or service from the same company repeatedly is termed as loyalty. As such, an influencing component as well as a behavioral dimension positively influences loyalty (Eshghi et al., 2007). Thus, customer loyalty shows a psychological reaction and passion to the experience of a product or service.

Customer loyalty is the inertia to purchase the same brand (Oldin, Oldin and Valette-Florence, 2001), that is to say, repurchase of same brand being satisfied. How customers are being satisfied, how it determines customer loyalty and how this in turn directs to financial outcomes are also matters of significant attention (Brodie, Whittome and Brush, 2009). Strong brand sensitivity comes from behavioral intentions which are psychological factors of brand loyalty process. In a strong brand sensitivity condition, repeat purchasing behavior is considered brand loyalty. A customer who attaches great importance to brands in his choice and who likes to repurchase the same brand is the result of customer loyalty (Oldin et al., 2001). The construct of customer loyalty is of importance for product providing channels. Staying with the firm the loyal customers maintain a repeat business relationship for a long period of time. Satisfied and loyal customers who stay with a firm for a long

time tend to influence the profit level of the firm in several ways. Firstly, the repeat transactions generate revenues for the company. Secondly, transaction costs (advertising, promotion, start-up activities, etc.) economics can be ensured through the repetitive transaction with existing customers while new customers require a large amount of expenditure to start the business in initial level. Thirdly, loyal customers often share their experience and recommend the products or services to several others (Olorunniwo et al., 2006).

In this paper, attention is devoted to establishing a relationship between the elements of customer satisfaction, behavioral intentions and customer loyalty respectively. The interrelationship of customer satisfaction, behavioral intentions, and customer loyalty are introduced as new approach for research in the specific industry (e.g. electronic household items). The influences of customer satisfaction and behavioral intentions on customer/brand loyalty are also a matter of consideration. Two main questions presenting as a result of this study are: (1) what are the representative dimensions of customer satisfaction? (2) What is the interrelationship among satisfaction, intentions, and loyalty in electronic household industry? Following is the structure of this study. Firstly, the related literature is reviewed and the interrelationship among satisfaction, intentions, and loyalty is identified. Secondly, hypothesized model (as shown in Figure-1) and hypotheses of this paper are then presented. Thirdly, the method of the study based on questionnaire survey is described. Fourthly, analyses and major

findings of the study are discussed. Finally, discussion, theoretical and managerial implications, limitations of this study, and guidelines for further study are presented.

## **Theoretical Background and Hypotheses**

### **Customer satisfaction**

Satisfaction is the customer's feelings of fulfillment resulting from comparing a product or service's outcome in relation to the expectations of that customer or performance of product or service. According to Perreault, Jr. and McCarthy (2000) "customer satisfaction is the extent to which a firm fulfills a customer's needs, desires, and expectations". Satisfaction is the feelings of pleasure of a customer which comes from overall evaluation of purchase and consumption experiences (Eshghi et al., 2007) and it is assumed as an important determinant of positive experience sharing, repeat sales, and brand loyalty (Fornell, Johnson, Anderson, Cha, and Bryant, 1996). Focusing on buyers' needs strategic marketing policy creates a buyer-seller relationship, where buyers are not only buyers, also active partners. In this circumstance, to establish, develop, and maintain a customer relationship, customer satisfaction may play a crucial role. Homburg and Rudolph (2001) defined 'customer satisfaction' as a relationship-specific construct by describing how a supplier can meet a customer's needs focusing on product features, information, customer services, and complaint handling.

## Customer satisfaction dimensions

Customer satisfaction construct shows a multidimensional nature in several studies of marketing researchers. Product quality, price, construction, and performance are the attributes that affect the fitness of the product for the performance and for the consumer (McWilliams and Gerstner, 2006; Stone-Romero, Stone and Grewal, 1997; Wouters, 2004). Costs, quality, service quality of sales people, experiences of consumption, and distribution process of products are typically considered by some scholars (Kim and Lee, 2010; Nilsson, Johnson, and Gustafsson, 2001; Ralston, 2003). Thus, the multidimensional approach of customer satisfaction requires further justification for conceptualization. Some of the aspects of customer satisfaction are relevant for studying satisfaction in an electronic household product industry. Specifically, in this paper product quality, price, perceived value, and customer service are considered the representative dimensions of customer satisfaction.

### *Product quality*

Considerable research work has been conducted by consumer behavior researchers to determine factors that influence the consumers' views of product quality. Perceived product quality has positive influence on customer satisfaction, which is a psychological matter. Four major dimensions namely flawlessness, durability, appearance and distinctiveness are the representative dimensions of perceived product quality. The first three are intrinsic and the last one is extrinsic (Stone-Romero et al., 1997). Both conceptual and operational

definition of product quality is changing. Multi-dimensional perspective of product quality will lead to several positive results such as understanding the psychological view of consumers and estimating the satisfaction level. Brechan (2006) distinguishes product attributes as primary (core) and secondary (non-core). Primary attributes have greater impact on customer satisfaction than secondary attributes. Based on thorough business evaluation and trade-off studies customer satisfaction levels are established (Yadav and Goel, 2008) whereas through customer orientation of a firm, for product firms, internal quality practices persuade customer satisfaction and performances of the business (Nilsson et al., 2001). Quality information also is important and has significant impact on customer satisfaction and buying behavior of customers.

