Proposing a Comprehensive Model to Explore and Evaluate the Factors Influencing Egyptian Consumers' Brand Loyalty: An Empirical Study in the Home Appliances Sector

Mostafa Ahmed Shalash
PhD, Fellowship, MBA
Faculty of Financial & Administrative Sciences, Pharos University, Alexandria, Egypt

Abstract: *The home appliance industry in the Egyptian market is currently witnessing rapid growth with very intense competition. In light of this fierce competition, the concept of brand loyalty has emerged as an important issue that should be carefully studied. Although manufacturers realize the importance of this concept, there is still no agreement on the factors that influence it. Furthermore, a lot of previous studies have examined the role of mediator variables in generating brand loyalty and conceptualized these mediating variables as a necessary commitment. However, there may be no need for such intermediary factors, rather the relationship can be direct between the antecedents of brand loyalty and brand loyalty. As such, this study aims to (1) develop an integrated conceptual model to discover the factors that Egyptian consumers rely on to build their loyalty in the context of home appliances, and (2) detect the relative importance of each factor in achieving overall consumer brand loyalty. To fulfill these objectives, the study proposes six factors namely brand trust, brand image, after-sales service, customer satisfaction, perceived quality, and brand experience. The novelty in this study lies in proposing one integrated model that includes the main determinants responsible for brand loyalty and studying them together instead of studying the influence of each determinant separately as in previous studies. In addition, till now there is no clear insight into whether the proposed factors have a direct or mediating effect on brand loyalty; this research attempts to answer this controversial question. For this purpose, the survey method is used as the primary data collection. 400 questionnaires were randomly distributed to home appliance buyers living in Alexandria city. The collected data were analyzed statistically using SPSS software. Correlation analysis, multiple linear regression, and stepwise regression were used to reach our results. The main findings of the study indicated that there is a significant and direct relationship between all proposed factors and consumer brand loyalty. However, after-sales service, perceived quality, brand trust, and customer satisfaction are notable determinants and have the highest relative importance on Egyptian consumer brand loyalty concerning home appliances.*

Keywords: Brand, Brand loyalty, Repeat purchases, Brand trust, Brand image.

JEL classification: L81, M31

INTRODUCTION

In recent years, the Egyptian home appliances industry has faced intense competition due to the multiplicity of companies producing home appliances and the diversity of products. Because of this increasing competition between brands offered by home appliance companies, brand loyalty comes as a solution to create a strong and long-term competitive advantage. Therefore, brand agents and marketers struggle to maintain their customers' loyalty to the brand and try to avoid competitors taking over these customers.

Many studies have attempted to explore the factors that lead to brand loyalty but have not been able to reach a common consensus, especially concerning home appliances. Most of these studies focused individually on the role of some factors that lead to brand loyalty. For example, the impact of brand trust on brand loyalty was studied by Pivato et al. (2008), service quality by Bell et al. (2005), brand awareness by Davis et al. (2008), brand image by Baumgarth and Binckebanck (2011). On the other hand, studies that fully and exclusively examine all the factors are rare. Based on this, it can be concluded that there is no comprehensive model that contains all the factors that lead to consumers' loyalty to a particular brand. So, this research provides and examines in depth a comprehensive model to explore the factors influencing Egyptian consumer brand loyalty concerning home appliances to fill this research gap.

Creating brand loyalty is one of the most widely used strategies to achieve business success. Therefore, it is crucial to understand the factors that make Egyptian consumers loyal to a particular brand of home appliance and prefer to buy it over another brand. Yaghoubi et al. (2017) define brand loyalty as a positive feeling towards a brand and an intense dedication to repeatedly purchasing the same product regardless of competitors' actions or changes in the environment. Griffin (1995) stated that brand loyalty is one of the key criteria that will help businesses to survive and develop because the enterprise continues to make a profit for as long as it keeps a loyal customer. He adds brand loyalty can reduce marketing costs and new customer acquisition costs. In addition, Rather et al. (2018) argue that brand is a very important factor in building long-term relationships with a company's customers, which ultimately ensures the continued profitability of this company. In the same context, Atilgan et al. (2005) declared that brand loyalty has several important strategic benefits to the firms e.g. gaining high market share, reducing marketing costs, strengthening the brand to competitive threats, and a bulwark against deleterious price competition. Also, Mbama and Ezepue (2018) noted that organizations can increase their profits by decreasing the potential immigration of their customers to competitors which can be done by creating brand loyalty among existing customers.

The highly competitive environment in the home appliances industry makes brand loyalty a valuable area of study. Therefore, this research seeks to provide a comprehensive model containing the most important factors on which the Egyptian consumer relies to determine his loyalty to the brand in the context of home appliances. The results of this study are expected to provide insight to brand agents as well as marketing

managers to design the appropriate marketing strategies and approaches for developing long-term brand loyalty and thus increase sales and profits.

Home Appliances Market

Globally, the home appliances market size was valued at USD 535.4 billion in 2024 and is expected to reach USD 684.5 billion by 2029 with a compound annual growth rate (CAGR) of 4.9%. In addition, this market is expected to witness significant growth in the coming years driven by increasing consumer spending. This rise in spending can be attributed to the growth in incomes and urbanization. As a result, many developing countries are expected to undergo rapid urbanization and witness an increase in purchasing power, leading to a surge in demand for home appliances (Mordor intelligence reports. Retrieved November 9, 2024, from https://www.mordorintelligence.com/industry-reports/global-home-appliances-market-industry).

In Egypt, economic reform and increased trade agreements have led to the development of the home appliances market, which has led to many brands of home appliances in the Egyptian market. As a result, Egyptian consumers can choose from a wide range of products and make the best choice according to their needs. The Egyptian home appliances market size was valued at USD 4.48 billion in 2024 and is expected to reach USD 6.83 billion by 2029 (Egypt major home appliances market size report. Retrieved November 13, 2024, from https://www.mordorintelligence.com/industry-reports/egypt-major-home-appliances-market). In the same context, one of the reports concerned with the home appliances industry in Egypt indicated that the demand for home appliances in Egypt has been steadily increasing due to the high standard of living, increasing income, and increasing job opportunities for women. (Statista reports. Retrieved November 13, 2024, from https://www.statista.com/outlook/cmo/household-appliances/egypt). In addition, the Egyptian government has implemented several policies to support domestic manufacturing by providing subsidies and tax incentives for local manufacturers and investing in infrastructure. All these procedures led to increasing home appliance manufacturers, brand diversity, and created increased competition. As a result, manufacturers are trying to retain their customers and increase their market share. This makes studying how to enhance and stimulate brand loyalty of Egyptian consumers imperative to retain their customers and prevent them from switching to other competing products.

