

THE IMPACT OF PRICE, PACKAGING, AND BRAND AWARENESS ON BRAND LOYALTY: EVIDENCE FROM THE SMARTPHONE RETAILING INDUSTRY

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Abstract

Market competition pushes firms to focus on strengthening brand loyalty. The aim of this study is to find out the impact of price, packaging, and brand awareness on brand loyalty in the Smartphone industry in Bangladesh. Data have been collected from participants in Bangladesh through structured interviews using a questionnaire. A total of 405 responses were collected through random sampling to analyze the influence of selected factors on brand loyalty in the Bangladeshi smartphone industry. Hypotheses and a structured model have been developed and tested to determine the impact and correlation of the dependent and independent variables. For analyzing this data, the Smart PLS tool has been used. The study model is statistically significant, with a moderate adjusted R-square for brand loyalty. The coefficient values for packaging and brand awareness are statistically significant (0.191 and 0.617, respectively), whereas the price coefficient is not. So, packaging and brand awareness in Bangladesh's Smartphone industry significantly impact brand loyalty among Smartphone users. Gaining insights into brand loyalty will allow local marketers to focus on Bangladesh's smartphone retail sector and increase market share. Additionally, the consumer can obtain preferred packaging, a more reasonable price, and tailored awareness initiatives, all of which can boost brand loyalty.

Keywords: Price, Packaging, Brand awareness, Brand loyalty, Smartphone industry.

1.0 Introduction

1.1 Background of the Study

Bangladesh's smartphone market will generate US\$7 billion in revenue within the year 2025, and it is expected to grow 7.5% annually, while the per-person revenue

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will be more than \$40 in the following year (*Smartphones - Bangladesh | Statista Market Forecast*, 2025). Even a surge in local manufacturing has been seen in recent years as the demand increased in the middle class (Babu, 2024). The market offers numerous brands to customers, so revenue fluctuates with brand loyalty. If any specific company is preferred at the time of purchasing a product, and the customer has positive attitudes toward the brand, it can be called brand loyalty (Agnihotri & Agnihotri, 2023). As brand loyalty influences purchase decisions, this survey aims to determine the influence of price, packaging, and brand awareness on it in the smartphone industry. Marketers require the latest information about the competitive landscape, the target segments they have chosen, and the environment. Research is a tool marketers use to track goals and pinpoint opportunities for improvement. Furthermore, marketing research enables marketers to have a larger understanding of the expectations, loyalty, and satisfaction of the company's target audience (Kotler & Keller, 2016). A better understanding of brand loyalty will help local marketers secure more market share as they focus on the smartphone market in Bangladesh. Again, the customer will get a reasonable price, preferred packaging, and customized awareness programs, which will lead to greater brand loyalty.

A smartphone is a hand-held device that integrates seamlessly with a mobile phone. It has built-in personal information management programs and an operating system (OS) that enables the installation of additional software for uses such as email, music, video, and web browsing (*Britannica*, 2024). The users interact with this machine hundreds of times a day (Falaki et al., 2010). In addition to the visible functional advantages, smartphone users also experience emotional benefits, such as stress relief and a sense of psychological comfort (Melumad & Pham, 2020). The smartphone industry is highly dynamic due to technological advancements and the introduction of new products (Cecere et al., 2015). Brand image, price, product excellence, etc., have a significant effect on whether or not people decide to buy smartphones (Djarmiko & Pradana, 2016).

Brand loyalty is vital, specifically in the "fast-moving consumer goods (FMCG)" sector, where customers have numerous choices and intense rivalry in marketing. Since brand loyalty affects customer retention and maintains long-term profitability, it has a significant impact on how successful businesses remain (Chauhan, 2023). Fostering and sustaining brand loyalty are highly significant. In order to achieve long-term profitability and a viable edge, building brand loyalty is becoming increasingly important (Tabish et al., 2017). Through the moderated impact of brand equity, awareness of the brand, and connection with the brand had a direct and indirect impact on brand loyalty (Oppong & Phiri, 2018).

1.2 Rationale of the Study

In January 2024, the number of mobile subscribers in Bangladesh was 190.46 million (*Bangladesh Telecommunication Regulatory Commission*, 2024b). Just 18.11 percent of the 2.1 million mobile phones produced in Bangladesh in December 2023 were smartphones. 10009 smartphones were imported simultaneously (*Bangladesh Telecommunication Regulatory Commission*, 2024a). Industry insiders claim that a spike in imports via the gray market was one of the reasons why mobile phone output in Bangladesh fell to a 17-month low in May (Babu, 2023). To increase domestic

production and sales, it is vital to build brand loyalty; thus, this research sought to evaluate the impact of three factors on brand loyalty.

Sudden increases in sales lead to higher gross profit. But it is impossible to retain those sales if the consumers are not brand loyal. Besides, profitability and sales growth have no significant impact on firm value (Iskandar, 2021). This study aims to help smartphone brands increase customer loyalty. This finding will let the brands understand the impact of the variables on brand loyalty, and based on that, the smartphone's price, packaging, and brand awareness activities will be handled. So, native brands will gain an advantage from customization, and the policymaker can craft a policy based on that.

1.3 Objective of the Study

The main objective of this study is to find out how price, packaging, and brand awareness affect brand loyalty in Bangladesh's smartphone industry. To achieve this broad objective, additional aims are set as follows-

- i. To find out the level at which brand awareness, price, and packaging are connected to brand loyalty;
- ii. To examine the extent to which price, packaging, and brand awareness influence the brand loyalty among smartphone consumers in Bangladesh.
- iii. To understand whether brand loyalty can be predicted using the selected variables.