### *Price*

Price remains a vital element of the marketing mix, though the non-price factors also play an important role in marketing with regards to customer satisfaction. From the economic point of view, consumers are 'price takers' and accept prices at 'face value' or as given (Kotler and Keller, 2009). Consumers actively process price information, based on their existing knowledge from buying experiences, formal and informal communications, and eventually interpret prices to take purchase decisions. Sometimes low prices below the threshold level give signals of inferiority or lower quality, but an addition of low prices guarantees to a money back guarantees scheme, can help recover economic

efficiency as both seller loss (cost of handling of return, restocking costs, stock depreciation loss) and customer hassle costs (cost of returning, repurchasing of same product) from undue returns are declined (McWilliams and Gerstner, 2006). Price satisfaction (some factors such as price level, price fairness, price value, price perceptibility, price advertising, special offer, promotion, etc.) influences customer satisfaction as the antecedents. By particular experiences and with the price perception different dimensions emotional processes are created and activated (Zielke, 2008). The significant dimension of customer satisfaction and customer retention is responsiveness which is ensured through representative low prices. Purchase intentions, complaining behavior, positive information sharing are the consequences of customer satisfaction that ultimately foster positive behavioral intentions and customer loyalty (Hidalgo, Manzur, Olavarrieta and Farías, 2008; Kim and Lee, 2010).

### *Perceived value*

Value is a consumer's overall perception of the subjective merit of some activity or object regarding product utility considering all benefits and costs of consumption (Chen and Tsai, 2008; Lai, Griffin and Babin, 2009). Customer perceived value is simply the difference between the total customer value (bundle of product, service, personnel and image value) and total customer costs (bundle of monetary, time, energy, and psychic costs) (Kotler and Keller, 2009). Customers estimate the expected perceived value and whether or not company's offer meets the expectations affect the customer

satisfaction and behavioral intentions for repurchase. Customer value is affected by some factors such as competencies, communication, promotional investments, relational investments; innovation, total quality management, etc. have implications to trade-off between external strategic focus and internal quality management toward customer focus, competitive advantages by gathering customer value related information to improve customer value (Spiteri and Dion, 2004). In service and product providing company, perceived value is an immediate factor in the prediction of customer satisfaction, though most of the studies argued about quality aspect (Hutchinson, Lai and Wang, 2009). Expectations and perceived performance are the predictors of perceived value and the association of perceived value on customer overall satisfaction has been supported by many investigative studies (Chen, 2008; Chen and Tsai, 2008; Wu and Liang, 2009). Therefore, it is evident that customers perceive value from money sacrifices and other related costs as positively related with customer satisfaction.

### *Customer service*

Customer service deals with how to provide information, place, time utility and after-sale service to improve value to the customer (Perreault, Jr. and McCarthy (2000). It includes pre- and post-sales service activities. Customer service is concerned with physical distribution performance and focuses on smoothly product handling, storing, transpiration regarding quality of delivery, delivery reliability, availability to deliver the expected service at the lowest cost.

Secondly, it considers a firm's commercial flexibility and communication skills (Wouters, 2004). Perceived customer satisfaction and fairness positively influence business performance and are dependent on the customer service quality as well as the dealings concerned with generating the outcomes (Gomez, McLaughlin and Wittink, 2004; Ralston, 2003). A service providing organization such as housing company also should be concerned about the determinants of maintenance service quality which constitutes customer satisfaction in its service specifications (Mossel and Valk, 2008). Turpin (1995) in his study identified seven golden rules for ensuring customer satisfaction most of them are customer service related. The rules were designing corporate mission in terms of customer benefits, gaining long-term commitment, selection of personnel, training, setting quality standards, using technology, and exceeding customer expectations. Consequently, the following hypothesis is proposed:

**H1:** Customer satisfaction is defined as a higher-order construct which represents (a) product quality, (b) price, (c) perceived value, and (d) customer service.

### Behavioral intentions

Behavioral intentions can be expressed as measures of comparing behavior, price sensitivity, repurchase and sharing of information. Customer satisfaction guides favorable behavioral intentions and customer dissatisfaction leads to unfavorable behavioral intentions (Olorunniwo et al., 2006). Behavioral intentions are seen as post-purchase as extent of satisfaction and post-purchase

action. Post-purchase experiences of product or service affect the behavioral intentions of customers. Customers show high tendency of repurchasing the product, if they are satisfied. Customers may return the product if they are dissatisfied. They may complain to the company, or take legal action against the company, or decide to stop buying the product and warn other people (Kotler and Keller, 2009). So, it is important to get favorable behavioral intentions from customer and for this reason companies should truthfully represent the product's likely performance.