Brand concept

Brands have an important role in the business world and are the focus of most marketing strategies (Kapferer, 2004). The main role of a brand is to help the consumer differentiate products and services from competitors. According to Kotler and Keller (2012), a brand is a term, sign, symbol, or design intended to identify a seller's products from those of others, especially competing products. Aaker (1991) stated that a brand is a distinguishing name or symbol that aims to identify the goods of one seller or a group of sellers and to differentiate those goods from those of competitors. According to Rajput et al. (2012), a brand builds a psychological image in consumers' minds and leads a potential buyer to an actual buyer.

Brands are important for both consumers and producers. For consumers, branding facilitates the purchasing decision process, reduces the risk in purchasing, and assures quality (Kapferer, 2004). For producers, branding develops loyal customers and creates entry barriers for other competitors (Keller et al., 1998). In addition, branding positively affects the demand for the product, leading to greater market share and profitability (Chaudhuri & Holbrook, 2001). As brands are of great significance to buyers and sellers, it is crucial to deeply study the reasons that lead to consumer brand loyalty.

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Home appliance manufacturers all around the world have an increasing interest in creating loyalty as this will ultimately lead to a greater market share. Marketers have started emphasizing strategies to retain loyal customers rather than attracting new ones (Aaker, 1992). To achieve this strategy, brand loyalty plays a great role and has become an interesting area of research for academicians and business owners (Kumar, 2009). Companies in the home appliances market find customer retention a great challenge, as these appliances are not purchased frequently and last longer until replacement is required. Several studies have shown that companies with loyal customers have acquired greater market share and higher returns on investments (Denoue and Saykiewicz, 2009; Singh and Pattanayak, 2014).

While previous literature shows that the factors affecting consumer brand loyalty have been studied for many products, studying the factors that affect Egyptian consumer loyalty concerning the home appliances market still needs more attention and in-depth study. Therefore, this study attempts to investigate the impact of the proposed factors on Egyptian consumer brand loyalty in the context of home appliances to fill this gap in the literature.

Brand trust

Building and maintaining brand trust is essential to competitiveness in today's business world (Surapto, 2019). When consumers have confidence in the brand, their perception of risk is reduced, making them decide to repurchase the product (Kumar and Advani, 2005). As the competitive environment changes, firms seek creative ways to remain competitive. One of these ways is developing brand loyalty for consumers through trusted brands. Brand trust is considered a bridge between buyer and seller (Delgado and Munuera, 2001). According to Morgan and Hunt (1994), trust is the key construct in a brand for developing a long-term relationship with customers.

Shin et al. (2019) defined brand trust as the emotional state of a person feeling secure while interacting with a brand. Doney and Canon (1997) stated that brand trust is the ability of a brand to consistently deliver on its commitments. Chaudhuri and Holbrook (2002) added that brand trust decreases the perceived risk of customers while choosing the brand, affects buying behavior, and accelerates the purchasing decision. In addition, Lassoued and Hobbs (2015) stated that brand trust creates a positive feeling for the customer.

Several studies have identified the influence of brand trust on brand loyalty. Menidjel et al. (2017) declared that brand trust is one of the main determinants of brand loyalty. In the same context, Singh et al. (2012) found that brand trust is positively related to brand loyalty. Also, it is determined that brand trust affects brand loyalty in the studies of Sung and Kim (2010) and Anwar et al. (2011). O'Shaughnessy (1992) suggested that brand loyalty is driven by trust in the brand, and thus trust is the basis of a customer's interactions with the brand. Brashear et al. (2003) concluded in their study that brand loyalty is directly related to trust. In the same context, Molinillo et al. (2017) found that brand trust was a significant factor in shaping loyalty across diverse brand contexts. Based on the above discussion, it is hypothesized that:
H1: Brand trust has a significant effect on brand loyalty

Brand Image
Brand image is the first word or image that comes to mind when a certain brand is mentioned. Rahim et. al. (2010) stated that the brand image can be like a human being with unique characteristics. Mohajerani and Miremadi (2012) described the brand image as the general impression that consumers have about the product, while Mishra & Datta (2011) referred to brand image as the set of perceptions for a specific brand that plays a vital role in the consumer's purchasing decision process. In simple terms, brand image is something about product features, design, packaging, and the characteristics that make it different and unique from other products (Abbas et al., 2021).

In one study conducted by Nguyen and Leblanc (2001), they found that brand image has a significant effect on brand loyalty. In the same context, Sondoh et al. (2007) stated that marketers should focus on the brand image to achieve brand loyalty. Also, Johanudin et al. (2016) concluded in their study that brand image has a significant influence on brand loyalty. In line with these findings, Shehzad & Zehra (2013) pointed out in their study that brand image is one of the important steps to reach brand loyalty. In addition, Kuusik (2007) argues that positive brand image is the most important characteristic influencing brand loyalty. studies by Erkmen and Hancer (2019) revealed that developing brand image can significantly impact brand loyalty. Han et al. (2019) agree with this notion and point out that brand image can positively contribute to enhancing brand loyalty in the marketplace. Based on the literature review, this study develops the following hypothesis:
H2: Brand image has a significant effect on brand loyalty

After-sales service
With the rapid growth of the home appliances industry, and as more brands enter the market to meet the increasing demand for these appliances, the importance of reliable and efficient after-sales service cannot be overlooked. According to Tjiptono (2015), after-sales service is an effort made by a company to meet customer expectations for the services it provides so that it can survive in the market and gain customer trust. Rigopoulou et al. (2008) illustrated these services as delivery and installation services. The delivery service means how smoothly and efficiently the products reach their destination without damage. Similarly, installation service means accurate installation and correct operation as some home appliances

need proper installation to avoid damage. By paying attention to the quality of both delivery and installation services, the seller can ensure brand loyalty.