2.0 Literature Review

2.1 Pricing

A quantitative study in Pakistan's telecommunications industry examined the effects of price and service quality on brand loyalty. The study sample was business administration students from three different universities, and a hypothesis-based model was used in this research. The brand may benefit from higher customer satisfaction and, eventually, increase customer loyalty if it employs a pricing strategy that benefits customers (Waqar, 2020). Another study with 212 paint buyers examines how brand awareness, price, and packaging affect brand loyalty in the paint retail sector in South Africa. The study used regression analysis and a one-way analysis of variance, and found that price, packaging, and brand awareness had a significant impact on brand loyalty. The findings recommend that managers begin using efficient packaging, pricing, and brand awareness, among other strategies, to boost consumers' brand loyalty to the company's products (Dhurup et al., 2014).

2.2 Packaging

A study of 348 samples in Ghana focused on the influence of packaging on perceived quality and brand loyalty among herbal medicine customers in the over-the-counter health market. This study used various tools for statistical analysis, including AMOS, SPSS 20, structural equation modeling, confirmatory factor analysis, psychometric properties, hypothesis testing, and mediation testing. The study found that packaging increases customer loyalty significantly (Mensah et al., 2022). In a separate study, the association among packaging, quality, equity, and loyalty in the drug industry was

investigated among 316 customers. This study used a structural equation model using Smart PLS Version 3.3.3, a measurement model, Cronbach's alpha, psychometric properties, Heterotrait-Monotrait (HTMT) ratio, etc., for statistical analysis. The study found that while brand equity influences the correlation between perceived quality and loyalty, it truly reflects the influence of packaging on loyalty. Additionally, the study revealed that when perceived quality solely mediates the impact of packaging on brand equity, it purely influences the association between packaging and loyalty (Oppong et al., 2022).

2.3 Brand Awareness

A study investigates the effect of brand awareness and trust on 231 students' loyalty to packaged snacks in Jakarta. This study found that students' loyalty regarding packaged foods delivered in numerous supermarkets and convenience stores in Jakarta is significantly influenced by brand awareness and trust, with brand awareness being a stronger predictor than trust. The study's findings also emphasize the importance of increasing or improving awareness of the packaged food brand to promote brand loyalty (Wilson & Jessica, 2020). A different study focused primarily on the effect of brand awareness on brand loyalty in Jordan. This study was conducted on 90 samples from the customers of the Islamic Bank brand in Mafraq Governorate, Jordan. This survey found that brand awareness and brand assurance have a strong and positive correlation with brand loyalty (Alkhawaldeh et al., 2017). Another study investigates the factors affecting brand loyalty to Coca-Cola in rural areas. A structured questionnaire was used to collect data from 114 participants in this study. Regression analysis, one-way ANOVA, and the chi-square test were used in the statistical analysis. This investigation found that perceived quality, brand awareness, and brand image are statistically significant factors in brand loyalty. This study also revealed that participants' brand loyalty differs by occupation, age, marital status, and level of education (Anand et al., 2016).

2.4 Brand Loyalty

A study was conducted in Surabaya City, focusing on female teenagers, to identify the factors influencing the brand loyalty of Skintific clients. This survey was conducted with 100 samples from female teenagers who purchased Skintific products. The research methodology for this investigation is based on descriptive and associative approach procedures. This study found that both brand trust and perceived quality variables significantly influenced brand loyalty. Alternatively, brand image has no partial impact on brand loyalty (Candani & Rusdianto, 2023).

Yeh et al. (2016) focused on utilizing consumer value and consumer-brand awareness to determine smartphone brand loyalty. Data were collected from 157 respondents and analyzed using SmartPLS. This study found that smartphone brand loyalty is positively affected by functional value, emotional value, social value, and identity of the brand (Yeh et al., 2016). The study's results are less applicable to the larger population due to the limited sample size. Redda et al. (2019) focused on determining customer satisfaction and brand loyalty among students in Generation Y for smartphones. Data were collected from 275 respondents at two public higher education institutions (HEIs) in South Africa using a self-administered questionnaire.

In this study, the statistical analysis was conducted using IBM SPSS version 25 for Microsoft Windows. The study found that the primary determinants of customer satisfaction with smartphones are brand image, functionality, product design, and price. The study also found that Generation Y's dependence on smartphones is influenced by brand image, product design, and usefulness (Redda & Shezi, 2019).

Brand loyalty in the smartphone business hasn't been extensively studied in Bangladesh. Additionally, no evaluation exists in the smartphone industry regarding the effects of packaging, price, and brand awareness on brand loyalty.

3.0 Theoretical Framework

3.1 Price

Price is the total of all the values that buyers have to give up in order to benefit from the ownership or usage of a good or service (Barringer & Ireland, 2015; Kotler & Armstrong, 2016). For producers, it is the quantity of money received by them for products or goods (Saxena, 2009). It is a component of the marketing mix (Schindler, 2011). Price satisfaction is an integral part of competitive strategy in business-to-consumer (B2C) relations. It affects customers' buying decisions, which can ultimately lead to profitability and the longevity of the business (Khoironi et al., 2018). Consumers consider price when evaluating a specific good. Somebody might identify the reference price by determining current prices, considering previous prices, or analyzing the purchasing conditions. When determining prices, sellers may utilize affect over these customers' reference prices (Kotler & Armstrong, 2014).