### Customer loyalty

Generally, loyalty is the commitment to re-patronize or repurchase a preferred product or service (Kotler and Keller, 2009). When any individual purchases same brand systematically it said that he or she is loyal to this brand. Facing higher competition in the market, firms are moving from a product-and-sales concept to a marketing concept. To connect with customers and strengthen customer relationships, companies are establishing a well-conceived marketing philosophy by creating customer value, satisfaction and loyalty. Thus, customer loyalty represents the attitude of repurchase from same company (Eshgh et al., 2007). Loyalty includes a sentimental element as well as relative attitude. As a sentimental issue loyalty represents a psychological reaction and passion to a service or product usage and equates with customer retention (Gustafsson and Johnson, 2002). Loyalty is a function of biased psychological processes with respect to one or more available alternative brands that is expressed over time by an individual or a



group to repurchase such brands (Odin et al., 2001). Therefore, customer or brand loyalty is considered to be the effectiveness of the relationship between repurchase intentions and relative attitude of a customer.

### Relationship between customer satisfaction and behavioral intentions

Behavioral intentions frequently represent customer's desires. When it is favorable it represents repeat patronage, when it is unfavorable it represents avoidance. Prior expectation and perceived performance after consumption represent the extent of customer satisfaction. Customer-centric marketing philosophy focuses on total customer satisfaction which, in turn, fosters positive behavioral intentions of customers (Kotler and Keller, 2009). The significance of behavioral economics to customers' product and brand choices is demonstrated by consumer behavior analysis. Consumer behavior analysis expresses the role of informational and functional support, customers' responses to consumption opportunities that are shaped by current behavior, and the incorporation of situational variables into psychological models (Foxall, 2007). Customers' psychology as well as behavioral intentions is significantly affected by satisfaction level, which is the representation of product quality, perceived value and so on. Satisfaction performs an arbitration role in the relationship between behavioral intentions and each dimension of satisfaction (Chen and Chen, 2010; Lee, Yoon and Lee, 2007). In 2000, McDougall and Levesque found significant effects

among value, customer satisfaction, and future intentions across four service industries. There is a direct impact in the relationship between recovery efforts and behavioral intentions, while recovery efforts are represented by perceived justice. When service failure occurs, recovery efforts represented by perceived justice can change the intentions of customers towards a positive attitude (Ha and Jang, 2009). Finally, radical behaviorism, teleological behaviorism, and picoeconomics are the three theories that are particularly related with the rationalization of consumer economic behavior under consumer behavior analysis. In spite of the differences among these theories, they provide the understanding of consumer choice and description of everyday consumer behavior (Foxall, 2007). Thus, I propose the hypothesis H2 as follows:

**H2:** There is a positive relationship between customer satisfaction and customer behavioral intentions.

### Relationship between customer satisfaction and customer loyalty

As a result of intense competition and slow growth in the household and customer products market, customer satisfaction and customer loyalty are being viewed gradually as vital factors worthy of consideration. The presence of super chains such as Trustmart and Walmart, intensifies the competition and retailers are more conscious of customer satisfaction and loyalty in order to stay in the business (Juhl, Kristensen and Ostergaard, 2002). Generally, satisfied customers become loyal to particular

brand or product (Kuo, Wu and Deng, 2009). Chen and Chen (2010) categorised customer loyalty into four stages namely cognitive loyalty, affective loyalty, conative loyalty and action loyalty. Most of the cases, researchers focus on cognitive and affective loyalty because it is difficult to measure action loyalty. Customer loyalty is measured by the experiences of a consumer after a product or service has been consumed, while experiences are represented by feelings or attitudes of that consumer, and it could also be influenced by degree of satisfaction and emotion (Vesel and Zabkar, 2009). Thus, loyalty is greatly influenced by satisfaction which is why satisfaction is considered an antecedent of loyalty. Satisfied clients have a tendency to be loyal, but loyal clients are not always satisfied clients. Customers develop a positive attitude towards the service centers, when they are satisfied (Chang and Chen, 2008). Highly satisfied customers are said to be highly loyal - that is the positive impact of satisfaction. On the other hand, negative impact of satisfaction is switching intentions (Den, Lu, Wei and Zhang, 2010). Therefore, retention of existing customer and strengthening the customer relationship is very crucial for both products and services providing companies. Therefore, the following hypothesis is proposed.