Dabholkar et al. (2000) confirm the reality that after-sales service helps in establishing consumer brand loyalty. Moreover, Chinomona et al. (2013) revealed that after-sales service quality and brand loyalty are significantly associated. In a study conducted by Boonlertvanich (2019), the results showed that there is a significant association between provided after-sales service and brand loyalty. Rejikumar et al. (2019) argue that the quality of after-sales service is considered an essential factor to generate consumer brand loyalty. In the same context, another study conducted by Hamzah et al. (2017) indicated the effect of after-sales service quality on brand loyalty. Dhisasmito & Kumar (2020) concluded in their study that after-sales service quality plays an important role in maintaining customers and ensuring brand loyalty. Therefore, the study hypothesizes:
H3: After-sales service has a significant effect on brand loyalty.

Customer satisfaction
Customer satisfaction is a very critical issue in advanced marketing practices. Yi and Nataraajan (2018) pointed out that customer satisfaction is an imperative strategy for all competitive businesses to survive in the market. In the same context, Luo and Homburg (2007) stated that customer satisfaction is a crucial factor in determining a company's success. Pizam and Ellis (1999) define customer satisfaction as the pleasure feeling obtained by customers when their post-consumption evaluations match their expectations. According to Kotler & Keller (2021), satisfied customers remain loyal to the brand in the long term, buy more when the company introduces new products, pay less attention to competing brands, and don't care about high prices.

The concept of customer satisfaction has received a great deal of attention over the past decades. This is simply because customer satisfaction is considered the first step on the road to brand loyalty (Oliver, 1999). Cooil et al. (2007) supported this point of view and added customer satisfaction is a precondition of brand loyalty. A study conducted by Menidjel et al. (2017) revealed that customer satisfaction significantly affects brand loyalty. Rowley (2005) stated that satisfied customers are always loyal to the brand, they usually possess a better repurchase intention for the same brand and promote it among their acquaintances. This result is confirmed in the study conducted by Ha and John (2010) where the results revealed that satisfied customers tend to repurchase the brand multiple times. In addition, Awan and Rehman (2014) carried out a study to investigate the impact of customer satisfaction on brand loyalty for durable goods. The study concluded that customer satisfaction affects brand loyalty. This result is reinforced by research from Fuentes et al. (2017) which also indicated that customer satisfaction has a direct effect on customer loyalty. Therefore, based on these findings, this study proposes the following hypothesis:
H4: Customer satisfaction has a significant effect on brand loyalty.

Perceived quality

Providing a high-quality product helps in keeping the organization in the mind of the consumer for a long time. Therefore, the organization should provide high-quality products to ensure consumer loyalty for as long as possible. In addition, perceived quality adds value to a brand in several ways, it gives consumers a good reason to buy the brand, allows the brand to differentiate itself from its competitors, and charges a premium price (Aaker 1991).

Zeithaml (1988) defined perceived quality as the consumer finding for overall superiority and distinction of a product. Aaker (1991) defined it as the superiority of a product or service with respect to its intended purpose compared to alternatives. On the other hand, Kotler et al., (2002) stated that perceived quality is the whole features and characteristics of a product or service that influence its ability to satisfy stated or implied needs.

Considering the relationship between perceived quality and brand loyalty, Pappu et al. (2005) stated that perceived quality is directly associated with brand loyalty. In a study conducted by Biedenbach and Marell (2009), it was found that perceived quality is the main antecedent of brand loyalty. This result was confirmed in the study conducted by Rubio et al. (2015), where the results showed that enhancing product quality leads to greater brand loyalty. In the same context, Coelho et al. (2018) revealed that perceived quality is an important condition for brand loyalty. Thus, this study proposes the following hypothesis:
H5. Perceived quality has a significant effect on brand loyalty.

Brand Experience

When consumers decide to purchase branded products, they consider their previous experiences (Deniz et al., 2009). Consumers are more interested in buying a particular brand because of the positive experience they feel when purchasing that brand, as brand experience can create a long-term effect in their minds (Khan and Rahman, 2015). Therefore, it can be said that the brand experience is the beginning of the relationship between the consumer and the brand, and based on this experience, his loyalty to that brand is determined thereafter. According to Brakus et al. (2009), the brand experience can be described as a consumer's feeling, behavior, and response to various brand stimuli such as shape, color, design, and ease of use which are all elements of brand-related stimuli.

In one study conducted by Arisandi et al. (2022), they found that brand experience significantly affected brand loyalty. This is consistent with a study by Shin et al. (2019) who stated that brand loyalty comes from a previous experience with that brand. In the same context, Erciş et al. (2012) revealed in their study that brand loyalty is shaped by the consumer's experience with the brand. In addition, Zucker (1986) argues that previous dealing with the brand is the key to brand loyalty. One of the studies conducted by Ong et al. (2015) showed the significant effects of brand experience on brand loyalty. This is similar to the results of the study conducted by Vazifehdoost et al. (2014) who concluded brand experience positively affects brand loyalty. Davras and Caber (2019) and Hirata (2019) found that a consumer who has a positive

experience with a particular brand will be satisfied and consequently loyal to that brand. Gligor et al. (2019) stated that brand experience influences customer happiness and consequently brand loyalty.

It is clear that brand acts as a mechanism in engaging both buyer and seller in a long-term relationship, the main input of this relationship is brand experience and the main output of this relationship is brand loyalty (Sahin et al. 2011). So, the hypothesis determined in this direction is stated as:
H6: Brand experience has a significant effect on brand loyalty

Brand loyalty
Brand loyalty is a crucial concept in the world of marketing. It is an emotional connection that customers feel towards a particular brand even when there are other available options. Brand loyalty is not just about repeat purchases of products, but creating a positive image in the consumer's mind.

According to Knox and Walker (2001), brand loyalty is a customer's commitment to a brand based on a positive attitude and is reflected in repeat purchases. In the same context, Oliver (1999) stated that brand loyalty is a deeply held commitment to repurchase a preferred brand consistently in the future despite competitors' attempts to direct customers to other products. Kotler and Keller (2009) defined brand loyalty as the commitment to patronize or repurchase a preferred product or service. Supporting this definition, Uddin (2013) explained that if a consumer buys products from the same brand systematically, it is said this individual has loyalty to that brand. Generally, brand loyalty can be defined as customers choosing the same brand, recommending it to others, not complaining about price increases, and showing immunity to what is offered by competitors (Rust and Oliver, 2000).

