




Regular Article

Investigation of customer satisfaction, brand trust and brand loyalty in electronics home appliances: CB-SEM Approach

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ABSTRACT

Customers expect comfort and ease in their lives. Electronics home appliances, in this case, make daily life more comfortable and easier due to technological advancement and business activities. With Bangladesh having such a huge population and the demands of customers increasing gradually, customer satisfaction (CS), brand loyalty (BL), and brand trust (BT) needs to be investigated in a scientific way. Thus, this study examined CS, BL and BT in electronics home appliances among Bangladeshi customers. This research was conducted in Bangladesh and data were collected from Dhaka city, with a total sample of 486. The respondents were selected through the shopping mall-intercept sampling technique. Collected data were analyzed with covariance based structural equation modeling (CB-SEM) using AMOS software. The findings showed that perceived quality, perceived value, and experience are significant to satisfaction. Brand image, brand awareness, and customer satisfaction are also significant. Finally, brand trust and customer satisfaction are likewise influential on brand loyalty. The study's conceptual model was underpinned by four theories: expectancy disconfirmation theory (EDT), trust and commitment theory (TCT), the reasoned action theory (TRA), and brand loyalty theory (BLT). The findings contribute to the body of knowledge in the electronics home appliances industry by complying with the theoretical assumptions. Additionally, the outcome provides practical insights in order for marketing managers, brand managers, and practicing managers to be able to develop business and marketing policy.

1. Introduction

As a valuable intangible asset, a brand is a differentiator from competitors' brands (Chung et al., 2013). A brand is a promise to offer satisfaction (Rajavi et al., 2019). As a traditional marketing approach, brand loyalty is the best way to develop and retain customer partnership

(Mabkhot et al., 2017) and sustainable growth (Light, 1994); however, it is complex (Yang et al., 2017). Brand loyalty, representing the strength of a brand, is gained over a considerable period through goodwill and name positioning in minds of consumers (Vitez, 2013) by which a company increases sales, and has a greater margin compared to competitive brands (Yousaf, Zulfiqar, Aslam, & Altaf, 2012). Hence,

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practitioners, academicians, and marketing managers are interested on brand loyalty, as it becomes a central issue in their research (Chinomona, 2016). Although brand loyalty is a dynamic concept (Parris & Guzmán, 2023), it fosters the retention of customers and confirms the long-term success of a business (Agu et al., 2024).

Kotler (2017) claimed that the marketing environment has changed rapidly. Thus, businesses are now confronted with numerous challenges in their quest to deliver superior value to customers (Shamsudin et al., 2018) and to ensure that they derive optimum satisfaction (Hassan & Shamsudin, 2019). It takes a longer time to build trust and relationships with customers. Customer brand loyalty is achieved if customers are satisfied (Yu & Yuan, 2019). A company can build trust (Shafiq et al., 2019), and in return, a customer possesses a belief in the brand (Biscaia et al., 2017).

This present study focused on the brand loyalty of electrical household appliances (both brown and white goods), namely consumer durables such as televisions, fridges, fans, air conditioners, geysers, washing machines, water heaters, coffee makers, pressure cookers, dishwashers, lighting bulbs, ovens, micro-ovens, irons, rice cookers, and sewing machines, among others. Manufacturing and marketing companies of the home appliances are finding customer retention to be a big challenge because customers do not buy these useful daily items on a regular basis. These appliances are durable and can be used for a considerable period of time, unless there is the need for value addition or service replacement (Lobo, 2016). Each family spends a significant amount to purchase these useful items because people are busy, expect comfort in their daily life, and want to adopt technological advancement. Around 176 million people live in Bangladesh (WorldMeter, 2025) and many of them are using electronic household appliances to make their lives easier. To capture this huge market, brand loyalty is a significant option for the marketers.

Considering the increasing market share and demand for household items, and future scope of business, this brand loyalty study is required. Brand loyalty is still understudied in electronics home appliances in developing countries, like Bangladesh. Academicians, marketing researchers and brand policy makers have not paid attention to these gaps; however they are the motivational factors in this study. Thus, this study attempts to investigate brand loyalty in electronics home appliances. To investigate brand loyalty in this study, we tested the research objectives from the point of analysis-covariance-based structural equation modeling (AMOS). The study addressed these research questions: 1. Do perceived quality, perceived value, and perceived experience impact customer satisfaction? 2. Do customer brand experience, brand image, brand awareness, and customer satisfaction impact the trust? 3. Do satisfaction and trust affect loyalty? And 4. Does trust have a mediation effect on the relationship between satisfaction and loyalty? The objectives correspond to the research questions: 1. To investigate the effect of perceived quality (product and service), perceived value, and perceived experience on customer satisfaction; 2. To inspect the impact of customer brand experience, brand image, brand awareness, and customer satisfaction on brand trust; 3. To explore the effect of customer satisfaction and brand trust on brand loyalty; and 4. To investigate the mediating effect of brand trust on the relationship between customer satisfaction and brand loyalty. To support these research issues the study utilized the assumptions of three theories: a) Expectancy Disconfirmation Theory, b) Trust and Commitment Theory, and c) Brand Loyalty Theory.

The study is significant for marketing managers, brand managers and marketing policy makers to frame brand loyalty for their business growth and sustainability. The study provides several insights for the marketing practitioners as to how they will deal with populous countries like Bangladesh. Significantly, the study adds value to the body of knowledge by supporting the assumptions of four theories that are pertinent to the electronics home appliances industry, which is technologically enriched in the context of developing countries.

The study flows into the following sections of literature review,

hypothesis development, research settings, data analysis, discussion of the findings, and finally the conclusion.

2. Literature

2.1. Brand loyalty

Loyalty literature is quite vast (El-Manstrly & Harrison, 2013) and dynamic (Parris & Guzmán, 2023). Marketers strive to satisfy consumers (Hess & Story, 2005; AlSokkar et al., 2025), and build and retain a long-term relationship with them (Elbedweihy et al., 2016; Rosário and Casaca (2023). A long-term relationship is alternatively called loyalty, which generates business revenue and profitability (Sudirjo et al., 2024, pp. 223–228; Yi & Nataraajan, 2018) and increases a company's financial worth (Ahmed et al., 2023). Therefore, customer brand loyalty is considered a central point in marketing strategies (Kandampully et al., 2015). Sales (revenue), their market share (customer base), profitability (earning), helping group business (portfolio growth), or sustaining in the marketplace (competitive advantage) are the ultimate results of brand and brand loyalty. To portrait a realistic picture of brand loyalty, Sasmita and Mohd Suki (2015) stated that loyalty is a behavior of customers to constantly buy a brand product over a long period, bypassing competitors' products. A brand and branding are no longer secrets; instead very open and reachable to all; customers can freely and conveniently choose what they feel good about or what brand values them (Smith, 2014). Smith further illustrated that brand is a part of their planning, and they spend and invest in and are committed to that brand.

2.2. Customer satisfaction

The customer's role in business is very significant. "Customer is king," as stated by Marshal, a famous retailer. A company aims primarily to deliver value and utility to the existing consumers and draw in new and potential consumers (Murali et al., 2016). Ahmed et al. (2020) mentioned that customer satisfaction is a widely studied concept in marketing because it represents the standard of service quality. Thus, satisfaction generated from utility and value has become a critical factor among marketing managers, practitioners and academicians, because a satisfied consumer increases profitability in return. Many researchers, including Abidovna (2023) and Yi and Nataraajan (2018), have opined that for a company, it is priority to understand customers' needs. By meeting their demands and gaining their satisfaction, a company can manage a strategic imperative to survive in the competition.

2.3. Brand trust

Brand trust is a significant concept in marketing literature (Bae & Kim, 2023). Brand trust, as suggested by Hunt and Morgan (1996), is a unique asset. Hanaysha and Abdullah (2015) mentioned that this brand trust is achieved through collective effort and hardship. They also added that brand trust benefits an organization with sustainable competitive advantage. The basic definition of brand trust was given by Deutsch (1973) as "the confidence that one will find what is desired from another, rather than what is feared". However, this definition was crowned over a period with the input of various scholars from different points of view in marketing and consumer research. Yannopoulou et al. (2011) mentioned that trust is "delicate and subjective." They reasoned that trust exists in customer belief, not in fact.

2.4. Product quality

Product is a physical object or intangible service, which satisfies an individual's needs (Kotler & Armstrong, 2018). As an element of a brand, a product is familiar, and a brand is represented through a product. Kotler (2012) mentioned that a product expresses a brand. A product's attributes and characteristics, and services associated with it

explain product quality. In recent studies, Kotler and Armstrong (2018), Lin et al. (2018) and Gök et al. (2019) prioritized product quality as it is a vital issue for companies, particularly for their growth.

2.5. Quality of services

Service is the summation of activities that satisfy the needs of the service receiver, namely rapid delivery of the product, listening to the customer, good behavior, perfectly doing the respective responsibility, undertaking the responsibility, and timeliness. Service has two aspects: only service (treatment, hairdresser, airlines, etc.) and service with physical products (restaurants, electronics appliances, computers, etc.). According to Rigopoulou et al. (2008), quality of service related to physical electronics products is twofold: delivery service quality and installation service quality. These aspects are also relevant to home appliances; thus, the study adapted the delivery service and installation service as quality of service.

2.6. Customer perceived value

Woodruff and Gardial (1996) stated that perceived value is “what a customer desires from a product and service”. Many researchers studied perceived value in their research, such as Nasution and Mavondo (2008). Customer perceived value is an antecedent of customer satisfaction and brand loyalty. Several scholars have explored with a potential predictor of satisfaction, such as perceived value (e.g., Yan et al., 2019).

2.7. Customer brand experience

The construct “customer brand experience” first came to light in studies by Pine and Gilmore (2000) and Brakus et al. (2009) defined brand experience as “subjective, internal consumer responses (sensation, feelings, and cognitions, and behavioral responses), evoked by brand-related stimuli that are part of a brand’s design and identity, packaging, communications, and environments”.

2.8. Brand image

Keller (1993) defined “brand image” as the customers’ perceptions, which are reflected by the different associations they hold in mind about the brand. In another statement, Keller (1993) illustrated that brand image is “a set of associations typically organized in some meaningful way in a customer memory and represents perceptions that may or may not reflect the objective reality”. Brand image is taking the place of vibrant elements of brand and brand loyalty. Sondoh et al. (2007) stated the significance of the role of brand image in the brand loyalty model.

2.9. Brand awareness

Brand awareness is a “driver of brand choice” (Valavi, 2014). Researchers agreed that brand awareness is a vital component of the brand to measure its weight (Aaker, 1996). Brand awareness offers customers the ability to recall and recognize a particular brand that reminds consumers about certain categories of products. Brand awareness is very significant in brand management, helping the company differentiate and establish a unique brand in the market. Brand awareness creates an ambience of staying ahead in the competition.