**H3:** There is a positive relationship between extent of customer satisfaction and extent of customer loyalty.

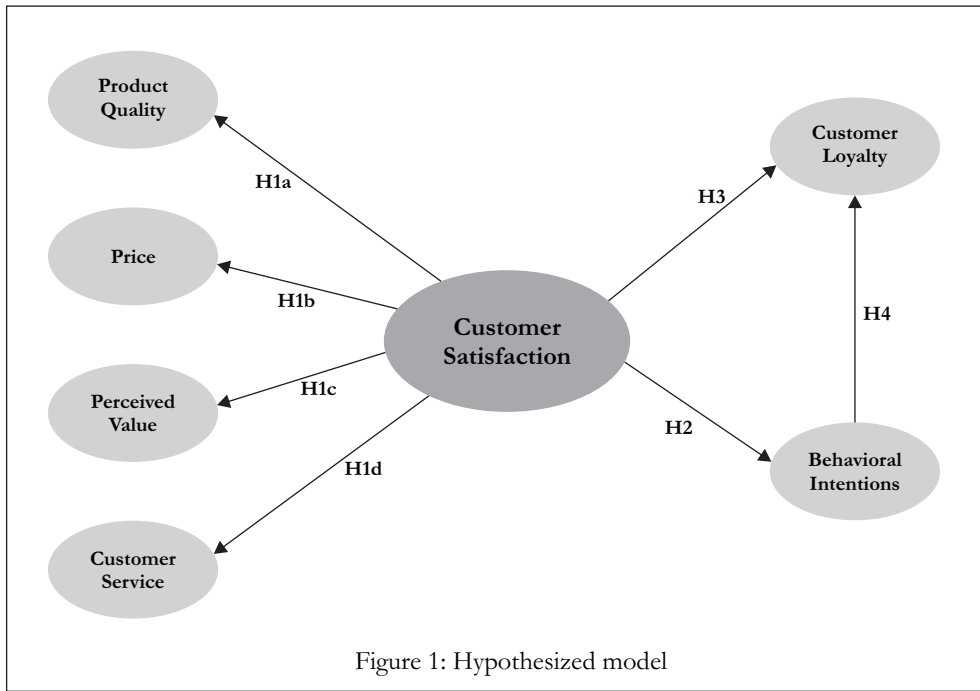
#### Relationship between behavioral intentions and customer loyalty

It is generally recognized that customer

loyalty is dependent on extent of satisfaction. Customer loyalty is not merely dependent on customer satisfaction. Behavioral intentions may also play a mediating role between satisfaction and loyalty. Behavioral intentions including word-of-mouth, price sensitivity and repeat purchasing has an influence on a customer's loyalty for a particular brand (Bloemer, Odekerken-Schroder and Kestens, 2003). Behavioral intentions are influenced by relational benefits such as social benefits, confidence benefits, and special treatment benefits, whereas behavioral intentions influence extent of customer loyalty (Chen and Hu, 2010). Satisfied customers have positive attitudes and behavioral intentions towards the particular product or service. Positive attitudes create a commitment and share of purchase: there is less chance to switch to competitors due to a minor price increase. They continue the relationship and make positive word-of-mouth advertising. Ultimately, they tend to be loyal (Kim and Cha, 2002). On the other hand, a dissatisfied customer may not complain but may silently switch and create negative word-of-mouth or may complain, but not switch to other competitors (Deng et al., 2010). Again, when customers believe that they can get better quality, value or service elsewhere, they may switch even if they are satisfied with the present consumption (Vesel and Zabkar, 2009). Formally, this to hypothesis 4:

**H4:** There is a positive relationship between behavioral intentions and extent of customer loyalty.





## Research Methodology

### Survey instrument

A questionnaire survey method was used to collect data for testing the hypotheses in this study. A two-rounds survey was conducted under this research endeavor most of which measurement items were from existing literature. Some items were directly adopted from previous survey instruments to operationalize the constructs in this study. Few new items were also included in different constructs to get good response from data collection through survey. All constructs were measured using multiple items by a seven point Likert-type scale (1 $\geq$  strongly disagree, 2 $\geq$  disagree, 3 $\geq$  moderately disagree, 4 $\geq$  neutral, 5 $\geq$  moderately agree,

6 $\geq$  agree, and 7 $\geq$  strongly agree). First round tests was conducted with 131 responses from undergraduate level students of school of business in Comilla University, Bangladesh in July 2010. 71 percent were male and 29 per cent were female students. They were asked to fill the questionnaire as real consumers and to provide comments of the wording of the measurement items. Table-1 presents the summary of descriptive statistics of the first round of the survey.