Brand loyalty is essential for a company's long-term success. When customers are loyal to a brand, they continue purchasing its products or services, even if other options are available. Additionally, loyal customers are more likely to recommend the brand to others which can lead to increased sales and revenue for the company. Perrier (1997) stated that up to 70 percent of a company's earnings can be attributed to the brand loyalty.

The Conceptual Framework
Based on the proposed hypotheses, the research model is presented in Fig. 1., where brand loyalty is treated as the dependent variable. The study will test six independent variables i.e. brand trust, brand image, after-sales service, customer satisfaction, perceived quality, and brand experience. These variables are believed to have influences on the dependent variable.
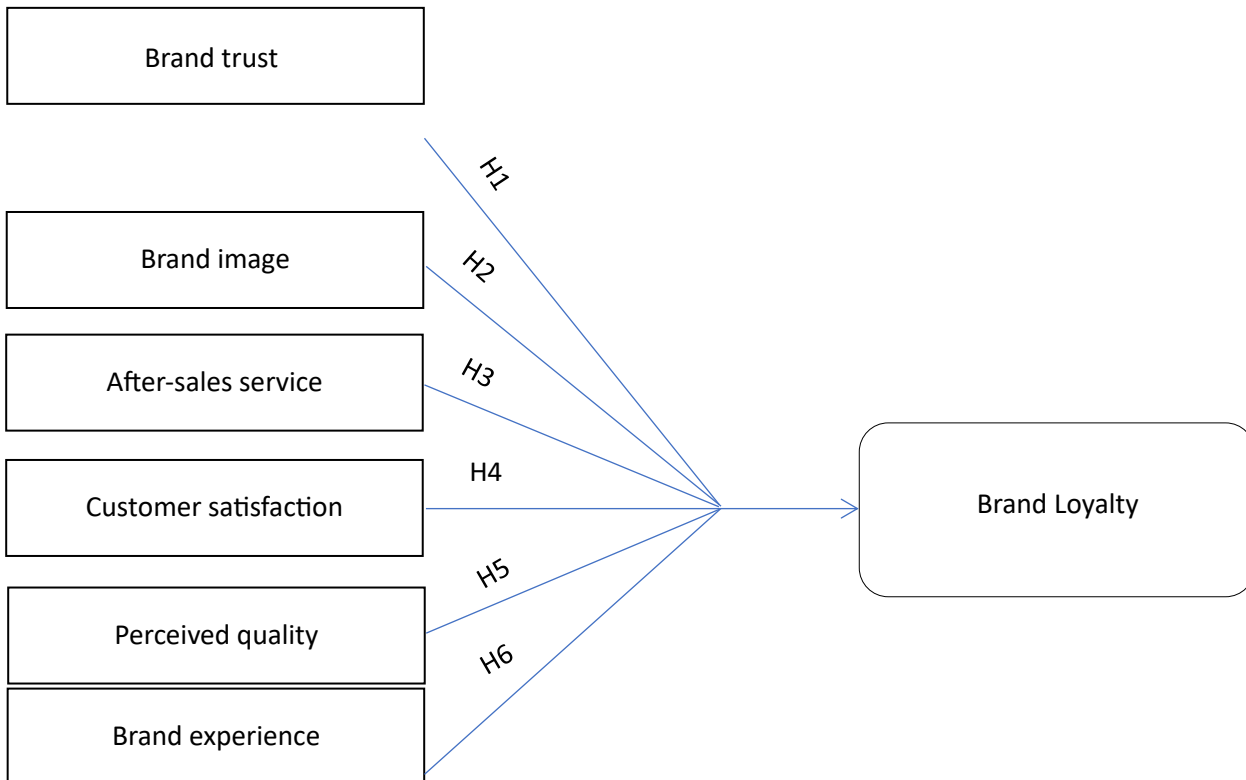
Figure1. The Suggested Research Model
Source: compiled by author

RESEARCH METHODOLOGY

This study uses a quantitative approach. It is aimed to test the presented model and explore the influence of proposed factors on consumer brand loyalty. In this regard, questionnaires were mainly used to collect the primary data from a random sample of home appliance buyers residing in the Alexandria governorate. This technique is valuable for assessing opinions and trends. Also, it is considered a good method for checking the relationship between variables by collecting quantitative data for analysis in the social sciences (Zhang et al., 2014). Furthermore, the survey approach has various benefits like a quick reach to respondents and collecting data in the given time with a high response rate. Craig and Douglas (2000) also asserted that this is the most effective tool for collecting data in marketing research. The respondents were asked to show to what extent they believe the written sentence corresponds to them and leads to their brand loyalty. This was implemented using a five-point Likert scale ranging from 1 indicating strongly disagree to 5 indicating strongly agree.

Questionnaire Design

To collect the required data for this research, the measurement scales -relating to the constructs in the conceptual model- were adopted from previous studies, and minor modifications were made to these scales to suit the research objectives. Specifically, the brand trust scale was adapted from Veloutsou (2015), the brand image scale was derived from Kremer and Viot (2012), after-sales service scale was derived from Murali et al. (2016). Concerning customer satisfaction, the scale was sourced from Rather et al. (2019), and perceived quality was measured through a scale adapted from Alwi et al. (2017). Finally, the brand experience scale was adapted from Brakus et al. (2009).

Evaluation of the Measurement Instrument

Initially, a pilot test was conducted among 30 participants to refine the data-gathering instrument. According to Malhotra (2004), the pilot test is a formal validation of the questionnaire using a small sample. Zikmund (2003) pointed out that this test helps researchers to make necessary alterations to minimize any unanticipated issues and is normally performed to test the viability of this research before implementation of a full-scale survey. This stage also involved ensuring the validity and reliability of the instrument after the required adaptation. In this regard, Kumar (2005) asserts that if the data collection tool is well-structured, valid, reliable, and founded on a suitable literature review and statistical assumptions, the findings can be generalized to the population.

Ensuring the Validity

Validity is the degree to which an instrument measures what it intends to measure (Lawrence & Martin, 2001). Schyns (2014) refers to scale validity as the extent to which the instrument accurately measures what it is supposed to measure. According to Babbie (2004), validity is the extent to which the measure accurately reflects the concept it is intended to measure. Fisher (2007) stated that the strength and accuracy of the data collection methods and analytic procedures used are called validity.