2.10. Hypotheses development

Product quality-functionality, size, shape, color, durability, is significant in shaping customer satisfaction (Assidiki & Budiman, 2023). This relationship is confirmed by the likes of Santouridis and Trivellas (2010), Ryu and Han (2010), and Jakpar et al. (2012). Recently, Hamzah and Shamsudin (2020), Ehsani and Ehsani (2015) and Gök et al.

(2019) explored how the quality of physical products satisfy the users. Thus, the study proposed-

H1. Product quality has a significant relationship with customer satisfaction.

Satisfaction is the result of perceived quality and is correlated with quality of service (Ayo et al., 2016). Mmutle and Shonhe (2017) emphasizes service quality-such as after sale service, installation service, or delivery service to satisfy the customers. Repairing, refunding, changing items, quick response, providing better suggestions and guidelines for electronics items and training and educating the customer are significant factors for customer satisfaction. Thus, the study proposes-

H2. Quality of service has a significant relationship with customer satisfaction.

Customer expectation and their experience determine the customer’s perceived value. The higher customer value (better experience than expectation) creates maximum customer satisfaction (Chen & Chen, 2010; Fazal & Kanwal, 2017). If customers perceive that they gain more than they spend, it leads to their satisfaction. Thus, the following hypothesis was formulated as:

H3. Customer perceived value has a significant influence on customer satisfaction.

Scholars, such as Davras and Caber (2019), Hirata (2019), and Yu and Yuan (2019), have stated that customer experience is connected with a person’s emotion and mental contentment. If a customer has a positive experience, s/he has a positive emotion and positive contentment about that brand or company or even product-service. Analogously, Gligor et al. (2019) added that customer experience influences their contentment; if a buyer gains value from a product and they rely on that company or brand. In the event of buying and using electronics home appliances, purchase and usage experience over their initial expectation value their spending and develop satisfaction and reliability. Thus, we can posit that-

H4. Customer brand experience has a significant relationship with customer satisfaction.

H5. Customer brand experience has a significant relationship with brand trust.

Superior brand image leads to higher brand trust (Yang et al., 2017). Mabkhot et al. (2017) in their research on automobiles in Malaysia depicted that brand image significantly relates to brand trust. Similarly, Goldsmith and Newell (1997) and Lau and Lee (1999) found that a positive attitude towards a branded product directs a positive confidence. For buying costly electronics home appliances, customers normally choose a familiar brand that is well known. Therefore, we hypothesize that-

H6. Brand image has a significant relationship with brand trust.

Brand awareness is a predictor of brand trust, which indicates an association among them (Ahmed et al., 2019; Esch et al., 2006). As brand awareness is a state a customer keeps the name of a brand or company at the top of mind in a market situation. This prioritizing of the status of a brand in the customer’s mind indicates a state of confidence. Thus, Oktiani and Khadafi (2018) found that brand awareness affects brand trust. Kang (2000) made similar findings; and Ong et al. (2012) signify brand awareness in the case of high involvement products such electronics home appliances. Therefore, the study proposed the following hypothesis:

H7. Brand awareness has a significant relationship with brand trust.

Satisfaction is a psychological state that propounds trust (Shamsudin et al., 2018). Chinomona (2013) mentioned in his research that the higher the level of satisfaction a customer possesses, the higher degree of

trust s/he will build on the brand. The positive and strong relationship between satisfaction and trust was established in study of [Azize et al. \(2012\)](#); and the extended literature found the relationship to be significant ([Veloutsou, 2015](#)). Therefore, the following hypothesis is proposed:

H8. Customer satisfaction has a significant relationship with brand trust.

[Fernandes and Moreira \(2019\)](#) illustrated that a satisfied customer is the decider of being loyal to that brand; thus, satisfaction influences their loyalty. Previous research found that satisfaction significantly affects loyalty ([Bakar et al., 2017](#); [Murali et al., 2016](#); [Ong et al., 2017](#); [Reydet & Carsana, 2017](#)) because contented consumers or buyers tend to patronize the brand constantly i.e. repurchasing. Although an electronic home appliance is separate from intangible service, [Ledikwe et al. \(2019\)](#) reiterated that customer satisfaction and brand loyalty are highly correlated.

Similarly, brand trust provides reliability of repurchasing a particular brand. For example, [Giovani and Athanasopoulou \(2017\)](#) and [Ledikwe et al. \(2019\)](#) found that in the case of physical products such as electronics home appliances, trust (reliability) of a brand influences the loyalty of that brand e.g. repurchase of the brand ([Hussain & Ahmed, 2020](#)), recommending to other customers and supporting company activities. This brand trust becomes a more significant consideration when the customer purchases costly items such as a smart TV, fridge, or washing machine from a trusted brand. Therefore, the study proposed that:

H9. Customer satisfaction has a significant relationship with brand loyalty.

H10. Brand trust has a significant relationship with brand loyalty.

A satisfied customer becomes a repeat-buyer of a brand and makes

positive word of mouth or recommends to others. This satisfaction and loyalty relationship become stronger once satisfaction influences developing trust and this trust enhances loyalty in the long run. Thus, marketers and marketing academics significantly use and suggest brand trust as a mediator between this relationship ([Reichheld, 1996](#)). [Lee et al. \(2013\)](#) supported a significant positive association between satisfaction and loyalty. [Ledikwe et al. \(2019\)](#) found brand trust significant for brand loyalty. Similarly, a satisfied customer from their usage and interaction experience starts relying on the brand. Therefore, satisfaction has an impact on trust. Considering these challenges, the study proposes-

H11. Brand trust has a mediating effect on the relationship between satisfaction and brand loyalty.

Based on the literature reviewed in the previous section, we developed the conceptual framework for the study, showing six independent variables, two mediators and one dependent variable, connecting each other, respectively (see [Fig. 1](#) below).

Many marketing researches identified the predictors of brand loyalty and recommended that amongst the influential antecedents are customer satisfaction, trust and the view towards the brand ([Oliver, 1999](#); [Veloutsou, 2015](#)).

3. Research method and data analysis

3.1. Research design and Measurements Selection

This current study is quantitative research based on the positivism philosophy, where primary data were collected using a structured self-administered questionnaire devised from the measurements of previous literature. The measurements were utilized from the various studies on brand loyalty ([Kim & Kim, 2005](#); [Dwivedi, 2015](#)), customer

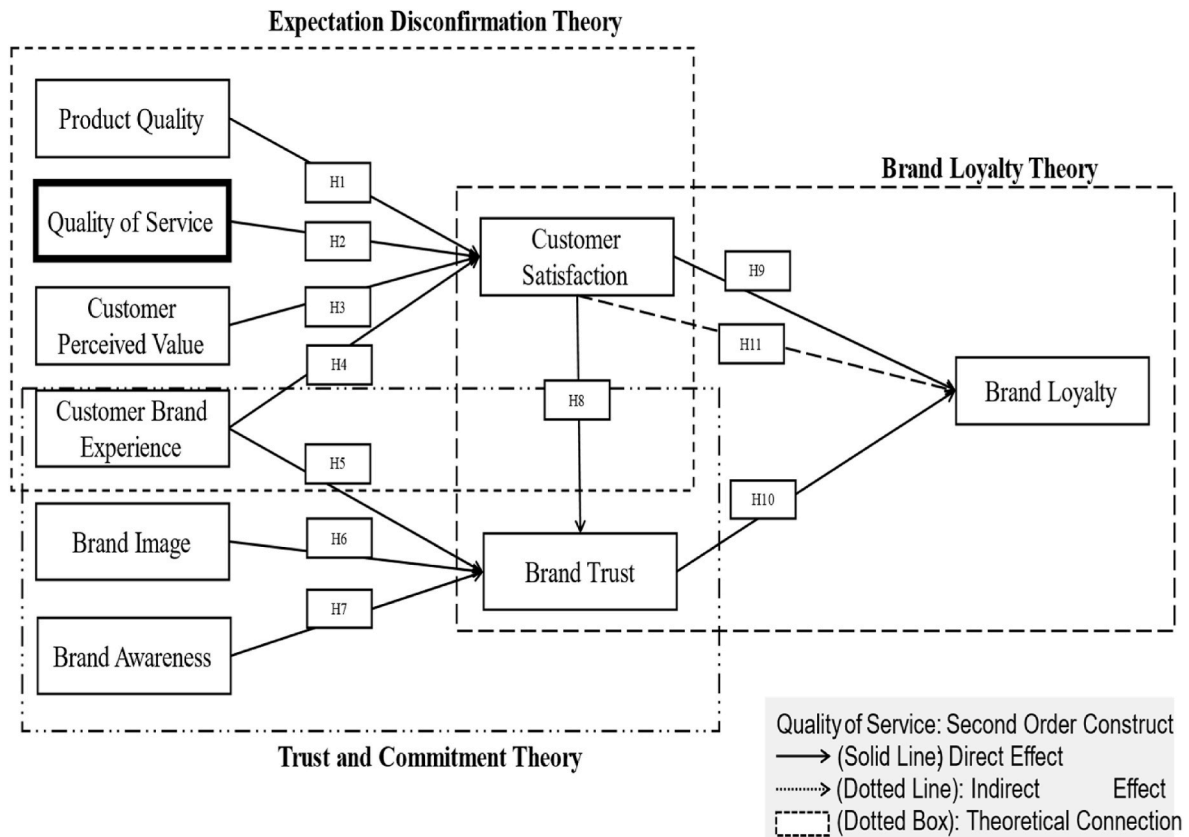


Fig. 1. Conceptual model.

satisfaction (Dwivedi, 2015; Walls, 2013), brand trust (Veloutsou, 2015; Chaudhuri & Holbrook, 2001), product quality (Parasuraman & Grewal, 2000), quality of service (Rigopoulou et al., 2008), customer perceived value (Sekaran & Bougie, 2009; Walls, 2013), customer brand experience (Brakus et al., 2009), brand image (Gill & Dawra, 2010), and brand awareness (Atilgan et al., 2005). Brand loyalty was scaled on the 7-point Likert Scale as it is the focal issue in this study. The other seven constructs were measured using the 5-point Likert Scale, indicating 1: strongly disagree, 2: disagree, 3: neutral, 4: agree and 5: strongly agree.