Apart from their awareness of the prices of the products they buy, consumers also possess some awareness of the prices of the products they choose not to buy. A portion of this information is obtained through price-related searches, which include going shopping, surfing the web, and questioning friends and family about their purchases in order to look into other options for a future purchase (Schindler, 2011). The supply and demand dynamics of a particular commodity or service at any given point influence its price. If supply is greater than demand, prices should decrease and vice versa (Banton, 2023; Inoua & Smith, 2023). The actual price paid for a product within a specific time period is known as the market price (Vaggi, 2017). A brand may benefit from higher customer satisfaction and eventually increase customer loyalty if it employs a beneficial pricing strategy for its products (Waqar, 2020). According to another study on the paint industry, price and brand loyalty have a strong positive correlation (Dhurup et al., 2014).

H1 = Brand loyalty and price have a significant relationship.

3.2 Packaging

Packaging refers to the entire process of making a product's container; a well-made package draws in customers and encourages them to choose a product (Kotler et al., 2013). Stylish packaging can draw potential buyers' attention when they first encounter packaging. The main purpose of packaging is to protect and hold the goods. Less attention to packaging causes difficulties for potential customers and a loss of market share. On the other hand, overpackaging is another type of problem. The findings of a study show how product packaging influences consumers' decisions

to buy a smartphone which played a positive role in purchase decision (Suryawan et al., 2013).

The product's packing quality is an indicator of the consumer's opinion. The consumer suggests a package that is of higher quality (Deliya & Parmar, 2012). With few exceptions, consumers rarely execute in-depth brand inquiries before making a conscious decision among FMCG products (Dobson & Yadav, 2012). Recently, packaging has developed as a potential driver of customer satisfaction. Also, it is providing a competitive advantage in various places, like the shelves of retailers (Kotler et al., 2023). As a product strategy, guarantees and warranties appear on packaging. Likewise, an increasing number of elements, including self-service, consumer wealth, brand and corporate image, and innovation, are driving the use of packaging as a marketing strategy. Even different colors of packaging have different meanings (Kotler & Keller, 2016). A study found that improving customers' loyalty requires careful consideration of how product packaging interacts (Mensah et al., 2022). Another study established the significance of perceived quality and brand equity when creating packaging for the pharmaceutical sector in order to increase consumers' loyalty (Oppong et al., 2022).

H2 = Brand loyalty and packaging have a significant positive relationship.

3.3 Brand Awareness

The level to which a brand is identified and remembered by customers is known as brand awareness, and it is a key notion in marketing and consumer behavior (Anand, 2023). Brand awareness is a contributing factor to brand equity. It is considered the purchaser's or potential buyer's recall ability of a brand in a product category (Saxena, 2009). The positive effect of building strong brand awareness is that it may affect decisions made about the brands in the reflection set, even in contexts where those particular companies are entirely unaffected by other companies (Keller et al., 2010). Due to a sense of security and familiarity with popular brands, customers are more likely to buy goods. In addition, a brand is recognized for its potential for consistency, company rigidity, and accounted-for quality (Sivaram et al., 2019).

Brand awareness is mandatory for building brand trust. Since customer trust eventually leads to brand loyalty, marketers should place a great deal of emphasis on developing it (Lau & Lee, 1999). According to a study, increasing consumer brand awareness is crucial for fostering brand loyalty (Wilson & Jessica, 2020). According to a different study, brand loyalty has a positive correlation with the awareness of the brand and commitment (Alkhawaldeh et al., 2017). Perceived quality, brand awareness, and brand image had a statistically significant impact on brand loyalty in an isolated study (Anand et al., 2016).

H3 = Brand loyalty and brand awareness have a significant relationship.

3.4 Brand Loyalty

Brand loyalty refers to a customer's hesitation to discontinue using a chosen product. Customers are "loyal" to the business in this case (Nanda, 2008). When customers repeatedly purchase the same brand while ignoring competitors, this is referred to as

brand loyalty (Amine, 1998). Brand loyalty relies on no obvious inducers affecting behavior and is equivalent to repeat sales from a completely arbitrary perspective (Moller Jensen & Hansen, 2006).

Marketers need to place a strong focus on building consumer trust because it ultimately leads to brand loyalty. Establishing this trust requires offering excellent support, special values, and complete satisfaction (Lau & Lee, 1999). As customer satisfaction is a key factor in why a person decides to connect with a particular company, it is vital to brand loyalty. When it involves establishing brand loyalty, distinct customer satisfaction levels reflect different characteristics (Bloemer & Kasper, 1995). Habitual buying and brand loyalty are not the same. It is possible that a person is buying a product repeatedly because of a lack of alternatives or priorities (Saxena, 2009). The respondents' brand loyalty differs according to their age, marital status, level of education, and occupation (Vijay Anand et al., 2016). Perceived quality and brand trust were found to have a partial impact on brand loyalty among female teenagers using Skintific products in Surabaya, Indonesia (Candani & Yuniardi Rusdianto, 2023).