### Sample

In the second stage, the formal survey was conducted based on the preliminary survey. Following suggestions from the preliminary survey one item that belongs to the 'customer loyalty' construct was

Table 1: Summary statistics of preliminary survey

Constructs	No. of items	Mean	Standard Deviation	Cronbach alpha ( $\alpha$ )
Product quality	5	5.966	1.061	0.908
Price	4	5.681	1.084	0.864
Perceived value	3	4.641	1.257	0.935
Customer service	4	5.204	1.456	0.953
Behavioral intentions	4	5.885	1.121	0.881
Customer loyalty	5	5.202	1.155	0.848

Table 2: Summary statistics of formal survey

Constructs	No. of items	Mean	Standard Deviation	Sources of scale
Product quality	5	6.002	1.010	Stone-Romero et al., 1997
Price	4	5.595	1.058	Kim and Lee, 2010; Zielke, 2008
Perceived value	3	4.781	1.210	Chen and Tsai, 2008; Hutchinson et al., 2009; Lai et al., 2009
Customer service	4	5.097	1.489	Mossel and Valk, 2008; Turpin, 1995; Wouters, 2004
Behavioral intentions	4	5.935	1.000	Olorunniwo et al., 2006; Olorunniwo and Hsu, 2006; new
Customer loyalty	4	4.978	1.396	Olorunniwo and Hsu, 2006; new

removed from the questionnaire. A total of 300 questionnaires were sent to general consumers on random basis in July 2011, in Bangladesh. 264 responses were received, of which 251 were complete and usable (a response rate of 88 per cent, whereas, effective response rate is 95 per cent). Sixty-nine per cent (69%) respondents were men. Sixteen per cent respondents were up to thirty years, 41 percent was thirty-one to forty years, 29 percent was forty-one to fifty years and 14 per cent was above fifty years old. 51 per cent respondents was involved in government service, 15 per cent was in private service, five per cent were in business, 24 per cent were housewives, and five per cent was in other professions.

34 per cent respondents completed up to college level education, 33 per cent completed graduation, 31 per cent completed post-graduation, and others were two per cent. The frequency distribution for monthly income was as follows: 56 per cent up to taka 20,000 (Taka is the Bangladeshi currency unit), 26 per cent between taka 20,001 and taka 30,000, 13 per cent between taka 30,001 and taka 40,000, 4 per cent between taka 40,001 and 50,000, and one percent above taka 50,000. The summary statistics of formal survey are shown in Table 2. In order to control common method biases, respondents were assured that there was no right or wrong answers and they should provide answer as honestly as possible and

no information will be shared with other person or organization. It has been also assured the respondents' identity will not be disclosed, and the information of this survey will be used for academic purposes only.

## Analyses and Results

A two-stage approach was used to analyze the latent constructs of overall customer satisfaction, behavioral intentions, and customer loyalty relationships.

Approaches were the measurement model or CFA model and structural model using structural equation modeling software (AMOS 17.0). The measurement model provides reliability and validity of the constructs which comprises convergent and discriminant validity.

The confirmatory factor analysis (CFA) was engaged for validity analysis and the structural model, based on path analysis method, was conducted to test hypotheses of this study. Before that, an iterated factor analysis with principal component analysis (PCA) with a Varimax rotation was conducted on formal sample to understand underlying relationship of factors and data reduction purpose. As a conservative heuristic, a cut-off point of 0.50 (suppress absolute value less than 0.50) was imposed in factor analysis. I restricted the number of factors to six as the theoretical background of this study has a total of six underlying endogenous factors. Table 3 shows the rotated factor loadings and their respective eigenvalue and cronbach alpha values. It is notable that all calculated alpha values are above the widely recognized rule of thumb of 0.70 (Nunnally, 1978), which expresses a good internal consistency among items

within each construct.

## Measurement model

To have a more rigorous interpretation of relationships of satisfaction, behavioral intentions, and loyalty than is provided by the principal component analysis (PCA), confirmatory factor analysis (CFA) was conducted on data responses of the formal sample ( $n \geq 251$ ). Since a model is a theoretical representation, the proposed measurement model was specified before data collection expecting the model should be confirmed with sampled data. Based on the existing literature and empirical support, the specified measurement model involved identifying and determining the relationships of variables within the model. To evaluate the goodness-of-fit of the model several measures of indices are used as suggested by Iacobucci (2010), Schumacker (1992): Chi-square/degrees of freedom ( $\chi^2/df$ ) ratio, root mean-square error of approximation (RMSEA), goodness of fit index (GFI), normed fit index (NFI), comparative fit index (CFI), incremental fit index (IFI). To analyze the measurement model maximum likelihood estimation was used. To evaluate the overall measurement model fit, the goodness-of-fit measures were used. As Table-4 shows  $\chi^2/df = 1.867$ , RMSEA = 0.059,  $GFI \geq 0.882$ ,  $NFI \geq 0.917$ ,  $CFI \geq 0.959$ , and  $IFI \geq 0.960$ . Except for GFI value other measures fulfill the suggested values. Therefore, CFA model can be said to be a well-fit model. After achieving the well-fit indices, the measurement model was further assessed for reliability and validity.