3.2. Sampling technique and sample size

The study utilized a survey method to collect data. Survey is practical when the targeted population is substantial, and the researcher lacks adequate resources to collect the required data. Sampling could save the time and cost of research by inferring a conclusion by examining the sample instead of the whole population (Saunders et al., 2016). Between two major types of sampling-non-probability and probability sampling (Craig & Douglas, 2005; Iacobucci & Churchill, 2010; Saunders et al., 2016), non-probability sampling technique relies on the researcher's judgment or the convenience of sampling procedures (Greenfield & Greener, 2016; Malhotra et al., 2013). As the target population is not varied much, and this study is most relevant marketing area, a convenience method can be used (Saunders et al., 2016). Among other convenience techniques, the study utilized the shopping-mall intercept survey method for data collection.

According to Bush & Hair (1985), many marketing researchers used mall intercept technique for data collection, and its use increased tremendously. Bruwer et al. (1996) also suggested using the shopping-mall intercept method to collect marketing data from respondents. This shopping mall intercept is an inexpensive technique to gather respondents' personal, accurate and high-quality data (Ducoffe, 1995; Jackson et al., 2011; Rice & Hancock, 2005; Fam et al., 2019). In a particular shopping mall, electronics showroom, stadium market, best buy centres, company's outlets, or other display centres in various parts of selected areas the researcher with three expert data enumerators collected data from individual customers. Every alternative person coming to visit showrooms or centres was asked to attend in the survey. Refusal by the potential respondent led to the next possible respondent. Once a potential respondent agreed to take part in this survey, they were given a questionnaire to interpret the purpose of the study, and assurance to keep confidentiality of their identity and the data collected. However, some respondents agreed to respond to the interview and received the questionnaires. But later on, they did not return the filled questionnaires. As a result, some questionnaires were missing.

In seven days a week, in the afternoon, various centres were visited for data collection. Especially on Friday and Saturday (weekend), maximum respondents were visiting those areas. The interviews were conducted from afternoon until 7 p.m. (evening time, about sunset time). This time was the most suitable because people visited the shopping malls. Besides, there was no sampling frame of the expected respondents (users or buyers). Consumer Association of Bangladesh (CAB), who is one of vital authorities of holding the list of electronics home appliances buyers or users, could not serve this list. As this study was not funded by any grants or institutions the survey cost, time, sampling frame, and resources availability were also a concern.

Moreover, respondents were the users or buyers or both of electronics home appliances. They buy them from particular shopping malls, electronics showrooms, stadium markets, BestBuy centres, company outlets, or other display centres. In Bangladesh these retail centres are mostly located in across urban and semi-urban areas of Dhaka and Chittagong. This technique, although it is non-probabilistic, is frequently used in consumer behavior studies where a random sampling frame is not feasible (Etikan et al., 2016).

Additionally, the questionnaire included a screening question whether they were buyers or users of electronic home appliances.

Though this technique interrupts the generalization of the study, the contextual depth and real-world connection and importance were enhanced.

The level of representation of these units in the population is moderate to high. As we know Bangladesh is populous country with mid or low income (176.42 million people). In Dhaka city, the capital city of the country, around 23.9 million people live with low and mid income. As the data were collected from the common but huge population in the field, we expected it to be high level of representation. The representation level was addressed while we developed the questionnaire (scale, items, inclusion, exclusion criteria, shopping center selection, etc.).

The respondents were selected based on the shopping mall intercept method in 12 shopping malls, retail shops, showrooms, and display rooms of various brands and companies. Physical questionnaires were distributed and collected. The questionnaire has 62 items among the eight constructs. Following the structural equation modeling (SEM), researchers utilized a widely used sampling approach, namely the "rule of 5" or "rule of 10" under the normal distribution theory, to obtain the appropriate significance tests (Bentler & Chou, 1987; Hair et al., 2017). Thus, this study targeted 550 samples which is in between lowest 310 and highest 620. A total of 486 respondents were finally useable in analysis.

3.3. Questionnaire instrument

The cover letter of the questionnaire illustrated that the ethical standard of survey was protected and maintained for the respondents' privacy, confidentiality, and freedom. The first screen question was selecting the best two brands of electronic home appliances. In the last section of the questionnaire, demographic information was asked of the respondents (see Appendix).

3.4. Sample description

The respondents are a key part of any research, and the research results depend on the respondents' profile. This section elaborated on the respondents' demographic characteristics, namely gender, age, marital status, family members, education, occupation, religion, service length/business experience, and income range. Table 1 provides the respondents' personal information. A total of 523 respondents participated in this study. Of them, 321 (63 %) were male, and 186 (37 %) were female, which meant males were more dominant than females in Bangladesh. In the age category, most of them were from the age of 21–40 years (420; 86 %), which resembled a younger aged Bangladesh population. A total of 425 (83 %) respondents were married, which indicated they had their own family. The table also showed that 373 (73 %) had either one or two children, indicating a nuclear family structure. Moreover, a total of 156 (30 %) respondents had a college education (12 years of schooling), and 151 (29 %) respondents had obtained a graduation degree.

This statistic indicated the gap in education levels in Bangladesh. In the case of occupation, a total of 177 (34 %) were homemakers; meaning one-third of the population are not engaged in a job. Another one third (172; 33 %) had employment in private organizations. Further, 111 (43 %) had six to 10 years' experience, and 82 (31.91 %) respondents had one to five years' experience in their service or business. Concerning the respondents' monthly individual income, 85 (36 %) earned BDT 20,000.00 and below, and 73 (31.06 %) respondents earned in between BDT 20,001.00 and BDT 40,000.00 per month. This data reveals that around two-thirds of the respondents earn up to BDT 40,000.00 {USD482.00 equivalent}. Muslims dominated (483; 94 %) with Hinduism having 8 (1.56 %), Christianity 2 (0.39 %), and Buddhism only 1 (0.20 %).

Table 1
Demographic characteristics of the respondents.

Particulars	Frequency	Percentage	Particulars	Frequency	Percentage
Gender			Occupation		
Male	321	63 %	Student	51	10.04 %
Female	186	37 %	Labor	16	3.15 %
Age Group			Self-Employed	43	8.46 %
20 and below	3	0.61 %	Govt. Employee	22	4.33 %
21–25	74	15.07 %	Private service	172	33.86 %
26–30	133	27.09 %	Home Maker	177	34.84 %
31–35	127	25.87 %	Others	27	5.31 %
36–40	86	17.52 %	Religion		
41–45	47	9.57 %	Islam	483	94.34 %
46–50	11	2.24 %	Hinduism	18	3.52 %
51–55	9	1.83 %	Christianity	8	1.56 %
56–60	1	0.20 %	Buddhism	2	0.39 %
Marital Status			Others	1	0.20 %
Unmarried	79	15 %	Service Length		
Married	425	83 %	1 years–5 years	82	31.91 %
Divorced	4	1 %	6 years–10 years	111	43.19 %
Widow	3	1 %	11 years–15 years	42	16.34 %
Family Members			16 years–20 years	14	5.45 %
Two Members	64	12.60 %	21 years–25 years	5	1.95 %
Three Members	192	37.80 %	26 years–30 years	3	1.17 %
Four Members	181	35.63 %	Monthly Income (Amount in BDT) {BDT84.00 = \$1.00}		
Five Members	69	13.58 %	10,000 and below	7	2.98 %
Six Members	2	0.39 %	10,001 to 20,000	78	33.19 %
Education Level			20,001 to 40,000	73	31.06 %
Primary	25	4.94 %	40,001 to 60,000	33	14.04 %
Secondary	80	15.81 %	60,001 to 80,000	22	9.36 %
College	156	30.83 %	80,001 to 100,000	14	5.96 %
Bachelor	151	29.84 %	100,001 and above	8	3.40 %
Master	87	17.19 %			
Phd	7	1.38 %			

3.5. Elementary analysis

For data suitability the study checked data normality and multicollinearity.

3.5.1. Normality test

Data normality or normal data distribution is a prerequisite for multivariate regression. Normality distribution is one of the fundamental assumptions in conducting multivariate regression analysis (Sun et al., 2019), especially, when Structural Equation Modelling (SEM) is used through the maximum likelihood (ML) estimates (Hair et al., 2017b, Hair et al., 2017a; Wang & Wang, 2019). Skewness and Kurtosis are the statistical methods for examining either all constructs or a subset of constructs in the research data (Ali et al., 2018; Cain et al., 2017). The data is considered normal if the skewness is between -2 and +2 (Ali et al., 2018; Cain et al., 2017; Tabachnick & Fidell, 2013) and the kurtosis is between -7 and +7 (Ali et al., 2018; Byrne, 2016). In this current research, the cutoff point value of ±2.0 for Skewness and ±5 for Kurtosis

was adopted to test the dataset’s normality distribution. Table 2 showed that all Skewness and Kurtosis values fell within the recommended range of ± 2.0 and -/+5.0 as suggested by (Kline, 2015). Therefore, the data in this study were normally distributed. The skewness and kurtosis values were presented in Table 2.

Also, Kolmogorov-Smirnov and Shapiro-Wilk (K-S) statistics Shapiro & Wilk (1965) were measured for each variable Table 3, and outputs showed that all the variables were statistically significant, which indicate that data does not come from a normal distribution. The significance of the K-S test depicted the significance because of the large sample (Pallant, 2010). In the case of a large sample, the significance of the K-S test is not considered as a deviation of data from a normal distribution (Field, 2013).

Skewness and Kurtosis shoaed data normality. However, the normality tests (Kolmogorov–Smirnov, Shapiro–Wilk, and Mardia’s) indicated that the data violates the assumption of normality. To minimize this issue ths study used AMOS tool by conducting the bootstrapping technique to correct for potential bias in parameter estimates

Table 2
Assessment of data normality via skewness and kurtosis (normal distribution).

	Valid	Missing	Mean	SD	Variance	Skewness	Std. Error of Skewness	Kurtosis	Std. Error of Kurtosis
BL	486	0	3.621	0.852	0.727	-1.424	0.111	2.551	0.221
CS	486	0	3.604	0.966	0.934	-1.607	0.111	2.049	0.221
BT	486	0	3.534	0.887	0.787	-1.451	0.111	2.235	0.221
PQ	486	0	3.413	1.025	1.051	-1.186	0.111	0.633	0.221
DSQ	486	0	3.489	0.798	0.638	-0.831	0.111	1.187	0.221
ISQ	486	0	3.421	0.880	0.774	-1.452	0.111	1.756	0.221
CPV	486	0	3.446	0.879	0.773	-1.515	0.111	1.515	0.221
CBEx	486	0	3.557	0.753	0.568	-1.403	0.111	2.851	0.221
BI	486	0	3.520	0.849	0.722	-1.364	0.111	2.338	0.221
BA	486	0	3.313	0.896	0.803	-0.776	0.111	-0.352	0.221

Table 3
Tests of normality via Kolmogorov-Smirnov Shapiro-Wilk.