Brand awareness, price, and packaging are all significant variables that affect brand loyalty and ultimately repurchases (Ali, 2019; Chauhan, 2023; Dhurup et al., 2014; Rompas et al., 2018; Yab et al., 2020). A brand-loyal buyer buys more of the brand. Even if the buyer purchases a product of another brand once for a discount from a competitor brand or because of the unavailability of the preferred brand, the person will come back to the preferred brand (Kotler & Armstrong, 2016). Even maintaining relationships with existing buyers is cheaper than attracting new customers. Relationship marketing, which is one of the most effective strategies, works in this situation since it focuses more on retaining current clients than gaining new ones (Gilaninia et al., 2011). Besides, a brand-loyal customer shares thoughts about the products, which helps to grow sales organically (Wali et al., 2015).

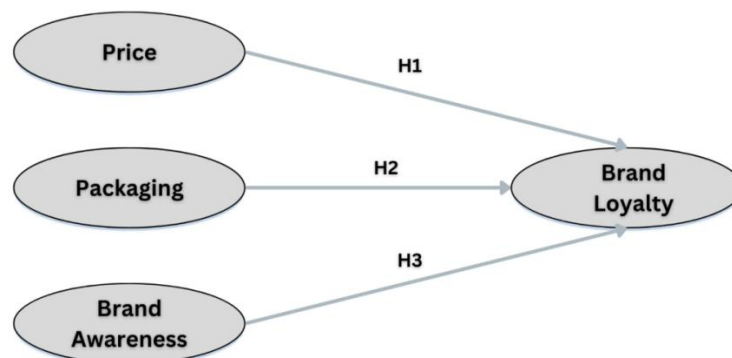


Figure 1: The proposed model to test the hypotheses (Impact of price, packaging, and brand awareness on brand awareness).

4.0 Methodology

The study used a survey method to execute a quantitative study (Cooper & Schindler, 2011). Data were collected using a structured questionnaire to apply statistical techniques to identify meaningful relationships among constructs. Also, hypothesis

testing is only possible using quantitative data. A deductive research approach was followed for this survey. The population was 172.92 million in July 2023 (Statistical Bulletin-Bangladesh, 2024) which is expected to be increased 1% annually, and 70.1% household have smartphones (ICT Application and Use Survey 2024-25, 2024a). Besides, 64.1% of the population owns a mobile phone, while 90.9% uses mobile phone, and 45.7% uses internet (ICT Application and Use Survey 2024-25, 2024b). The population was large, so a survey was used.

4.1 Participants and Sampling

The study used the convenience sampling method to collect data (Cooper & Schindler, 2011). Here, the sample population consisted of general people from different districts across Bangladesh, with diverse demographic characteristics, who use smartphones. Godden's formula was used to determine the sample size. It allows a 5% error margin with a 5% significance level ($\alpha = 0.05$). Because the study lacked prevalence data, the value was set at 50%.

$$n = \frac{z^2 pq}{e^2} = \frac{(1.96)^2 \times 0.5 \times 0.5}{(0.05)^2} = 384$$

The questionnaire was distributed to 450 people using online and offline mediums. The number of completed forms was 418. Only 13 responses were rejected because of incomplete responses in printed questionnaires. There are no technical issues or incomplete submissions in the online process due to the well-informed participants involved. Overall, 405 data points were collected.

4.2 Data Collection Procedures

Data collection was a vital part of obtaining accurate data for the successful completion of this study. All of the study data is primary, meaning it was collected directly from smartphone users. The study collected data from personal contacts using printed and Google Forms because this is a convenient and cost-effective approach. Most of the respondents were educated, so we had the advantage of collecting data via internet-based technologies such as email, WhatsApp, and Messenger. This advantage enabled us to collect data from diverse demographics. The English and Bangla languages were used to develop the questionnaire for this research. The data collection continued from March 1 to April 25, 2024. Here, the sample population consisted of general people from different districts across Bangladesh, with diverse demographic characteristics, who use Smartphones. A structured survey was developed to collect data. The study had three hypotheses considering which questionnaire was used. At first, the questionnaire asked for the consent of those who responded to the survey. Then, background information was collected through the questionnaire, including sex, relationship status, residence, educational qualification, age, occupation, monthly income, and favorite brand for purchasing a smartphone. Then comes the section on the constructs. Five questions for each construct, price, packaging, brand awareness, and brand loyalty, were asked, and answers were given using five Likert scales (Cooper & Schindler, 2011). This part of the questionnaire was made by adopting some items from previous research (Yoo et al., 2000).

4.3 Research Design

The survey data were analyzed using Smart PLS. Positivism is the research philosophy of the study, as it uses quantitative methods to discover authenticity through experimentation. Initially, background data was analyzed. A structural equation modeling approach was taken in this study (Cooper & Schindler, 2011). Here, the validity and reliability of the items from the constructs are checked. First, the loading of the items was checked. Secondly, Cronbach's alpha, composite reliability (rho_a), and average variance extracted (AVE) were tested. Lastly, the Heterotrait-Monotrait (HTMT) ratio was checked. After assessing reliability and validity, the data were used to examine the association between the independent and dependent variables. Here, VIF, p-values, R-squared, R-squared adjusted, F-statistic, and path coefficient were calculated to find out the relationship between constructs. Also, a chi-square test was performed in SPSS to assess the association between the independent and dependent variables.