In this research, content validity has been applied to ensure that the instrument is appropriate as well as the sentences are generally understood before it is sent out on a large scale to the targeted respondents. All comments and notes received from practitioners, experts, and academics were taken into account, and accordingly, the questionnaire was reached in its final form to be distributed. For further confirmation of instrument validity, the researcher applied factor analysis using SPSS software. The results of the factor analysis are illustrated in Table 1.

Table 1: Component Matrix

Factor	Brand trust				Brand image				After-sales				Customer				Perceived				Brand			
Statement	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13	S14	S15	S16	S17	S18	S19	S20	S21	S22	S23	S24
Component	.65	.63	.81	.72	.79	.83	.67	.72	.87	.65	.77	.78	.64	.83	.72	.78	.70	.68	.64	.75	.69	.78	.79	.67

Principal Component Analysis
Source: Primary data processed.

Based on the output of factor analysis, it is clear that the questionnaire is characterized by factor validity, i.e. the sentences included in the instrument actually express the variables that are required to be measured and consequently the instrument is fully representative of what it aims to measure and the statements are generally understandable.

Ensuring the Reliability

After testing the instrument's validity, the reliability test is then carried out to ensure the internal consistency of the instrument. Miller (2005) stated that the questionnaire is considered reliable when the same or similar scores are obtained in repeated testing with the same group of respondents. In the same context, Fisher (2021) declared that reliability refers to consistency in study results when repeated under identical settings and with the same measurements. In this research, Cronbach's alpha coefficient is used to examine the reliability of the questionnaire.

According to Zikmund et al. (2013), if Cronbach's alpha falls below 0.60, then we consider the data as poor reliable; if Cronbach's alpha falls between 0.60 and 0.70, then we consider the data fairly reliable; if Cronbach's alpha is greater than 0.70, then we consider the data well reliable. Furthermore, Nunnally (1978) added that for research purposes, a Cronbach's alpha of 0.70 or higher is sufficient.

Table 2: Reliability test

Cronbach's alpha coefficient	N of items
.815	24

Source: Primary data processed.

In our study—as shown in Table 2—Cronbach alpha has been calculated as 0.815; it is a sign of the instrument's internal consistency. So, it shows the questionnaire's reliability and adds to the credibility of the study's methodology. Overall, the measurement result is satisfactory and suggests that it is appropriate to proceed with developing the statistical analysis required for the hypothesis test and evaluate the proposed model.

Sampling and Data Collection

The basic idea of sampling is that by selecting part of the population, conclusions about the entire population can be obtained (Cooper and Chindler, 2006). Due to the number of population cannot be determined with certainty, we calculated the sample size using Cochran's formula (Cochran, 1963). This sample size is based on a 95 percent confidence level assumption, with a standard deviation of 0.5, and a 5 percent error. The result of the calculation was a sample size of 384. This sample size is consistent with Krejcie and Morgan's sample size determination table (Krejcie and Morgan, 1970).

The researcher distributed 400 questionnaires to a random sample of the Alexandria governorate population who purchased different home appliance brands. Data are collected from a total of 20 shopping

malls, home appliance showrooms, and company outlets. The usable observations were 351 respondents with a response ratio of 87.75%.

The Suitability of the Collected Data for Analysis

Sampling Adequacy

The researcher applied Kaiser-Meyer-Olkin (KMO) analysis to stand on the adequacy of the sample size for analysis.

Table 3: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling		.853
Bartlett's Test of Sphericity	Approx. Chi-Square	1083.528
	Sig.	.000

Source: Primary data processed

The result of the KMO analysis is shown in Table 3 =.853. This result satisfies Kaiser's criterion for sampling adequacy (Kaiser, 1974) and confirms the suitability of the sample size.

Ensuring the Normality of Collected Data

Normality test is a statistical technique used to determine whether a given sample data follows a normal distribution or not to determine the appropriate statistical procedures for analyzing the collected data. Hair et al. (1998) stated that a normal distribution test is vital, and violating this assumption may lead to false rejection of the candidate model. In addition, Tabashnik and Fidell (2007) stated that a normal distribution test is a necessary step in the analysis if the research objective is to make inferences.

In this study, the researcher used the Shapiro-Wilk method to test the normal distribution of the collected data. According to Razalli and Wah (2011), the Shapiro-Wilk test is the most powerful test overall for all types of distribution and sample sizes. The results of their study support the results of Mendes and Pala (2003), as well as the study of Keskin (2006) that stated the Shapiro-Wilk test is the most powerful normality test. The results of this test as shown in Table 4 indicate that the collected data is normally distributed.

Table 4: Normality Tests

	Shapiro-Wilk		
	Statistic	df	Sig.
Brand Trust	.183	351	.112
Brand Image	.157	351	.164
After Sales Service	.123	351	.209
Customer Satisfaction	.146	351	.173
Perceived Quality	.194	351	.086
Brand Experience	.168	351	.138

Shapiro-Wilk Test

Source: Primary data processed

Ensuring the Absence of Common Method Bias

Common method bias can occur when both the independent and dependent variables are measured within one survey using the same response method (Kock et al. 2021). The consequences of common method bias can be detrimental to a study's validity. Harman (1967), stated that common method bias exists if the principal constructs are significantly and highly correlated (Total variance extracted by one factor exceeds 0.50).

Table 5: Total Variance Explained

Harman's single-factor test for Common method bias

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6.272	26.134	26.134	6.272	26.134	26.134

Extraction Method: Principal Component Analysis

The results depicted in Table 5 indicate that there is no problem with common method bias in this data since the total variance extracted by one factor is 26.134%, which is less than Harman's recommended threshold of 50% indicating that the model is free from common method bias and consequently the collected data are ready for further analysis.

Statistical analysis used

In the following sections, correlation analysis to discover the strength and direction of the relationship between all independent variables and dependent variable will be used. Also, multiple regression analysis will be conducted to assess the relative importance of the factors that strongly influence Egyptian consumer brand loyalty concerning home appliances, then use these variables to build an equation to predict the extent to which home appliance agents can increase Egyptian consumer brand loyalty for such appliances. All these statistical analyses will be performed using the SPSS for Windows.

Correlation Analysis

Correlation analysis is a statistical method used in research to reveal the nature of the relationship between two variables and measure the strength of their association. A positive correlation means that both variables increase with each other, while a negative correlation means that as one variable increases, the other decreases. In this study, Pearson correlation was employed to find out the strength and direction of the relationship between the dependent variable (brand loyalty) and each one of the proposed independent variables. The results of the correlation analysis are illustrated in Table 6.