	Kolmogorov-Smirnov (a)			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
BL	0.232	486	0.000	0.843	486	0.000
CS	0.298	486	0.000	0.769	486	0.000
BT	0.262	486	0.000	0.821	486	0.000
PQ	0.272	486	0.000	0.833	486	0.000
DSQ	0.172	486	0.000	0.929	486	0.000
ISQ	0.281	486	0.000	0.811	486	0.000
CPV	0.283	486	0.000	0.783	486	0.000
CBEx	0.214	486	0.000	0.870	486	0.000
BI	0.204	486	0.000	0.840	486	0.000
BA	0.276	486	0.000	0.888	486	0.000

aLilliefors Significance Correction.

and standard errors. Bootstrapping provides more robust estimates under non-normal conditions (Byrne, 2010; Nevitt & Hancock, 2001). Beside this study used 486 data for test the hypotheses. Although the data are non-normally distributed, the sample size exceeds 200, and according to Kline (2015), maximum likelihood estimation remains robust under moderate deviations from multivariate normality when the sample size is sufficiently large."

Another method to test multivariate normality is that **Mardia's coefficient** was calculated (Browne, 1982). Analysis of Moment Structure AMOS through CB-SEM computed Mardia's (1970) coefficient of multivariate normality (Arbuckle, 2006), which indicates that the assumption of multivariate normality was not tenable (Mardia's coefficient = 228.527, CR = 39.88). The observations farthest from the centroid (Mahalanobis distance) and displays potential multivariate outliers, which resulted in non-normality within the sample.

3.5.2. Multicollinearity

For multicollinearity, the study found correlation less than 0.90 and VIF (variance inflation factor) was at an acceptable threshold (if it is smaller than 3.30) as shown in Table 4.

3.6. Common method variance or common method bias test

The current study employed Harman's single-factor test (Podsakoff & Organ, 1986) to examine.

CMV for CB-SEM. The principal component analysis (PCA) approach was employed in conducting this test. The largest unrotated single factor explains 37.26 % variance (Table 5), which is below the threshold level of 50 % (Kumar, 2012).

The study utilized pathological collinearity method to check CMB. In this present study (Table 6), brand awareness exceeded the threshold value. Other than brand awareness, VIFs were less than the threshold value of 3.30 (Kock, 2015). From both results it was found that there is no issue of CMB. Table 5 represents the VIF values of this study.

Table 4
Correlation among the variables and VIF.

	1	2	3	4	5	6	7	8	9	10	11	Collinearity Statistics		
1. BL	1												Tolerance	VIF
2. CS	0.738**	1											0.570	1.754
3. BT	0.617**	0.603**	1										0.483	2.070
4. PQ	0.335**	0.490**	0.350**	1									0.651	1.535
5. DSQ	0.321**	0.307**	0.243**	0.392**	1								0.508	1.969
6. ISQ	0.037	0.172**	0.177**	0.470**	0.539**	1							0.468	2.138
7. CPV	0.280**	0.401**	0.367**	0.576**	0.370**	0.506**	1						0.462	2.164
8. CBEx	0.256**	0.312**	0.359**	0.439**	0.323**	0.363**	0.384**	1					0.464	2.156
9. BI	0.291**	0.334**	0.376**	0.432**	0.261**	0.324**	0.345**	0.704**	1				0.303	3.303
10. BA	0.380**	0.541**	0.494**	0.651**	0.422**	0.541**	0.689**	0.462**	0.473**	1			0.477	2.096

4. Data analysis methods using SEM

SEM is well-known as causal modelling, causal analysis, simultaneous equation modelling, path analysis, multiple complex models, and multiple and complex relationships (Hair et al., 2017). This structural theory ensures causal procedures and generates observations on multiple constructs. This study utilized covariance-based and variance-based (CB-SEM-AMOS), a second-generation data analysis technique (Bagozzi & Fornell, 1982). Covariance-based structural equation modeling is conducted in three steps: a) Individual Confirmatory Factor Loading, b) Evaluation of Measurement Model and c) Structural Model.

The adoption of SEM for social sciences and business research to achieve the objective of testing the existence of relationships among constructs in a theoretical framework has gained widespread acceptance among the researchers (Hair et al., 2010b). SEM is primarily a linear structural equation model using the path coefficient of the constructs that are significant to test whether there is an empirical significance of the conceptual framework and finally test the hypotheses. The SEM is able to provide better flexibility in term of interaction between data and theory. Researchers particularly appreciate SEM's ability to assess the latent variables at the observation level, which is named the outer or measurement model and test the inter-relationships between latent variables on the theoretical level named the inner or structural model (Hair et al., 2017c). First generation tools such as linear regression, factor analysis, PCA, ANOVA, and MANOVA provide only one layer of relationship between independent and dependent variable at time. On the other hand, SEM is second generation tool.

Further, SEM's adoption as the analysis instrument is based on the principle that SEM is an ideal statistical methodology applicable to the confirmatory hypothesis testing through the approach of multivariate analysis (Byrne, 2016b). The employment of SEM for this research is relevant in view of this current study's proposed theoretical framework that encompasses multiple interrelationships, mediation, and moderation links between the constructs that are confirmatory in nature. The application of SEM which allows the research to test the theories and concepts completely. Chin (1998) has transformed SEM into a quasi-standard research pertaining to the marketing field (Hair et al., 2017c).

The researcher's decision to employ SEM in this research is because it can explain the relationship between multiple variables through a recognisable multivariate technique such as confirmatory factor analysis (Anderson & Fornell, 2000). Furthermore, SEM also has the capacity to measure the unidimensionality, reliability and validity of individual constructs (Anderson & Gerbing, 1988; Bollen, 1989; Hair et al., 2010b; Kline, 2015). Besides, SEM is considered a valid approach to comprehensively testing the multiple relationships (Anderson & Fornell, 2000). Moreover, SEM offers a test for individual parameter estimate and the overall test of model fitness simultaneously, achieving a better data fit and reducing measurement error. Overall (Hair et al., 2011), shows that employment of SEM in social science and business research able to bring the following advantages which are summarized as follow:

Table 5
Common method variance or common method bias test.

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	25.335	37.260	37.260	24.724	36.359	36.359
2	8.115	11.933	49.191			
3	4.610	6.779	55.970			

Extraction Method: Principal component analysis.

Table 6
Common method variance via pathological collinearity (VIFs: Factor level).

Independent Variable	BA	BI	BL	BT	CBEx	CPV	CS	PQ	QS	SMU
VIFs when dependent variable: Brand Awareness										
Brand Awareness		5.993	5.582	5.628	6.005	5.205	5.878	5.386	5.597	4.624
VIFs when dependent variable: Brand Image										
Brand Image	2.577		2.596	2.604	1.493	2.583	2.594	2.584	2.598	2.576
VIFs when dependent variable: Brand Loyalty										
Brand Loyalty	3.113	3.203		2.859	3.184	3.202	1.912	3.236	3.169	3.135
VIFs when dependent variable: Brand Trust										
Brand Trust	2.156	2.299	2.034		2.29	2.316	2.283	2.259	2.272	2.285
VIFs when dependent variable: Customer Brand Experience										
Cust Brand Exper	2.628	1.512	2.618	2.646		2.628	2.64	2.638	2.58	2.611
VIFs when dependent variable: Customer Perceived Value										
Cust Perv Value	2.092	2.426	2.419	2.446	2.435		2.421	2.396	2.412	2.434
VIFs when dependent variable: Customer Satisfaction										
Cust Sat	3.665	3.765	2.214	3.711	3.769	3.743		3.656	3.703	3.631
VIFs when dependent variable: Product Quality										
Prod Qual	2.165	2.419	2.419	2.384	2.433	2.397	2.356		2.417	2.414
VIFs when dependent variable: Quality of Service										
Qual Of Serv	1.68	1.793	1.443	1.687	1.738	1.785	1.632	1.779		1.795

- Making assumptions, construct, and hypothesized relationships in a researcher’s model.
- The precious and clear definition of various constructs and their operationalization together with the functional relationship between them adds a degree of precision to the research model.
- Assessing both the fitness of individual constructs and the overall model.
- Analyzing the mediating effects between exogenous and endogenous variables.
- Analysing the moderating effects of the moderating variable on the links among the constructs understudies.
- Modelling the error terms as well as handling the correlated error among response items.

4.1. Measurement model

For AMOS, the individual CFA results of eight latent constructs found they were reliable and valid. After confirming each latent variable, the measurement model was evaluated with all latent constructs together and collectively and their results are provided. Subsequently, having confirmed the fitness of measurement, the structural model was evaluated, and results are represented to test the research hypotheses.

The measurement model checked through construct reliability, convergent validity, and discriminant validity. Factor loadings >0.70 and composite reliability (CR) > 0.70 confirm construct reliability and average variance extracted (AVE) confirms the convergent validity as AVE >0.50 as shown in Table 7.

In the case of the discriminant validity test (Table 8), the Fornell and Larcker ratio is diagonally higher than their respective row and column values, e.g. square root of AVE is higher. Even the maximum shared value (MSV) is lower than AVE and higher than average shared value (ASV), which also confirms discriminant validity (Table 8).

For measurement model, the convergent validity and discriminant validity were approved as the measures were optimal for the threshold

values (Fig. 2). Therefore, the measurement model was suitable for hypothesis testing.

4.2. Measurement model fitness

From Table 7 and Fig. 2, we found Chi-Square (X^2) < 5, CFI >0.90 and RMSEA <0.08. These indicators proved the model fitness and readiness for hypothesis testing. Fig. 2 shows the measurement model of this study:

4.3. Structural model and hypothesis test

In this section, the respective structural models are presented and interpreted. Once the measurement model was fit with collected data, the study investigated the hypothesized relationships with the structural model. The analysis results in the structural model for perceived quality (product service), perceived value and perceived experience towards customer satisfaction, customer brand experience, brand image and brand awareness towards brand trust and finally customer satisfaction and brand trust towards brand loyalty, revealed that the structural model fits the dataset to an acceptable level. The results showed that based on the three fit indices: a) absolute fit indices through the relative Chi-square/df (2.535, P < 0.000) below the recommended value of five; b) the incremental fit indices- TLI, IFI, and CFI, resulted with a value of more than threshold value of 0.90 (0.917, 0.923, and 0.923, respectively); and c) parsimony fit measures (NFI >0.90) value were to be obtained for confirmation that all measures were within recommended levels (Fig. 3).