5.0 Results

5.1 Descriptive Statistics

There are 405 respondents in Table 1 below, of which 52.1% were male, and 47.9% were female. Additionally, this table shows that 7.9% of respondents were married, 86.2% were unmarried, and 5.9% were in a relationship. Based on the survey data, 44.7% of respondents were urban residents, 31.9% were from suburban areas, and 23.5% were from rural areas. The education level of 2.5% of respondents was primary school or below; 4% were secondary school or equivalent; 41% were higher education or equivalent; 48.6% were graduates; and 4% were postgraduate or above. The age column indicates that 6.7% of respondents are under 18. Most respondents were aged 18–30 (90.4%). While 1.7% of respondents were between 31 and 40, another 1.2% were between 41 and 50. Here, the occupation shows that 1.5% of respondents had a government job, 3.5% had a private job, and 1% were businessmen. Additionally, most of the participants were students (92.6%), and 1.5% were homemakers. The majority of respondents (90.6%) had monthly incomes of less than 15,000 taka. Furthermore, 5.2% of participants reported a monthly income between 15,001 and 30,000 Taka, 3% between 30,001 and 45,000 Taka, and only 1.2% between 45,001 and 60,000 Taka. Based on the survey data, the pie chart shows that the Samsung brand was chosen by 30.4% of respondents. Of the respondents, 21% preferred the Apple brand, 6.2% preferred Google Pixel, 4% preferred OnePlus, 5.2% preferred Oppo, 13.8% preferred Realme, 5.9% preferred Vivo, 10.9% chose Xiaomi, and 2.7% chose other brands.

Table 1: Background characteristics of the respondents

Variable	Category/Level	Percentage (%)
Sex	Male	52.1
	Female	47.9
Relationship Status	Married	7.9
	Unmarried	86.2
	In a relationship	5.9

Residence	Urban	44.7
	Sub-urban	31.9
	Rural	23.5
Educational Qualification	PSC or below PSC	2.5
	SSC or equivalent	4.0
	HSC or equivalent	41.0
	Graduate	48.6
	Post-graduate or above	4.0
Age	Below 18 years	6.7
	18 years-30 years	90.4
	31 years-40 years	1.7
	41 years-50 years	1.2
Occupation	Government job	1.5
	Private job	3.5
	Business	1.0
	Student	92.6
	Homemaker	1.5
Monthly Income	0-15,000 Taka	90.6
	15,001-30,000 Taka	5.2
	30,001-45,000 Taka	3.0
	above 45000 Taka	1.2

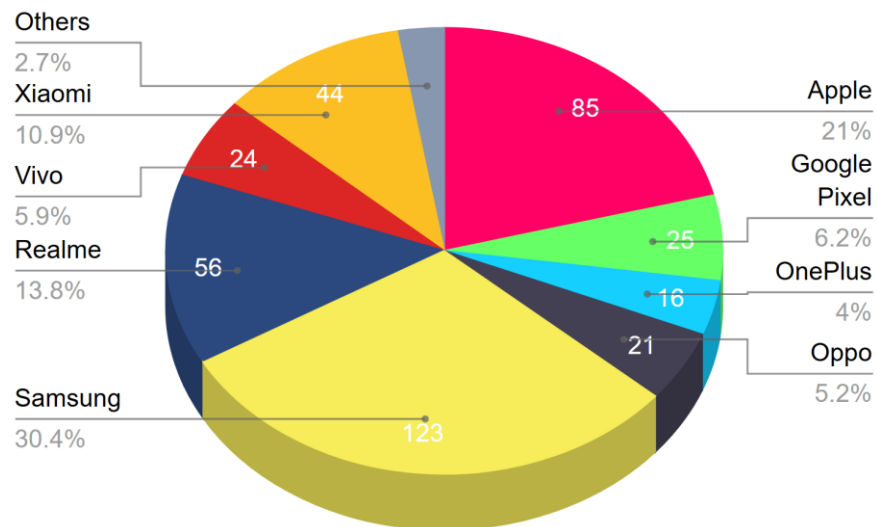


Figure 2: A pie chart showing the favorite brand for purchasing a smartphone.

5. 2 Evaluating Measurement (Outer) Models

Three values are considered in the reliability and validity test: convergent validity, discriminant validity, and composite reliability. The association between the latent variable score and the reflexive indicator score is recognized as having convergent validity. The value of 0.5 is enough, and all the loadings have a value higher than the required level. Average variance extracted (AVE), which checks discriminant validity, has a required value of 0.50. Lastly, composite reliability is checked by the composite reliability value and Cronbach's alpha, which require values of 0.70 for each construct. This study also conducted a heterotrait-monotrait ratio test, where all values were below the level of 0.90.

Table 2: Convergent validity test results

	Brand Awareness	Brand Loyalty	Packaging	Price
BA1	0.901			
BA2	0.905			
BA3	0.903			
BA4	0.876			
BA5	0.828			
BL1		0.845		
BL2		0.868		
BL3		0.753		
BL4		0.886		
BL5		0.858		
PG1			0.850	
PG2			0.858	
PG3			0.818	
PG4			0.860	
PG5			0.719	
PR1				0.661
PR2				0.741
PR3				0.793
PR4				0.704
PR5				0.716

Note: Convergent validity assesses how well a new measure correlates with other, established measures that are intended to assess the same or similar construct.

Table 3: Discriminant validity, Cronbach alpha, and Composite reliability test results

	Number of items	Average variance extracted (AVE)	Cronbach's alpha	Composite reliability (rho_a)
Price	5	0.525	0.774	0.788
Packaging	5	0.677	0.879	0.878
Brand Awareness	5	0.780	0.929	0.931
Brand Loyalty	5	0.711	0.898	0.907

Table 4: Heterotrait-Monotrait ratio test results

	Heterotrait-Monotrait ratio (HTMT)
Brand Loyalty <-> Brand Awareness	0.813
Packaging <-> Brand Awareness	0.651
Packaging <-> Brand Loyalty	0.636
Price <-> Brand Awareness	0.698
Price <-> Brand Loyalty	0.573
Price <-> Packaging	0.557

5.3 Structural Model Testing (Inner Model)

The study made a model where Y represents brand loyalty, β_0 stands for a constant value, β_1 characterizes price, β_2 represents packaging, β_3 represents brand awareness, and ε was for error.