**Table 3: Result of factor analysis**

No.	Product quality	Price	Perceived value	Customer service	Behavioral intentions	Customer loyalty
Pq1	0.837					
Pq2	0.850					
Pq3	0.805					
Pq4	0.769					
Pq5	0.769					
Pr1		0.771				
Pr2		0.755				
Pr3		0.856				
Pr4		0.827				
Pv1			0.875			
Pv2			0.870			
Pv3			0.854			
Cs1				0.899		
Cs2				0.904		
Cs3				0.883		
Cs4				0.854		
Bi1					0.848	
Bi2					0.774	
Bi3					0.770	
Bi4					0.749	
Cl1						0.585
Cl2						0.740
Cl3						0.743
Cl5						0.621
Eigenvalue	8.860	3.517	2.120	2.014	1.434	0.831
Cumulative percentage of explained variance	36.917	51.571	60.362	68.753	74.729	78.192
Cronbach alpha	0.889	0.850	0.922	0.955	0.840	0.926

**Table 4: Goodness of fit statistics for measurement model and structural model**

	Suggested values	Measurement model values	Structural model values
<b>Absolute measures</b>			
$\chi^2/df$	<3	1.867	1.714
RMSEA	<0.06	0.059	0.053
GFI	>0.90	0.882	0.901
<b>Incremental fit measures</b>			
NFI	>0.90	0.917	0.924
CFI	>0.90	0.959	0.967
IFI	>0.90	0.960	0.967

Item reliability and construct reliability are the two levels of reliability analysis. The amount of variance in an item because of underlying construct is indicated by item reliability. Standardized loading greater than 0.70 demonstrate item reliability, but standardized loadings  $\geq 0.50$  are also acceptable (Chin, 1998; Hair, Anderson, Tatham and Black, 1998). For construct reliability, value  $\geq 0.70$  is required that

intends to the degree to which an observed variable reveals an underlying factor. Table 5 presents the item reliability and construct reliability results. Standardized loadings ranged from 0.660 to 0.972 indicate good item reliability. All values of construct reliability were above the threshold value (i.e. 0.70) indicating high-level of reliability for all the constructs.

**Table 5: Measurement model results**

Constructs and variables	Standardized loadings	T-statistics	Construct reliability (CR)	Average variance extracted (AVE)
<b>Product quality</b>				
Pq1	0.892	17.459**	0.90	0.65
Pq2	0.906	17.868**		
Pq3	0.717	12.780**		
Pq4	0.803	12.355**		
Pq5	0.693	12.114**		
<b>Price</b>				
Pr1	0.824	9.490**	0.87	0.63
Pr2	0.972	11.944**		
Pr3	0.676	9.295**		
Pr4	0.660	8.278**		
<b>Perceived value</b>				
Pv1	0.890	17.670**	0.92	0.81
Pv2	0.946	19.541**		
Pv3	0.847	16.360**		
<b>Customer service</b>				
Cs1	0.926	19.226**	0.96	0.84
Cs2	0.946	19.977**		
Cs3	0.926	19.214**		
Cs4	0.871	17.311**		
<b>Behavioral intentions</b>				
Bi1	0.859	15.903**	0.86	0.61
Bi2	0.882	16.379**		
Bi3	0.670	11.374**		
Bi4	0.699	11.231**		
<b>Customer loyalty</b>				
Cl1	0.830	15.435**	0.93	0.77
Cl2	0.849	16.457**		
Cl3	0.945	19.672**		
Cl5	0.881	17.544**		

After being assured that a scale instrument provides necessary levels of reliability, this study stepped to scale validity. Convergent validity and discriminant validity were tested under construct validity in this study. The degree to which dimensional measures of the same concept are correlated is assessed by convergent validity. To assess convergent validity average variance extracted (AVE) is used (Fornell and Larcker, 1981; Hair et al., 1998). Representation of latent constructs by items is truly denoted as high as the average variance extracted is higher. For latent construct the average variance extracted (AVE) should be more than 0.50 (Hair et al., 1998). Table-5 shows the average variance extracted (AVE) values for constructs ranged from 0.61 to 0.84 exceeded the threshold value 0.50, supportive evidence for convergent validity. Moreover, in a CFA setting, t-statistics related to factor loadings is assessed to measure convergent validity (Rao and Troshani, 2007). All items offer

good measures to their respective latent construct because of all t-statistics (\*\*Indicates significance at  $p < 0.01$  level) values are statistically significant at 0.01 level and confirmed convergent validity of the constructs.