The results of the structural model showed that all hypotheses were supported except one (the relationship between customer brand experience and brand trust (Table 9 and Fig. 3). Product Quality (Beta = 0.422, P < 0.001), Quality Service (Beta = -0.199, P < 0.01), CPV (Beta = 0.256, P < 0.05) and CBEx (Beta = 0.171, P < 0.05) have a direct effect on customer satisfaction. Similarly, Brand Image (Beta = 0.143, P < 0.05), Brand Awareness (Beta = 0.156, P < 0.001), and Customer

Table 7
Convergent validity and measurement model fitness.

Constructs		Loading	CR	AVE	X ²	CFI	RMSEA
Brand Awareness	BA_1	0.812	0.895	0.643	2.099	0.996	0.048
	BA_2	0.812					
	BA_3	Del.					
	BA_4	0.831					
	BA_5	0.774					
	BA_6	0.78					
Brand Image	BI_1	Del.	0.922	0.723	3.57	0.993	0.073
	BI_2	0.87					
	BI_3	0.837					
	BI_4	0.843					
	BI_5	0.856					
	BI_6	0.844					
Brand Loyalty	BL_1	Del.	0.733	0.925	2.965	0.99	0.064
	BL_2	0.86					
	BL_3	Del.					
	BL_4	0.847					
	BL_5	0.864					
	BL_6	0.848					
	BL_7	0.86					
	BL_8	0.872					
	BL_9	0.814					
	BL_10	0.882					
Brand Trust	BT_1	0.826	0.924	0.729	2.688	0.996	0.059
	BT_2	Del.					
	BT_3	0.824					
	BT_4	0.836					
	BT_5	0.865					
	BT_6	0.915					
Customer Brand Experience	CBE _x _1	Del.	0.908	0.68	1.468	0.999	0.031
	CBE _x _2	0.812					
	CBE _x _3	0.792					
	CBE _x _4	0.825					
	CBE _x _5	0.846					
	CBE _x _6	0.848					
Customer Perceived Value	CPV_1	Del.	0.929	0.747	0.191	1	0
	CPV_2	Del.					
	CPV_3	0.857					
	CPV_4	0.829					
	CPV_5	0.894					
	CPV_6	0.875					
Customer Satisfaction	CS_1	0.910	0.945	0.798	0.699	1	0.000
	CS_2	0.837					
	CS_3	Del.					
	CS_4	Del.					
	CS_5	0.900					
	CS_6	0.923					
Quality of Service (<i>Delivery Service Quality and Installation Service Quality</i>)	DSQ_1	0.740	0.906	0.675	3.681	0.972	0.074
	DSQ_2	0.838					
	DSQ_3	0.781					
	DSQ_4	0.806					
	DSQ_5	0.849					
	DSQ_6	0.809					
	ISQ_1	0.790					
	ISQ_2	Del.					
	ISQ_3	0.854					
	ISQ_4	0.847					
Product Quality	ISQ_5	0.893	0.940	0.780	0.610	1.000	0.000
	PQ_1	0.850					
	PQ_2	0.910					
	PQ_3	0.870					
	PQ_4	0.910					
	PQ_5	Del.					
Measurement Model					2.507	0.925	0.056

Satisfaction (Beta = 0.436, P < 0.001) have a significant effect on brand trust. Conversely, Customer Satisfaction (Beta = 0.510, P < 0.001) and Brand Trust (Beta = 0.270, P < 0.001) were found positively significant on brand loyalty. Table 8 shows the results of path coefficients:

Fig. 3 below represents the structural model of this study:

4.4. Mediation model

In this study, customer satisfaction and brand trust are the first level dependent variables, and brand loyalty is the second level dependent variable. Customer satisfaction and brand trust are independent variables in the second level towards brand loyalty. Both models fit the data sufficiently as the Akaike Information Criterion (AIC) is smaller, and Parsimony Normed Fit Index (PNFI) is greater. According to Hooper

Table 8
Discriminate validity.

	CR	AVE	MSV	ASV	BI	PQ	CPV	CBEx	BA	CS	BT	BL	SQ
1. Brand Image	0.909	0.714	0.598	0.212	0.845								
2. Product Quality	0.935	0.783	0.523	0.274	0.463	0.885							
3. CPV	0.922	0.747	0.554	0.264	0.373	0.608	0.864						
4. CBEx	0.914	0.681	0.598	0.218	0.773	0.470	0.415	0.825					
5. Brand Awareness	0.900	0.643	0.619	0.388	0.502	0.723	0.744	0.510	0.802				
6. Customer Satisfaction	0.940	0.798	0.582	0.263	0.340	0.500	0.405	0.320	0.580	0.893			
7. Brand Trust	0.931	0.730	0.425	0.229	0.412	0.376	0.399	0.383	0.552	0.652	0.854		
8. Brand Loyalty	0.956	0.733	0.582	0.191	0.319	0.355	0.303	0.279	0.381	0.763	0.652	0.856	
9. Quality Service	0.781	0.642	0.494	0.234	0.399	0.587	0.612	0.480	0.703	0.285	0.272	0.187	0.801

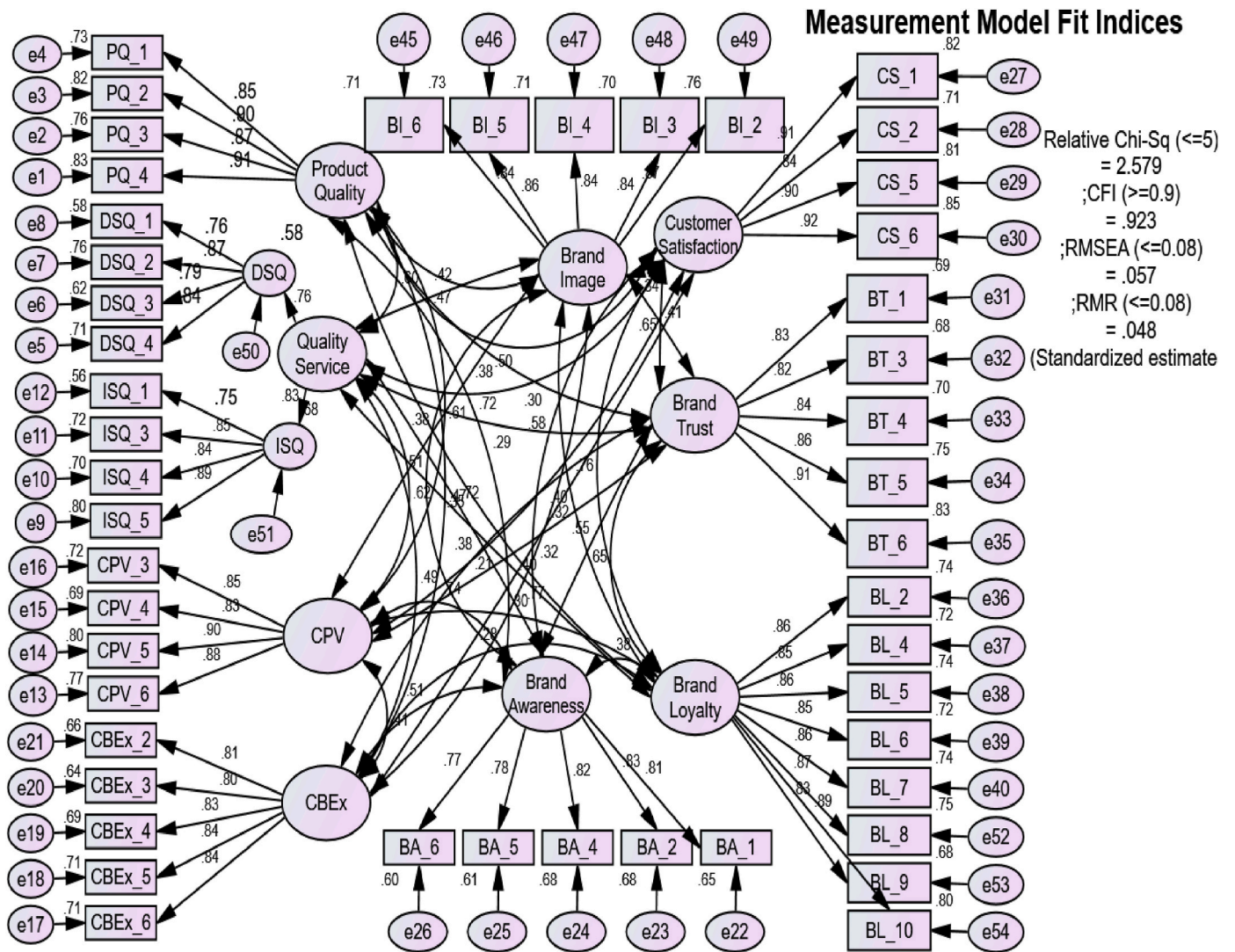


Fig. 2. Measurement model.

(2008), this model had a good fit (Figs. 4 and 5). Fig. 4 represents the model with the mediating effect of brand trust and Fig. 5 below represents the model with full mediation.

The mediation effect of brand trust was tested through the assumption of Barron and Kenny (1986). According to Barron and Kenny (1986) method, among several considerations of mediating effect detection, the specific prerequisite is that there is a significant existence in the relationship between mediating variable and dependent variables (Hair et al., 2007). As shown in Table 10, in the first stage, the initial model was evaluated to detect the direct effect of exogenous and endogenous variables.

Fig. 6 shows the direct relationships in this study.

Fig. 7 demonstrates the present model with mediating effect.

In the second stage, the mediating variable is included in between the exogenous and endogenous variables whereas new two paths are added: one in between the exogenous variable and mediating variable and the second one in between the mediating and endogenous variable (Hair et al., 2007).