The model of this study is:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon$$

The result shows R-square for the dependent variable had a value of 0.587, which is a moderate value, and R-square adjusted also had a moderate value, which is 0.584 (Table 5). The goodness of fit can be determined from the Q^2 value. For brand loyalty, 0.578 was the value of Q^2 which denotes strong predictive relevance.

Table 5: R-square (3 variables)

Variable	R-square	R-square adjusted
Brand Loyalty	0.587	0.584

A hypothesis is accepted if the p value is less than 0.05 and the t value is positive. In Table 6, the path coefficients were 0.033 for price and brand loyalty, 0.191 for packaging and brand loyalty, and 0.617 for brand awareness and brand loyalty. The t-values of brand loyalty with price, packaging, and brand awareness were 0.736, 4.049, and 12.164, respectively. According to this analysis, the p-values for packaging and brand awareness were $p < 0.001$ and $p < 0.001$, respectively, indicating that packaging and brand awareness were statistically significant. Here, hypotheses 2 and 3 were accepted. On the other hand, the p-value for the price was 0.462, indicating the price was not statistically significant. Also, F-square shows large effects in all three cases. For price, packaging, and brand awareness, the corresponding f-square values were 0.002, 0.056, and 0.475. The study also conducted a multicollinearity test, and all values were well below 5, the highest acceptable level. The VIF scores for prices, packaging, and brand awareness were, in that order, 1.609, 1.583, and 1.938.

Table 6: Path coefficients, T statistics, P values, F-squared, and multicollinearity test results

	Path coefficients	T statistics (O/STDEV)	P values	f-square	VIF
Price -> Brand Loyalty	0.033	0.736	0.462	0.002	1.609
Packaging -> Brand Loyalty	0.191	4.049	0.000	0.056	1.583
Brand Awareness -> Brand Loyalty	0.617	12.164	0.000	0.475	1.938

The new R-square value (excluding price) was 0.586, and the new adjusted R-square value was 0.584 (Table 7). The change in predictive relevance (Q^2) was 0.581. For each path coefficient is statistically significant at 1% level except for price on brand loyalty. So, packaging and brand awareness has positive influence on the brand loyalty in the smartphone industry in Bangladesh.

Table 7: R-square (excluding price)

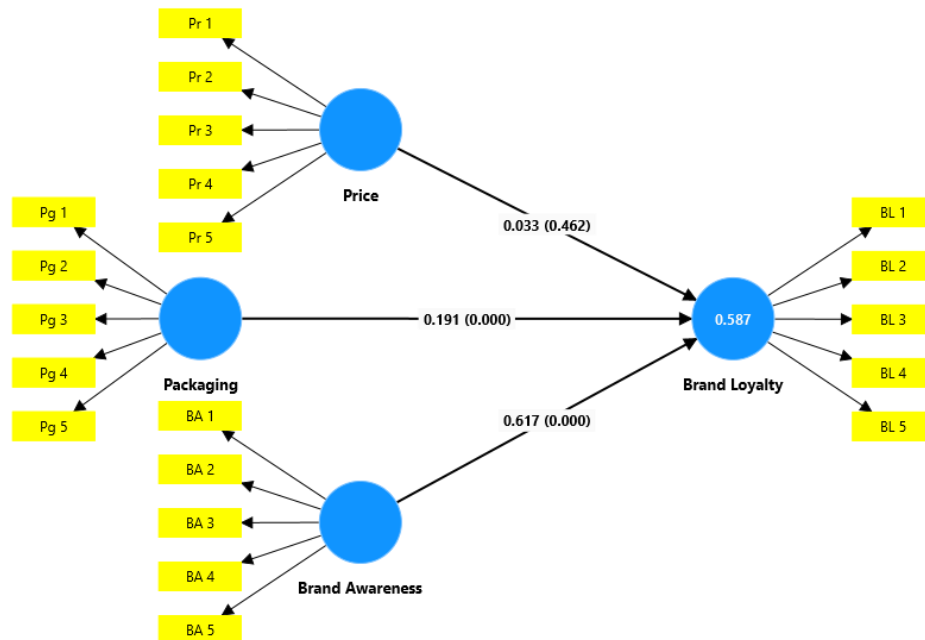
Variable	R-square	R-square adjusted
Brand Loyalty	0.586	0.584

In table 8, without the price (an independent variable), the new path coefficient between packaging and brand loyalty was 0.196, and between brand awareness and brand loyalty, it was 0.633. The changed t-values of packaging and brand awareness with brand loyalty were 4.115 and 14.276, respectively. According to this analysis, the new p-values of packaging and brand awareness were statistically significant, and correspondingly, the p-values were $p < 0.05$ and $p < 0.001$. For packaging and brand awareness, the corresponding f-square values were 0.060 and 0.630. The respective VIF scores for packaging and brand awareness were 1.537 and 1.537.