Table 6: Results of correlation analysis *(r)*

		Brand Trust	Brand Image	After Sales	Customer Satisfactio	Perceived Quality	Brand Experienc	Brand Loyalty
Brand Trust	Pearson Correlati	1						
Brand Image	Pearson Correlati	.460**	1					
After-Sales Service	Pearson Correlati	.428**	.457**	1				
Customer Satisfactio	Pearson Correlati	.524**	.289**	.594**	1			
Perceived Quality	Pearson Correlati	.518**	.458**	.325**	.466**	1		
Brand Experience	Pearson Correlati	.414**	.248**	.436**	.533**	.542**	1	.
Brand Loyalty	Pearson Correlati	.713**	.571**	.843**	.684**	.802**	.628**	1

**. Correlation is significant at the 0.01 level (2-tailed).

The correlation matrix above indicates a significant positive correlation between all the independent variables and the dependent variable (brand loyalty). After-sales service is the most influential factor in Egyptian consumer brand loyalty; its correlation coefficient is 0.843 followed by perceived quality at 0.802, then brand trust at 0.713, and the last factor is brand image at 0.571.

Regression Analysis

Regression analysis is a statistical technique that provides a prediction of the value of the dependent variable based on the value of the independent variable. It is also used to develop an equation to express the relationship between two variables. In addition, this analysis allows us to confidently determine which factors are statistically significant and which can be ignored.

Before carrying out the regression analysis, it is essential to ensure that there is no significant correlation between the independent variables with each other to avoid the so-called multicollinearity problem. Multicollinearity exists when there is a correlation between two or more independent variables used in a regression model. If there is a high degree of correlation, it is difficult to determine the contribution of each independent variable because their effects will be confounding. (Hair et al., 1995). In addition, the presence of multilinearity makes some of the significant variables under study to be insignificant and consequently leads to impractical explanations of the results. As a result, it becomes difficult to accurately determine the individual effects of each independent variable on the dependent variable (Hair et al., 2006). Furthermore, the problem of multicollinearity can lead to misunderstanding of the dependent variable in the prediction model, which means that the model may not be reliable (Frank, 2001; Hosmer et al., 2013). So, before proceeding with the multiple regression analysis, Variance Inflation Factor (VIF) analysis should be applied first to detect whether there is a problem of multicollinearity among predictors in a multiple linear regression model or not (Belsley et al., 1980). According to Mason and Perreault (1991), multicollinearity will not be found if the Variance Inflation Factor is less than 10 and the tolerance values are greater than 0.10. while Hair et al. (2014) stated that if the VIF values are greater than 5, there will be collinearity between the predictor variables, which can lead to inaccurate estimates of the regression coefficients and it will be difficult to determine which predictor variables are contributing to the outcome variable. The results of the multicollinearity test are shown in Table 7.

Table 7: Multicollinearity Test

Model	Collinearity Statistics	
	Tolerance	VIF
Brand trust	.218	1.491
Brand image	.386	1.354
After-sales service	.463	1.252
Customer satisfaction	.653	1.041
Perceived quality	.511	1.213
Brand experience	.423	1.332

Dependent Variable: Brand loyalty

- The results obtained from the multicollinearity test show that tolerance values range from .218 to .653, meaning that between 21.8% and 65.3% of the variance in the predictors is unshared. Our largest VIF value is 1.49, which is below 5.
- The results indicate that multicollinearity will not be a problem in the regression model; the variables in the model are not correlated and consequently, the model is reliable for prediction.

Multiple Linear Regression Analysis

Multiple linear regression analysis is a statistical technique used to analyze the relationship between a dependent variable and one or more independent variables. In addition, it shows how much the independent variables contribute to the change in the dependent variable. Furthermore, it is a powerful tool to use the independent variables to predict the value of the dependent variable. In this paper, the multiple linear regression analysis was carried out to find which of the proposed factors have the highest influence on Egyptian consumer brand loyalty regarding home appliances. The results of this analysis are listed in Tables 8, 9, and 10 respectively.

Table 8: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.927	.859	.857	.25963	1.854

Predictors: (Constant), Brand Experience, Brand Image, Brand Trust, Customer Satisfaction, After-Sales Service, Perceived Quality
Dependent Variable: Brand loyalty

- Coefficient of determination 'R-Square' is a statistical measure that explains how well the regression model predicts an outcome. In addition, it explains the independent variable's ability to explain the dependent variable's variance. Also, it measures the strength of the relationship between the independent variables and the dependent variable.
- Results presented in Table 8 show that R-Square is 0.859 which means 85.9% of the variance in consumer loyalty is explained by the independent variables. In other words, 85.9% of Egyptian consumer loyalty to the home appliance brand is caused by the proposed factors. While the remaining 14.1% is explained by other factors that are not included in this model.
 - Durbin-Watson value is 1.854 which means the model has acceptable independence of errors and there is no autocorrelation among independent variables.
 - Totally, these results imply that the proposed research model is a good fit for describing the factors impacting Egyptian consumer brand loyalty concerning home appliances.

Table 9: ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	141.263	6	23.544	237.168	.000[a]
Residual	23.189	344	.067		
Total	164.452	350			

Predictors: (Constant), Brand Experience, Brand Image, Brand Trust, Customer Satisfaction, After-Sales Service, Perceived Quality
Dependent Variable: Brand loyalty

ANOVA table shows that the linear model explains a significant variance in Egyptian consumer brand loyalty. The F value of 237.168 has a p-value of .000 indicating that the overall model is statistically significant.

Table 10: Results of multiple linear regression analysis

Model	Unstandardized Coefficients	Standardized Coefficients (β)	Sig.
Constant	-.304		
Brand Trust	.129	.136	.000
Brand Image	.069	.086	.002
After-Sales Service	.197	.218	.000
Customer Satisfaction	.098	.109	.000
Perceived Quality	.154	.183	.000
Brand Experience	.074	.093	.000

Predictors: (Constant), Brand Experience, Brand Image, Brand Trust, Customer Satisfaction, After Sales Service,
 Perceived Quality
 Dependent Variable: Brand loyalty

- The standardized coefficient shows that after-sales service is the strongest predictor of Egyptian consumer brand loyalty (β = .218), followed by perceived quality (β=.183). The lowest predictor variable is the brand image (β=.086).