Discriminant validity measures degree to which indicators of constructs are discrete. If different constructs provide low correlation coefficient with each other, it represents measures of discriminant validity theoretically. Average variance extracted (AVE) is used to assess discriminant validity (Fornell and Larcker, 1981). The rule of thumb is that the average variance extracted (AVE) values should be greater than corresponding squared inter-construct correlation estimates (SIC) in the model. Table 6 shows the average variance extracted (AVE) estimates in the diagonal values (\* marked) and corresponding squared inter-construct correlation estimates (SIC) values, supportive evidence for discriminant validity. For example, average

**Table 6: Squared correlations between constructs**

	Product quality	Price	Perceived value	Customer service	Behavioral intentions	Customer loyalty
Product quality	<b>0.65*</b>					
Price	0.12	<b>0.63*</b>				
Perceived value	0.09	0.12	<b>0.81*</b>			
Customer service	0.04	0.06	0.21	<b>0.84*</b>		
Behavioral intentions	0.20	0.09	0.07	0.17	<b>0.61*</b>	
Customer loyalty	0.07	0.10	0.34	0.58	0.18	<b>0.77*</b>



variance extracted (AVE) estimate for perceived value was 0.81 and corresponding squared inter-construct correlation estimates (SIC) values were 0.21, 0.07, and 0.34 for customer service, behavioral intentions, and customer loyalty respectively, an indication of discriminant validity.

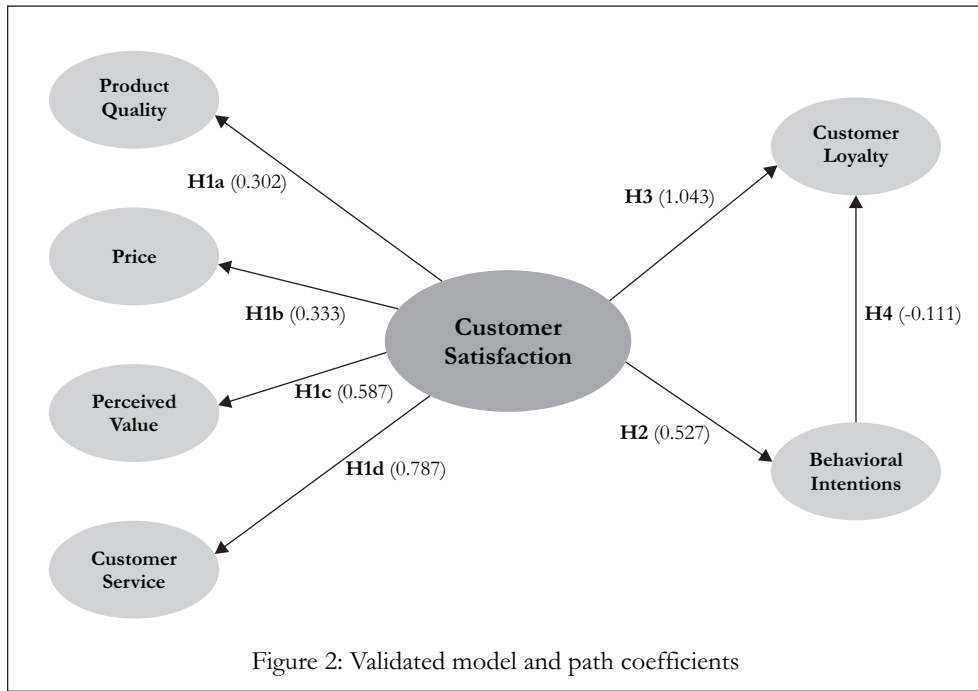
### Structural model

The overall model fit of the structural model of this study was assessed using multiple fit indices after achieving a satisfactory goodness of fit in the measurement model. Table 4 shows the goodness-of-fit indices of hypothesized structural model. As shown in the Table 4  $\chi^2/df = 1.714$ , RMSEA = 0.053, GFI = 0.901, NFI = 0.924, CFI = 0.967, and IFI = 0.967. Goodness-of-fit statistics indicated that structural model also behaved like a measurement model. However, the structural model can be regarded as very good fit, considering all very favorable good fit measures.

Table 7 depicts the empirical results of structural model by path analysis. The path coefficients along with hypotheses are visualized in Figure 2, where hypotheses were drawn in the solid lines. The empirical results support all hypotheses at  $p < 0.01$  level (i.e., H1a, H1b, H1c, H1d, H2, and H3; H4 could not be supported by empirical results) except one hypothesis. The empirical results did not find any positive relationship between behavioral intentions and customer loyalty. The standardized coefficients from customer satisfaction to behavioral intentions and customer satisfaction to customer loyalty are 0.527 and 1.043 respectively. Though these two paths are statistically significant (\*\*indicates significance at  $p < 0.01$  level), the effect of customer satisfaction to customer loyalty appears to be stronger when compared to the effect of customer satisfaction to behavioral intentions in the electronic household products industry.