Table 8: Path coefficients, T statistics, P values, f-square, and multicollinearity test results (excluding price)

	Path coefficients	T statistics (O/STDEV)	P values	f-square	VIF
Packaging -> Brand Loyalty	0.196	4.115	0.000	0.060	1.537
Brand Awareness -> Brand Loyalty	0.633	14.276	0.000	0.630	1.537

Table 8 reports the impact of the two significant variables on brand loyalty when the price variable is excluded from the model. The result shows that the path coefficient has improved compared to Table 6. So, this result indicates that a statistically significant model for each variable explains the factor relation more effectively than adding more insignificant variables.

**Figure 3:** Display of PLS Bootstrapping Results (path coefficients and p-values in the inner model; R-squared in constructs)

The correlation matrix represents the relationship with other variables that the model uses to conduct the study. It shows the relationship, whether positive or negative, between the specified variables. All the factors (Price, Packaging, and Brand awareness) have a positive correlation with brand loyalty. Brand awareness is strongly correlated with brand loyalty in Bangladesh's smartphone industry. Pricing is also weakly correlated with brand loyalty in the Smartphone Industry in Bangladesh.

Table 9: Correlation Matrix

	BA 1	BA 2	BA 3	BA 4	BA 5	BL 1	BL 2	BL 3	BL 4	BL 5	Pg 1	Pg 2	Pg 3	Pg 4	Pg 5	Pr 1	Pr 2	Pr 3	Pr 4	Pr 5
BA 1	1	0.775	0.805	0.718	0.668	0.591	0.606	0.439	0.594	0.604	0.445	0.432	0.461	0.432	0.45	0.378	0.413	0.474	0.388	0.387
BA 2		1	0.781	0.737	0.687	0.576	0.604	0.45	0.619	0.643	0.46	0.442	0.454	0.433	0.437	0.395	0.412	0.501	0.416	0.364
BA 3			1	0.749	0.641	0.592	0.583	0.451	0.595	0.618	0.432	0.391	0.397	0.415	0.437	0.323	0.334	0.455	0.369	0.376
BA 4				1	0.678	0.539	0.559	0.374	0.566	0.568	0.426	0.383	0.43	0.399	0.429	0.324	0.37	0.456	0.352	0.352
BA 5					1	0.531	0.588	0.385	0.56	0.567	0.427	0.376	0.409	0.402	0.464	0.306	0.342	0.419	0.3	0.266
BL 1						1	0.704	0.572	0.665	0.612	0.384	0.39	0.349	0.391	0.426	0.265	0.273	0.339	0.242	0.248
BL 2							1	0.598	0.692	0.646	0.441	0.381	0.41	0.406	0.4	0.331	0.323	0.458	0.269	0.259
BL 3								1	0.571	0.546	0.29	0.329	0.328	0.323	0.366	0.276	0.164	0.258	0.159	0.229
BL 4									1	0.77	0.431	0.422	0.449	0.388	0.451	0.29	0.306	0.39	0.316	0.318
BL 5										1	0.386	0.339	0.408	0.401	0.484	0.288	0.306	0.43	0.265	0.287
Pg 1											1	0.772	0.609	0.682	0.444	0.335	0.355	0.32	0.243	0.238
Pg 2												1	0.636	0.678	0.463	0.324	0.394	0.286	0.211	0.205
Pg 3													1	0.656	0.467	0.352	0.343	0.292	0.185	0.193
Pg 4														1	0.526	0.265	0.323	0.268	0.205	0.191
Pg 5															1	0.22	0.262	0.357	0.224	0.248
Pr 1																1	0.399	0.367	0.295	0.346
Pr 2																	1	0.507	0.368	0.422
Pr 3																		1	0.456	0.392
Pr 4																			1	0.517
Pr 5																				1

Note: BA= Brand Awareness, BL= Brand Loyalty, PG = Packaging, and Pr = Price

However, this study ran a chi-square test in SPSS, which found a statistically significant relationship between five items related to the independent variable, brand loyalty, and fifteen items related to the dependent variables, price, packaging, and brand awareness.

6.0 Discussions

6.1 Findings and Comparison with Previous Study

The findings of this study show that only packaging and brand awareness are the significant drivers for brand loyalty in the smartphone industry in Bangladesh among the three selected variables. The first hypothesis was rejected, contradicting earlier research that found a substantial relationship between pricing and brand loyalty (Dhurup et al., 2014; Waqar, 2020). When a person buys a product like a smartphone, the focus is on the phone's features (such as camera, display, and security) (Global Mobile Consumer Survey, 2023), which will impact the regular user experience, whereas price is a one-time payment. The prices of most brands are close, so price is not considered in purchase decisions, as long-term and brand value are more important than price (*Kantar BrandZ Most Valuable Global Brands*, 2025). Also,

brand-loyal consumers do not want to switch for a small price difference. Lastly, every brand has its own ecosystem and switching costs, which is another reason the purchaser does not want to switch. The second and third hypotheses were accepted and represent a significant association between brand loyalty and packaging, as well as a significant relationship between brand loyalty and brand awareness. These two are consistent with earlier research (Alkhawaldeh et al., 2017; Dhurup et al., 2014; Mensah et al., 2022; Oppong et al., 2022; Vijay Anand et al., 2016; Wilson & Jessica, 2020). Previous studies found the reasons behind Generation Y's loyalty to cell phones include the product's usefulness, design, and brand image (Redda & Shezi, 2019). Again, a separate study showed smartphone brand loyalty is positively impacted by brand recognition (Yeh et al., 2016). Similarly, another cross-sectional study found that smartphone purchase decisions are influenced by product packaging (Suryawan et al., 2013). These findings support the current study's result. The product's price is underscored by consumers as a means of building brand loyalty in the segment in Bangladesh, and it challenges the price-centric assumptions about consumer behavior and brand loyalty, shaping the brand's presentation over cost. In Bangladesh, smartphone consumers prioritize brand familiarity and product packaging over price to build brand loyalty.