- For every one-unit increase in after-sales service, Egyptian consumer brand loyalty will increase by 0.197, for every one-unit increase in perceived quality, Egyptian consumer brand loyalty will increase by 0.154. Finally, for every one-unit increase in brand image, Egyptian consumer brand loyalty will increase by 0.069.
- The positive values of the regression coefficients confirm that the Egyptian consumer brand loyalty (dependent variable) moves in the same direction as the independent variables move.
- Based on the results of Table 10, it can be seen that the multiple linear regression equation is as follows:

$Y = a + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 + \beta_5 x_5 + \beta_6 x_6$

Where a is a constant;

Y is the dependent variable (consumer brand loyalty);

X1, X2, X3, X4, X5, and X6 are the independent variables which are (Brand trust, Brand image, After-sales service, Customer satisfaction, Perceived quality, and Brand experience) respectively.

β1, β2, β3, β4, β5, and β6 are the regression coefficients for the previously mentioned independent variables.

So, the general regression model can be reformulated as follows:

consumers brand loyalty = -0.304 + 0.136 brand trust + 0.086 brand image + 0.218 after-sales service + 0.109 customer satisfaction + 0.183 perceived quality + 0.093 brand experience.

Stepwise Regression Analysis

Stepwise regression aims to revise the model step by step by adding or deleting one predictor based on the statistical significance (Wang and Chen, 2016). In the same context, Smith (2018) stated that the stepwise regression technique is used to reduce the list of explanatory variables to a parsimonious collection of the most useful variables. Therefore, to assess the most important variables that strongly influence Egyptian consumer brand loyalty concerning home appliances and to develop a linear prediction equation based on the candidate variables, stepwise regression analysis was conducted. The results of this analysis are depicted in Table 11.

Table 11: Results of stepwise regression analysis

Model	Unstandardized Coefficients	Standardized Coefficients (β)
Constant	-.273	
After-Sales Service	.248	.356
Brand Trust	.164	.197
Perceived Quality	.216	.286
Customer Satisfaction	.102	.115

Dependent Variable: Brand loyalty

- The results depicted in Table 11 show that after-sales service is the highest importance variable (β=.356). The perceived quality has the second importance (β=.286). Brand trust also has a significant impact on Egyptian consumer brand loyalty (β=.197). Customer satisfaction has the fourth relative importance in influencing Egyptian consumer brand loyalty (β=.115).
- Based on this clarification, the regression model according to stepwise analysis can be formulated as follows:
  Y = -.273 + 0.356 after-sales service + 0.197 brand trust + 0.286 perceived quality + 0.115 customer satisfaction.

RESULTS

The main objective of this study is to identify the factors that Egyptian consumers rely on to build their brand loyalty concerning home appliances and to reveal the relative importance of each factor in achieving overall consumer brand loyalty. In this regard, the study proposed six factors to investigate their ability to achieve this goal: brand trust, perceived quality, after-sales service, customer satisfaction, brand image, and brand experience. This research also aims - through these factors - to develop a mathematical model that helps brand agents and marketers to predict the level of Egyptian consumers' loyalty to the brand of these products.

The study reveals that there are statistically significant positive correlations between all the proposed factors and the loyalty of the Egyptian consumer to the home appliances brand, meaning that the more attention is paid to these factors, the more loyal the Egyptian consumer is to the brand. After-sales service emerges as the strongest variable associated with brand loyalty, with a correlation coefficient of 0.843, followed by perceived quality, with a correlation coefficient of 0.802 with brand loyalty, while the correlation coefficient between brand image and consumer loyalty is the lowest, it is 0.571.

Stepwise regression analysis reveals that only four factors are the most important factors that can play a decisive role in Egyptian consumers' loyalty to a home appliance brand. After-sales service is the most important factor (β=.356). Perceived quality comes in second in relative importance (β=.286), followed by brand trust (β=.197), and the last determinant is customer satisfaction (β=.115). Therefore, home appliance brand managers should pay more attention to these factors to ensure the highest level of consumer brand loyalty to such products.

ANOVA analysis results indicate that all independent variables have a significant impact on the dependent variable, which means that the independent variables can explain the variance in Egyptian consumers' brand loyalty.

The results presented in Tables 8, 9, and 10 indicate that all the hypotheses of the study are fully supported, meaning that the proposed hypotheses H1, H2, H3, H4, H5, and H6 are quite accepted.

CONCLUSION

The initial goal of this paper is to derive and assess a comprehensive model containing the most important factors that achieve the highest degree of Egyptian consumer brand loyalty in the context of home appliances. The data are collected from customers who purchased different home appliance brands from a total of 20 shopping malls, home appliance showrooms, and agents' outlets in Alexandria. The sample is evaluated using the Kaiser-Meyer-Olkin Measure of sampling adequacy.

As a result of the analyses, it is determined that the after-sales service is the strongest predictor of brand loyalty, meaning that the Egyptian consumer is primarily concerned with the quality of the after-sales service provided by the brand agent and is considered the first motive for his brand loyalty. Perceived quality emerged as the second influential factor affecting brand loyalty. Brand trust is ranked as the third influential factor, while customer satisfaction is the fourth followed by brand experience. The lowest predictor variable is the brand image. Using inferential statistics, we have confirmed that all factors significantly influenced brand loyalty. On that basis, all proposed hypotheses are accepted.

Implications of the study

Academic Implications
The current study contributes to brand loyalty literature by introducing a comprehensive model to explore the factors affecting the Egyptian consumer's loyalty to the brand in the home appliances sector and thus provides a new perspective on how to enhance brand loyalty towards these types of products. In addition, our results could serve as a starting point for further empirical research in this specific area.

Previous studies have evaluated the interrelationship between variables that influence brand loyalty along with various mediating variables, which has prompted the need for further empirical evaluations to study this interrelationship in isolation from any mediating variables. Thus, this research fills an important research gap in studying the direct impact of proposed factors on brand loyalty.
This research contributed to marketing literature by proposing the most important factors that lead to consumer brand loyalty in a single model. Before that, the effect of some of these factors was explained separately.

Managerial implications
This study provided important information about the factors that influence Egyptian consumer brand loyalty in the context of home appliances. Therefore, brand agents of these appliances should pay special attention to these factors because they have the greatest impact on developing consumer brand loyalty and not focus on other unimportant factors.