**Table 7: Path analysis of structural model**

Casual path	Hypotheses	Path coefficient	T-statistics	Results
Customer satisfaction → behavioral intentions	H2	0.527**	5.699	Supported
Customer satisfaction → customer loyalty	H3	1.043**	7.569	Supported
Behavioral intentions → customer loyalty	H4	-0.111	-1.214	Not Supported



## Discussion And Implications

This paper identifies the dimensions of customer satisfaction (product quality, price, perceived value, and customer service) and investigates the relationships among customer satisfaction, behavioral intentions and customer loyalty. Measurement scale developed in this study was firstly calibrated using the data from student sample and then cross-validated using a more diversified data set (formal sample) collected by a questionnaire survey in Bangladesh. The results demonstrate that customer satisfaction is a higher-order construct, can be measured by product quality, price, perceived value and customer service and that customer satisfaction has a positive impact and relationship on behavioral

intentions and customer loyalty. This study contributes to academic literature on consumer behavior in terms of theory development and managerial implications especially in the electronic household product industry in a developing country like Bangladesh.

The first result extends existing researches of factors affecting customer satisfaction as product quality based composition stated by Nilsson et al. (2001), low price based structure provided by McWilliams and Gerstner (2006), quality-value-image based structure proposed by Lai et al. (2009), and maintenance service quality based proposition proposed by Mossel and Valk, (2008). It is important to note that most of

the previous studies emphasized product quality and perceived values as the motivating factors of customer satisfaction, whereas, this study provides equal importance to price and customer service. When companies provide lower prices ensuring same level of quality they may get competitive advantages as the consequence of customer satisfaction (Kim and Lee, 2010). Price satisfaction related with customer satisfaction is a psychological reaction of customer, resulting from the dealings of cognitive and emotional processes. On the other hand, perceived customer satisfaction and fairness positively influence business performance and are dependent on the customer service quality as well as the dealings concerned to generate the outcomes (Gomez et al., 2004; Ralston, 2003).

This result also offers implications for electronic household product manufacturing industry in Bangladesh. In order to successfully operate the business managers should take four constructs under consideration to assess customer satisfaction as well as customer loyalty. Managers should know what customers want and how they become satisfied. From a managerial perspective, product quality, and perceived value is an important influencing factor on customer satisfaction. Firms should understand the importance of quality assurance and value of the product to customers. Perceived value is influenced by price and customer services. At the same time, they have positive direct influence on customer satisfaction. Thus, the positive effect of quality, low price, perceived value and easy customer service makes customers

satisfied. Managers should ensure product quality, competitive price, increased perceived value of customers, and easy and available customer services.

The second result of this study is about the relationships leading to customer satisfaction, behavioral intentions, and customer loyalty. The empirical result shows that there is a positive relationship between customer satisfaction and behavioral intentions; and customer satisfaction and customer loyalty. There is no significant relationship between behavioral intentions and customer loyalty. This shows the customer satisfaction is the predictor of customer loyalty and behavioral intentions and it is consistent with the findings of Chen and Chen (2010), and Lee et al. (2007). The positive relationship between customer satisfaction and behavioral intentions may be due to significant effect of satisfaction on consumers' psychology as well as behavioral intentions. Satisfaction plays a mediating role between dimensions of satisfaction (quality, price, value, and customer service) and behavioral intentions of customers. Monetary discount and free offer sometimes are helpful to changing a customer's behavioral intentions from dissatisfaction to satisfaction. The positive relationship between customer satisfaction and customer loyalty may be a result of a higher level of customer satisfaction. When customers are highly satisfied they become highly loyal to that particular brand. Higher level of satisfaction influences customers to be loyal to repurchase and recommend to others and is consistent with Kuo et al. (2009), and Deng et al. (2010) researches. Building

customer loyalty is effectively influenced by effective satisfaction amongst customers. Highly satisfied customers are said to be highly loyal, resulting in positive impact of satisfaction.

The second result also has managerial implications on consumer behavior field. This result relates to how consumers become satisfied, positive psychological impression, and loyal to a particular brand. To formulate business strategy regarding customer satisfaction, behavioral intentions, and customer loyalty this result will provide a real idea to the managers. Notably, satisfied clients have a tendency to be loyal, but loyal clients are not always satisfied clients. Customer satisfaction does not mean always customer loyalty. Customers have behavioral intentions that may be positive or negative. Extent of behavioral intentions and customer loyalty depends on extent of customer satisfaction. Thus,

higher level of satisfaction fosters customer loyalty, whereas, average or lower level of satisfaction lowers the behavioral intentions of customers.

Some caution should be taken because of the limitations of the study, though the study findings have theoretical and managerial implications for practitioners and scholars. A limitation of the present study is that it focuses on only one industry (electronic household product). Inclusion of more than one industry could have provided different conclusions. Secondly, this study did not consider service industry. Differences between the manufacturing and service industry, respectively in business process, marketing policy, and so on may result in different findings in the services industry. It will be more appropriate to test the conclusions by including more than one industry under one study. Comparison can be done between the industries.

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