5. Discussion of the findings

This following section discussed the findings of this current study

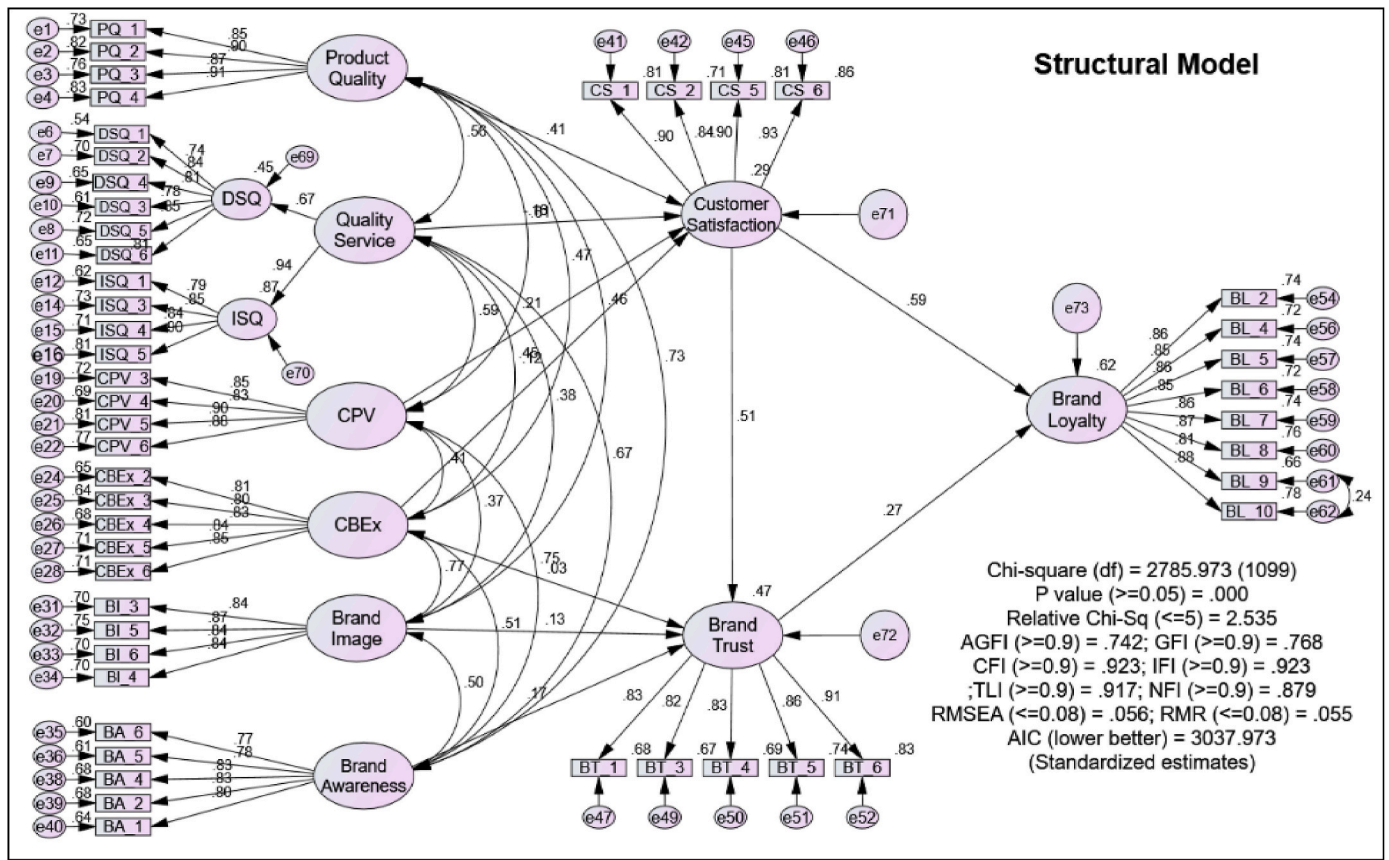


Fig. 3. Structural model.

Table 9
Path coefficient.

Hypotheses/Paths		Unstd. B	Std. β	C.R	P-Value	Result
Product Quality	→ Customer Satisfaction	0.422	0.406	6.649	***	Accepted
Quality Service	→ Customer Satisfaction	-0.199	-0.157	-2.366	0.018	Accepted
CPV	→ Customer Satisfaction	0.256	0.211	3.399	***	Accepted
CBEx	→ Customer Satisfaction	0.171	0.120	2.348	0.019	Accepted
CBEx	→ Brand Trust	0.035	0.028	0.417	0.676	Rejected
Brand Image	→ Brand Trust	0.143	0.134	1.970	0.049	Accepted
Brand Awareness	→ Brand Trust	0.156	0.174	3.372	***	Accepted
Customer Satisfaction	→ Brand Trust	0.436	0.512	10.628	***	Accepted
Customer Satisfaction	→ Brand Loyalty	0.510	0.591	12.425	***	Accepted
Brand Trust	→ Brand Loyalty	0.270	0.267	6.035	***	Accepted

based on each hypothesis and connected with the current literature:

5.1. Hypothesis 1

The study findings showed that the first hypothesis (H1) was significant. It product quality of electronic home appliances was significant to customer satisfaction, which supports the findings of previous researchers (Gök et al., 2019; Lin et al., 2018). Hence, those customers who reside in developing countries (like India, Pakistan, Afghanistan, Brazil, Benin, Botswana, raq, Laos, Malaysia, Maldives, Mongolia, Myanmar, Nepal, Philippines, Sri Lanka, Thailand, etc.) find better quality products in durability and performance. Buying behavior in developing countries almost similar in case of selection of product quality. A study Zayed et al. (2022) showed that buying pattern and consideration among these developing countries are almost same. satisfaction. Ismail et al. (2012) conducted a research to estimate consumer’s preference of multinational brands over local brands. That study

indicated that product quality was the major construct the consumers perceived.

5.2. Hypothesis 2

The study adopted service quality as delivery service and installation service for electronic home appliances. In hypothesis H2, the result showed that service quality was negatively associated with satisfaction. This indicates that customers who reside in a developing and least developing countries fear increased prices if the service level increases, e.g. availing delivery service and installation service may increase the price. Previous studies (Chinomona et al., 2013; Koyuncu et al., 2014; Kondasani & Panda, 2015; Zameer et al., 2015; Ayo et al., 2016, Bapat, 2017; Oh & Kim, 2017; Keshavarz & Jamshidi, 2018) showed positive relationship, however, a negative relationship is very rare which is obtained in the. This negative relationship is because of a fear that the installation and delivery service may increase the selling price in

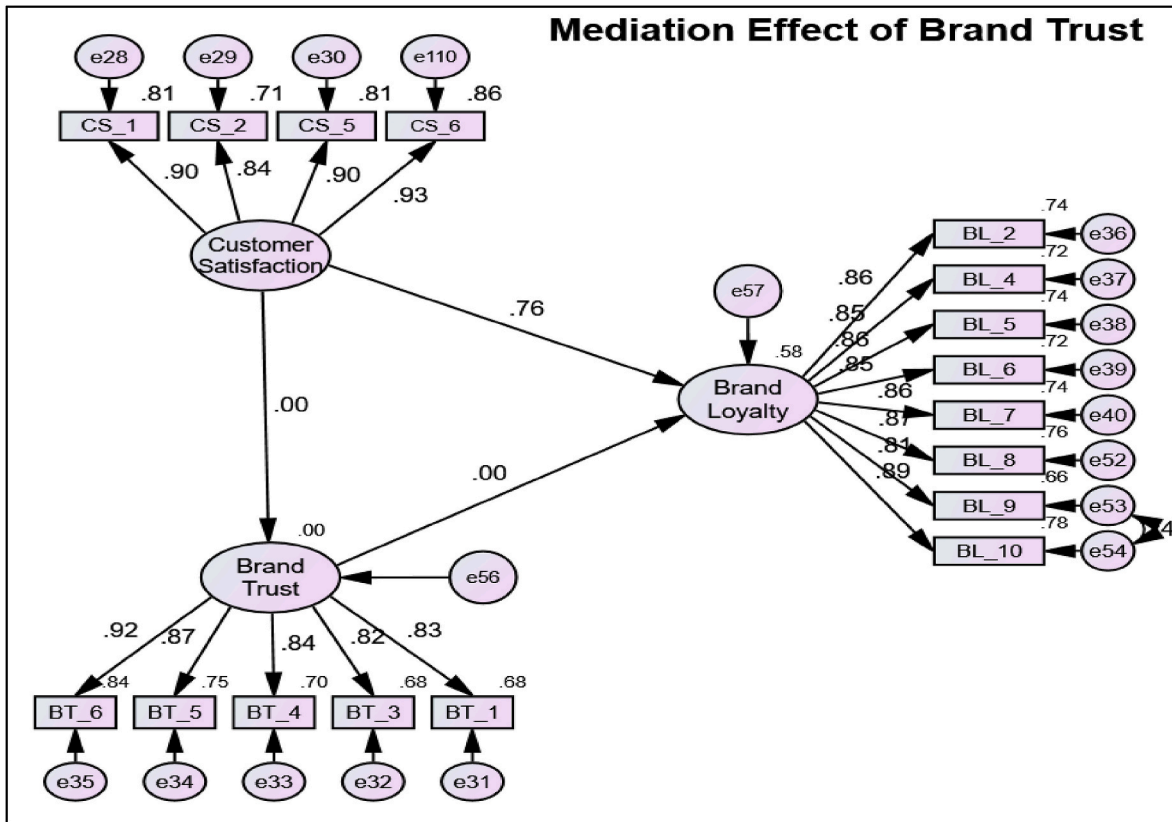


Fig. 4. Mediating effect of brand trust.

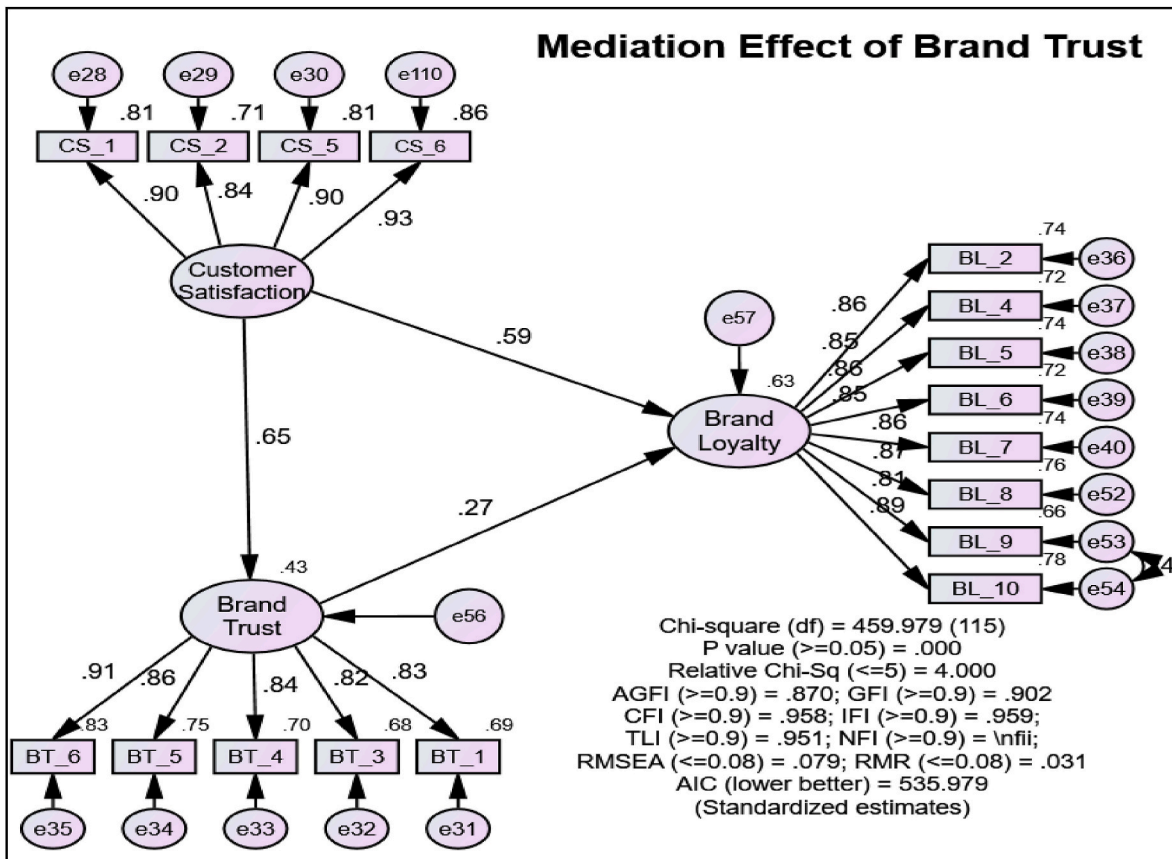


Fig. 5. Full mediation.