The results of this study are expected to provide crucial insights for brand agents and marketing managers in Egypt to formulate effective marketing strategies and develop promotional plans that lead to reinforcement of consumer brand loyalty and consequently increased sales.

Identifying the factors that enhance Egyptian consumer brand loyalty regarding home appliances can help agents of these brands allocate their resources effectively and develop effective marketing plans to increase Egyptian consumer brand loyalty.

Although companies are aware of the importance of building customer loyalty, the way to achieve it is still an unsolved question for them. Therefore, this study attempted to provide a comprehensive model to answer this question.

Practical implications
Home appliance brand agents in Egypt should develop appropriate marketing efforts targeting consumers based on the investigated factors, especially improving after-sales service, raising product quality, and enhancing brand trust to increase Egyptian consumer loyalty towards these brands.
Brand loyalty is an important marketing issue. Therefore, it is important to understand the factors influencing the brand loyalty of consumers so that marketers can accordingly formulate the appropriate marketing mix for their brands to attract more consumers.
Understanding the proposed factors is a worthwhile topic for research. This is simply because it helps adopt innovative marketing strategies and new promotional models that lead to deepening Egyptian consumer loyalty toward the home appliances brand.

Recommendations
Based on the results of this study, the researcher strongly recommends that marketing managers and brand agents of home appliances in Egypt adopt a strategy that focuses on the proposed factors to develop better brand loyalty towards these appliances

Regarding after-sales service, the results of this study showed that this factor has the greatest impact on the Egyptian consumer's brand loyalty. This means that the Egyptian consumer is primarily concerned with the quality of after-sales service provided by the brand agent. Therefore, brand agents should pay more attention to delivering these appliances safely to the buyers' homes and properly installing and repairing them by the brand's technicians. Brand agents should also pay attention to providing the necessary spare parts for the longest possible period because home appliances are viewed as durable devices. Moreover, the agents of these brands should adopt strategies that enhance after-sales service such as contacting customers after purchase to ensure that the device is working efficiently, making returns and exchanges a seamless process, and explaining warranty information carefully.

Concerning perceived quality, it is clear that this factor has become a vital factor in determining brand loyalty. This is what the study revealed where the perceived quality ranked second relative importance in

consumer brand loyalty. Therefore, home appliance manufacturers should focus their efforts primarily on this factor by delivering consistently high-quality products, producing what customers want, continuous product development, and establishing uniqueness in product quality to differentiate the brand from competitors.

Brand trust has emerged as the third influential factor affecting Egyptian consumer brand loyalty in the context of home appliances. This means that creating brand loyalty comes through reinforcing trust in the brand. So, home appliance manufacturers should first think about the needs of their target customers and design products that fit these needs, engage in social responsibility, embrace transparency, continue to be future-thinking and innovative, maintain brand identity, make the brand capable of delivering on its promises, demonstrate the company's values, take actions that reflect these values.

Customer satisfaction ranked fourth in terms of the strength of its association with the loyalty of Egyptian consumers to home appliance brands. Therefore, brand agents of such appliances should focus on how to create customer satisfaction. This can be achieved through offering proactive multi-channel support for customers such as training support staff, activating the hotline service and using chatbots, enhancing the systems for submitting complaints and suggestions, creating loyalty programs, providing 24/7 customer support, conducting continuous customer surveys to measure the level of satisfaction with the product. In addition, delivering a product that meets customer expectations along with quality and reasonable price.

About the brand experience, the study revealed that this factor ranks as the fifth most important factor in developing brand loyalty. This result highlights the significance of providing a positive brand experience to increase consumer loyalty. In this regard, brand agents should develop and implement an impactful brand experience throughout the customer journey to create positive experiences. This can be implemented by paying attention to the design and packaging of the product, which can create a long-term impact in the minds of consumers. In addition, manufacturers of these products can personalize the product to individual customers' needs if it is possible, go above and beyond customer expectations, never stop innovating, provide stylish products that perform exceptionally well, and adopt a continuously improving strategy.

The study also revealed that brand image significantly influences brand loyalty. In this regard, home appliance manufacturers should provide products that strengthen brand image by providing high-quality products, choosing a memorable brand name, applying the brand name across all products, and designing a logo that establishes the brand's visual identity in the customer's mind. These actions will likely create a positive brand image, obtain consumer acceptance, and establish brand loyalty in a competitive environment.

Limitations and the future studies
Although our findings provide several insights into brand loyalty to home appliances, the current study comes along with some limitations providing fresh possibilities for future research. In the first instance,

this study included only six factors to demonstrate their impact on brand loyalty, but there may be other potential factors that contribute to customer loyalty. So, it is better if future researchers take into account other dimensions such as product price, brand reputation, brand awareness, brand name, brand credibility, and corporate social responsibility along with currently proposed variables. Thus, a more comprehensive model can be developed.

This study considered only home appliance products. Consequently, the findings are specific to this field only, which means that practitioners should exercise a high level of caution in attempting to generalize them to other contexts. Therefore, the researcher calls for conducting similar research on other products to achieve comprehensive insights into the brand loyalty concept.

The researcher recommends considering demographic variables in future studies to better investigate the influence of proposed factors on brand loyalty. The research on these variables will help marketers to redesign the marketing strategies that enhance brand loyalty. The researcher also calls for conducting studies to study the reasons that lead to brand trust, customer satisfaction, and how can the customer form a good brand image. Such studies will lead to determining the roots of brand loyalty causes.

Respondents in this study were limited to residents of Alexandria Governorate only. This may limit the generalizability of the findings as the brand choice decisions of Alexandria may differ from those in other governorates. So, it is recommended that future studies on this topic be extended to all Egyptian governorates to obtain clearer and useful insights and more generalizable results.

Ethical Consideration
This study was governed by the general rules of scientific research ethics; an official letter was submitted to the university's ethics committee for approval. Furthermore, the respondents were requested to fill out the questionnaire voluntarily and they had the complete freedom to submit /not submit the questionnaire. Their answers were kept confidential and their data was not disclosed. The literature used in this research is cited and mentioned in the references section.
Accordingly, the approval code granted by the University's Scientific Research Ethics Committee was given to the researcher.

Competing Interests
The author declares that he has no competing interests regarding the publication of this paper

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