Table 10
Mediation effect of brand trust.

	Beta	P value	LB	UB	Mediation of Brand Trust
Direct Model					Total Effect: 0.764
CS→BL	0.764	0.000			Indirect Effect: 0.175
Mediation Model					Indirect Effect: 0.175
CS→BL	0.589	0.000			Effect: 0.175
St. Indirect Effect	0.175	0.000	0.095	0.283	22.90 %

*VAF: 0 %–20 %, No Mediation; 20 %–80 %, Partial Mediation and 80 % < VAF, Full mediation (Hair et al. 2017).

*VAF: Indirect effect/Total Effect X 100.

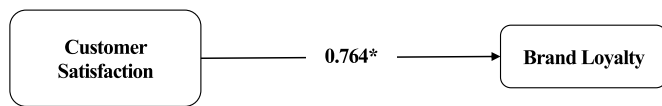


Fig. 6. Model without mediator.

Bangladesh. Besides, Bangladeshi customers can carry their products by own and do not want to wait for delivery. Besides, installation and delivery may not be served on time. In developing countries, customers carry their products from the shops using their vehicles and install by themselves to save money. Thus, it is insignificant.

5.3. Hypothesis 3

The third hypothesis (H3) showed perceived value was significant to customer satisfaction. The finding is similar to those of previous studies (Ayo et al., 2016; Chen & Chen, 2010; Fazal & Kanwal, 2017). It implies that customers are conscious and concerned about expectations of the products and the outcome from the product, e.g. the value for their money (price paid for the home appliances). If customers consider that they win in the purchase of the electronics home appliance they will be happy about the product and the brand. Bangladeshi customers are culturally price-concerned and cautious. They consider how much money they pay and how much benefit they get. They expect that their desired brand’s home appliances are of reasonable and competitive price and high service-oriented. They also want to relax and be safe in investing their money for electronics home appliances by considering that their spending values their money. In the light of expectancy disconfirmation theory, customer satisfaction derives while consumers feel

that their spending is worthy. The result showed that customer perceived value is a significant predictor of customer satisfaction. As a result, the expectancy disconfirmation theory supported this study’s finding. One study done by Uddin & Akhter (2012) explored the perceived value that influenced mobile phone operators’ satisfaction in Bangladesh. There are some other reasons for being this relationship significant. Low income and price concerned people in Bangladesh expect that the brand products, especially a foreign brand such as Sony, Philips, LG, GRES, sharp, etc. provide quality, durable and lower-priced products their requirement and last long. They perceive that this product will meet functional quality and psychological satisfaction that their investment in purchasing these electronics branded appliances supercedes expectation and increases social status.

5.4. Hypothesis 4

In the fourth hypothesis (H4), customer brand experience influences customer satisfaction positively and significantly. This finding corresponds with Chen et al. (2015) and Unyathanakorn and Rompho (2014), among others. The consensus is that the brand experience that a customer gains during and after using the branded products (electronics home appliances) influences their satisfaction. Among them, Hu et al. (2009), Kim et al. (2013), Chen & Lin (2015), Ramseook-Munhurrun et al. (2015), Unyathanakorn and Rompho (2014) are remarkable. They make a consensus that brand experience that a customer gains during and after using the branded products (electronics home appliances) influences his/her satisfaction. The assumption of expectancy-disconfirmation theory explains a similar outcome that positive experience generates satisfied customers. With the focus of trust and commitment theory, it is observed that experienced customers become delighted and contented with the brand. Hirata (2019), Davras and Caber (2019), and Broetzmann et al. (1995) stated that customers purchase electronics home appliances to meet their requirements and use these products. They also stated that using branded products gives positive pleasure, experience, and attitude. This pleasure indicates that the positive experience leads to customer satisfaction (Javalgi et al., 2014; Gligor et al., 2019). Similarly, customer experience provides an attitude such as happiness among the customers (Hamzah & Shamsudin, 2020).

5.5. Hypothesis 5

In the fifth hypothesis (H5), customer brand experience is not significant with respect to brand trust. This finding is inconsistent with previous research, wherein earlier relationships were discovered to be significant. The users of electronics home appliances do not always depend on experience; instead, they trust the brand from their belief that the preferred brand will ensure higher product quality for functional

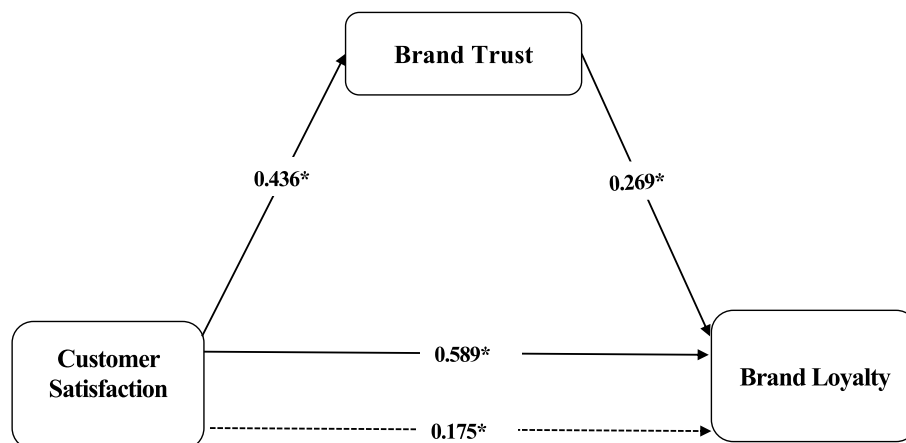


Fig. 7. Model with mediator.

service, will render better customer service, and provide value for their money. In many cases they have no chance to test the items prior to purchase. Steenkamp (2019) warned about flopping brand trust in the last decades. As a result, the lack of trust is also a major concern in the market of physical products.

5.6. Hypothesis 6

Hypothesis 6 (H6) was significant by showing that brand image has an influence on brand trust. This finding is consistent with previous research (Chen & Chen, 2010; Flavián et al., 2005). Brand image creates a favorable picture of brands in the mind of customers and builds reliability in the brand. The name, structure, and country of origin of that brand forms confidence and trust in the customer's minds. The previous study proved that this result is consistent with many scholars (Flavián et al., 2005, Mukherjee & Nath, 2003). Later, Chen (2010) also affirmed a similar result as this study revealed. Other authors like Cretu & Brodie (2007) and Yang et al. (2017) explained that brand image is a significant predictor of brand trust, indicating a favorable picture of a brand that a customer keeps in mind build a faith on the particular brand (company).

5.7. Hypothesis 7

Similarly, brand awareness is significant to brand trust (H7). This result is consistent with previous studies (Balaji, 2011; Oktiani & Khadafi, 2018). This implies that customers remember the brand and can recall when they need an electronic item. Customers can easily identify world-famous brands. Customers can even recommend the name to their friends and family members. Several researchers in their study proved that this result is consistent with many scholars (Balaji, 2011; Esch et al., 2006; Kang, 2000; Oktiani & Khadafi, 2018). Aaker (1996) regards brand awareness as the presence of the brand in customer minds. Holdford & White (1997), Abosag et al. (2006) suggested that the relationship between customer and brand (company) facilitate the customer to take risk situation of buying a branded product with a significant amount; in return, company ensures the quality product and keep the faith of customers. This win-win situation for both partners builds a strong and long term relationship.

5.8. Hypothesis 8

Hypothesis 8 (H8) is supported in this study in that satisfaction has a significant effect on brand trust, which endorses the results of previous studies (Hanaysha & Abdzullah, 2015; Oktora & Achyar, 2014). In purchasing home electronic appliances, customers expect that their needs will be fulfilled with this preferred brand product, and during usage, they believe that their purchase is safe and profitable. From the branded electronic items, customers believe that they get what the company promises, and customers purchase more products when they need it. Customers build trust in the brand of electronics home appliances to be satisfied with these products and maintain a long term relationship since they fulfill their needs using those products (Zhou et al., 2012). Electronics home appliances are expensive items and need after-sale service. The after-sale service needs a longer period. Therefore, customers and brands are normally in a long term relationship. Satisfied customers have a strong faith that the performance of the products will be expected. Ekinici et al. (2003) mentioned that being satisfied after consuming a brand, customers will generate a good attitude toward the specified brand, which leads to long term relationships (resulting in brand trust). Echoing with others, Richard Chinomona et al. (2013) illustrated that the higher level of customer satisfaction would form a greater level of brand trust.

5.9. Hypothesis 9

Hypothesis 9 (H9) assumes that satisfaction affects loyalty

significantly. That is, the purchasers and users of electronic home appliances were more likely to be loyal to a particular brand. The revealing finding is consistent with past studies (Anisimova et al., 2019; Yang et al., 2016). Satisfied consumers possess a favorable attitude to a brand and intend to repurchase an electronic item from a similar product array. Happy customers reduce their search costs and perceive risk by being loyal to their desired brand. The revealing finding is consistent with past studies that customer satisfaction positively and significantly impacts brand loyalty (Askariadzad & Babakhani, 2015; Hashim & Tan, 2015; Karineraiesha et al., 2015; Kuo & Feng, 2013; Yang et al., 2016). It implied that the satisfaction of users and purchasers of electronics home appliances propel to loyal to the brand. The finding is similar to past studies. Uddin (2013) found in his study on electronics home appliance in Bangladesh that customer satisfaction affects brand loyalty. This findings are also similar to those of other developing countries like India, Myanmar, Nigeria, Ghana, etc.

5.10. Hypothesis 10

The final direct effect of brand trust on brand loyalty (H10) was found to be impactful. This means that buyers and users of these household appliances having reliability on a specific company become loyal with any particular company. This result is similar to past studies where it was found that brand trust is positively and significantly linked with brand loyalty ((Melewar et al., 2017; Ong et al., 2018; Reydet & Carsana, 2017; Susanty et al., 2017). When the users of home appliances have assurance about the brand (Boateng et al., 2016), it reduces the uncertainty of customers and increases the propensity of repeated purchases in developing countries. This reduction of uncertainty generates a positive attitude towards a company (attitudinal approach) and increases repeated buying (behavioral approach).

5.11. Hypothesis 11

The intervening impact of trust is tested on the association between satisfaction and trust. The result implies that satisfied customers are more loyal once they trust the brands. Menidjel et al. (2017) found that trust is a bridge where satisfied customers become more loyal when they place trust in the brand for a long term and consistent association. Their finding is consistent with Anisimova et al. (2019), Askariadzad and Babakhani (2015), and Wah Yap et al. (2012). Electronics household products and their performance satisfy the customers, and if the products are perceived as safe and reliable, those customers will show greater loyalty. This finding is consistent with the finding of (Setyawan & Kussudiyarsana, 2015; Başer et al., 2015). Shah Alam & Mohd Yasin (2010), Mabkhot et al. (2017) also found that brand trust plays mediating role. Delgado-Ballester et al. (2003) mentioned that as brand trust is a symbol of security obtained through interaction with better brand customers, the users of electronic items accept the brand reliable and responsible. Customers in developing countries who assess the electronics home appliances positively and reliably are more likely to be satisfied. Once they are satisfied, eventually, they preferred to be loyal to the brand. Besides, the tendency to be loyal will expedite and sustain if customers feel secure, safe, and faithful using these products.

6. Implications

6.1. Theoretical implications

Replication of these findings by researchers in a wider variety of contexts such as countries and cultural settings, for instance, using a large population from developing country contexts is important. The current study findings have therefore made a significant contribution to literature in consumer durables. The outcomes provide interesting insight that enables greater understanding of the indicators of brand loyalty; and the study revealed evidence that brand trust plays a

significant mediating role in the relationship between customer satisfaction and brand loyalty.

The conceptual models developed on 10 constructs of 49 items in the electronics home appliances industry, may establish a new integrated framework to better understand and explain that trust has an intervening impact on the association between satisfaction and loyalty. Importantly, this research accentuates two dimensions of quality of service relevant to electronics home appliances, namely delivery service and installation service. This makes a significant contribution to the body of knowledge in household context research. Therefore, the relationship between customer satisfaction and brand trust with brand loyalty and the mediating role of brand trust between satisfaction and loyalty was investigated. This research showed an empirical assessment of confirmation of the expectancy disconfirmation theory, trust and commitment theory, the reasoned action theory, and brand loyalty theory into the new electronic home appliances industry context. The findings have supported the assumption of these theories in a new context and industry, specializing in a developing country like Bangladesh, where there is a large and diverse population of potential customers. This study is a confirmatory study, which matches the assumption expectancy disconfirmation theory (EDT).

Brand loyalty is comprised of attitudinal and behavioral in nature. This study did not distinguish between attitude and behaviour. However, it was rather, assessed collectively, which falls within the loyalty theory. Behavioral measures grounded on solitary observations always encompass several explicit elements. An attitudinal predictor is said to link to the behavioral criterion in such a way that the attitudinal entity is indistinguishable in all the four rudiments with the behavioral object. They were not because of direct comparisons of the effects yielded by the variations in the degree of correspondence. Therefore, the attitude of customers of electronic home appliances influenced the repurchase intention and actual purchase behavior of Bangladesh consumers, which falls within TRA theory.

6.2. Managerial implications

The study contributed from a practical perspective. A consumer and a company need to establish a strong relationship. The study findings indicate that satisfaction and the trust of a customer have a high impact on the loyalty of a brand that they purchase and use. Thus, managerial actions are suggested in enhancing the satisfaction level of a customer and in developing trust (reliability) in the brand among the customers. Again, customer satisfaction depends on the product quality, customer service (after-sales service-delivery and installation service), customer assessment of purchasing and using the appliances, and their experience. Another side of the coin, customer brand trust is formed with their experience (purchasing and using), brand image (brand reputation, strength), and brand awareness (customer recognition and memory).

The marketing managers should concentrate on continual development of products based on customer needs (expressed and latent needs), their ever-changing behavior by confirming new color, shape, size, convenience, durability, and availability. Importantly, the marketing managers should use value-driven and pull strategies. Delivery service and installation service should be set at a reasonable price, and the customers should be assured that these services should not increase the price of the product. However, delivery service will save time and money and reduce product damage and increase durability. As a customer's perception about the product price and the usage benefit, through advertising or in other media the company must confirm that dissatisfied customers will be honored and compensated for the true cases. This assurance enhances the perceived value and develops trust and reliability among the buyers and users of electronic home appliances. The company should assess the experiences of buyers and users of electronics home appliances through collecting complaints against them, recommendations and comments regarding the products. The practicing managers can arrange a focus group discussion among the

selected customers and extract their valuable opinions, including the customers' friends and family members' opinions on a regular basis. The organization may advertise the company goodwill, enhance the social responsibility activities, and confirm consumers' welfare, and produce and advertise eco-friendly products. As brand image (corporate image) and brand awareness are strong predictors of brand trust, the company and practicing managers should emphasize the brand positioning in customers' minds. As Bangladesh is a disaster-prone country, thus, companies may take a stand beside the affected people by providing food, clothes, sanitation, pure drinking water, primary treatment and basic education. In the winter season, many people suffer from the cold and lack of food. The business organization takes necessary steps to help these people by providing clothes. These social welfare activities will uphold the image of the brand and create trust in the customer's minds. The business organization to develop loyalty program through membership token, points, etc. The company can arrange loyalty in the form of free items for bulk purchase, membership cards with discount rates, annual competition or raffle draw etc. Those customers who repurchase will get points as well as those who recommend others, which will be considered in the next purchase. The company can select some customers randomly and offer them an annual tour in the country or outside the country. These activities and steps will encourage existing and potential customers to be loyal and patronize the company.

7. Limitations and recommendations for future directions

7.1. Limitations

Like other research, this study is not beyond having limitations. These limitations are either related to sample or sampling and sample size, methodological or theoretical choice. A total sample of 486 respondents was gathered in Dhaka, where around 23.00 million people reside. It is very tough to choose the representative sample from this huge population who are very diversified because people come there from different parts of the country and stay there. With respect to the sampling technique, this study did not use a probabilistic technique, which has sampling errors that may affect the result of any study.

According to the demographic profile, there were more males than females (gender issue). In the age category, there were a significant number of respondents who participated in this study who were below 40 years. The respondents were younger as the average age (life expectancy) is 72 years (World Bank, 2020).

The study used the aspects of brand loyalty, namely attitudinal loyalty and behavioral loyalty, together. The theoretical ground might be enriched by introducing both attitudinal loyalty and behavioral loyalty separately. Several significant constructions are not considered here such as price, brand knowledge, repair service, cashback service, online customer service, replacement service, discount service, price, marketing mix, brand commitment, brand attachment, brand attitude, and word of mouth. This study focused only on high-involvement products such the electronics home appliances.

7.2. Further directions

Thus, in future research more diversified respondents might be selected in a more scientific way. To delimit demographic issues, more representative respondents might be selected by focusing on gender issues, age categories, purchasing power or capacity, location, income, and person-role in the family. Future study might introduce attitudinal loyalty and behavioral loyalty separately. These significant constructs will need to be considered in future research: price, brand knowledge, repair service, cashback service, online customer service, replacement service, discount service, price, marketing mix, brand commitment, brand attachment, brand attitude, and word of mouth. Future researcher might work on low-involvement products (i.e., soft drinks and fruit juices).

8. Conclusions

The study investigated the impact of brand trust and customer satisfaction on brand loyalty. This study successfully tested several hypotheses to meet the objective of investigating loyalty for household electronics items in developing countries like Bangladesh. The findings are a comprehensive representation of brand loyalty for populous countries. The predictors-product quality, customer perceived value and customer brand experience significantly affect customer satisfaction, but quality of service was negatively significant on customer satisfaction. Other predictors-customer brand experience, brand image, brand awareness and customer satisfaction were significant on brand trust. Brand trust partially mediated the relationship between customer satisfaction and brand loyalty. Besides, customer satisfaction and brand trust were significant for brand loyalty. These findings, analyzed by the CB-SEM technique, were revealed from the data of 486 Bangladeshi customers who were asked about electronic appliances. Theoretical and managerial grounds were enriched by these findings, although there are several limitations that might be solved in future research.

CRedit authorship contribution statement

Md Uzir Hossain Uzir: Writing – review & editing, Writing – original draft, Visualization, Software, Methodology, Investigation, Data curation, Conceptualization. **Zakari Bukari:** Writing – review & editing, Writing – original draft, Visualization, Validation, Software, Methodology, Investigation, Formal analysis, Conceptualization. **Siti Norida Wahab:** Writing – review & editing, Writing – original draft, Visualization, Validation, Methodology, Investigation, Formal analysis, Conceptualization. **Ishraq Jerin:** Writing – review & editing, Writing – original draft, Visualization, Validation, Resources, Formal analysis, Data curation, Conceptualization. **Tareq Rasul:** Writing – review & editing, Writing – original draft, Visualization, Software, Investigation, Formal analysis, Conceptualization. **Mohammad Bin Amin:** Writing – review & editing, Writing – original draft, Visualization, Validation, Supervision, Resources, Project administration, Funding acquisition, Conceptualization.

Consent statement

The researchers informed and collected written consent from each of the respondents involved in this research before being agreeing to participate. Moreover, approvals were also collected from each organization where the respondents worked during the period of data collection. Thus, informed written consent to participate was obtained from all the participants in the study.

Ethical statement

The current study is a quantitative and survey research based on primary data. This primary data for this research has been collected through survey questionnaires. Initially, the first author started this study from his Doctor of Philosophy (PhD) thesis and collected data. For conduction of the survey data collection in this research, ethical standards were maintained to the highest possible extent. Before conducting the survey, the researchers applied to *the Research Ethics Committee, Putra Business School, UPM, Malaysia*; Ref: *PBS/PhD/PBS18123252*. The sampling details, and ethical considerations were assessed, including all ethical concerns and guidelines the committee approved and provided the certificate for further survey process.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Appendix A. Supplementary data

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