6.2 Limitations of the Study

The study has recent data, which provides insight into respondents' current perceptions. The respondents were from diverse demographic backgrounds, which enriches this research. The research was self-funded, so data were collected using convenience sampling, which is a nonprobability sampling method. The small sample size was another limitation of the study. Most of the samples are young people, so it is recommended to do studies focusing on different age groups. A panel-data survey can provide deeper insights into the field. Lastly, studying the other consumer items is recommended.

6.3 Future Research and Policy Implications

The study's findings open several avenues for further research on consumer behavior and brand loyalty by incorporating psychological variables and demographic factors. Firms and policymakers can focus more on packaging and brand awareness to strengthen consumer loyalty in Bangladesh's smartphone industry. With more knowledge, local marketers would be able to focus on Bangladesh's smartphone retailing market, offering customers customized awareness campaigns, convenient pricing, and preferred packaging. Here, brands will be able to focus on packaging to increase brand loyalty, and so the packaging variety, size, and shape will increase. Besides, lively and informative packages can be seen robustly. They will also focus on increasing brand awareness across offline and online media. Not only will advertising and marketing activities increase, but also assessments such as A/B testing will be used to evaluate awareness and preferences. Lastly, the government can inspire local brands by enacting laws in their favor and by understanding the factors that influence brand loyalty.

7.0 Conclusion

Bangladesh has had relatively few investigations into brand loyalty in the smartphone sector, and this study fills the gap by identifying the key factors that influence brand loyalty in the smartphone industry in Bangladesh. The study has found that brand awareness and packaging have a significant effect on brand loyalty, whereas price is not the key driver for brand loyalty in Bangladesh's smartphone market. The study challenges price-centric consumer behavior assumptions and reshapes the model of consumer brand loyalty in the smartphone industry in Bangladesh. Firms and policymakers can consider these findings and focus more on product presentation and brand awareness activities to reshape the brand loyalty. Further research can examine psychological and demographic factors, such as sample age, which can be more carefully considered in subsequent research. To observe the effect on brand loyalty, one might employ a variety of independent variables, such as after-sales services. Other products may also be the focus of future research.

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Appendix**1. The Scales are:****Price**

- Pr1 The price of my favorite brand's Smartphone is high.
- Pr2 The price is competitive compared to Smartphone from other brands.
- Pr3 The Smartphone provide good value for the price.
- Pr4 The price influences my decision to purchase Smartphone from my favorite brand.
- Pr5 Different brands offer different prices for similar Smartphone.

Packaging

- Pg1 The packaging color of my favorite Smartphone brand attracts me.
- Pg2 My favorite Smartphone brand's packaging design encourages me to purchase it.
- Pg3 My preferred Smartphone brand's logo on the package encourages me to make a purchase.
- Pg4 The packaging strategies adopted by my preferred Smartphone brand fascinate me.
- Pg5 I believe my favorite Smartphone brand uses eco-friendly packaging materials.

Brand Awareness

- BA1 I am aware of my preferred brand's Smartphone.
- BA2 Among competing Smartphone brands, I can identify my preferred Smartphone brand.
- BA3 I am informed and aware of my favorite Smartphone brand.
- BA4 Some features of my favorite Smartphone brand come quickly to mind.
- BA5 I can quickly recall the logo or slogan of my favorite Smartphone brand.

Brand Loyalty

- BL1 I consider myself to be loyal to my favorite Smartphone brand.
- BL2 My favorite Smartphone brand will be my first choice.
- BL3 I will not buy other brands if my favorite Smartphone brand is available at the store.

BL5 I will suggest the Smartphone products of my favorite brand to others.

2024/04/01 1:55:30 PM GMT+6	18 years-3 Male (A;N)Unmarried Urban (A;H)HSC or eqv Student (A)0-15,000 T Vivo	Neutral	Agree	Agree	Agree	Agree	Agree	Agree	Agree	Agree	Agree	Agree
2024/04/01 1:57:20 PM GMT+6	18 years-3 Female (A)Unmarried Urban (A;H)Graduate Student (A)0-15,000 T Realme	Neutral	Neutral	Neutral	Disagree	Disagree	Agree	Agree	Agree	Agree	Agree	Agree
2024/04/01 2:29:15 PM GMT+6	18 years-3 Female (A)Unmarried Sub-urban Graduate Student (A)0-15,000 T Samsung	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
2024/04/01 3:00:44 PM GMT+6	18 years-3 Male (A;N)Unmarried Urban (A;H)HSC or eqv Student (A)0-15,000 T Xiaomi	Agree	Agree	Agree	Neutral	Disagree	Agree	Agree	Agree	Agree	Agree	Agree
2024/04/01 3:01:57 PM GMT+6	18 years-3 Male (A;N)Unmarried Urban (A;H)Graduate Student (A)0-15,000 T Samsung	Agree	Agree	Agree	Agree	Agree	Agree	Neutral	Agree	Agree	Agree	Agree
2024/04/01 3:19:16 PM GMT+6	18 years-3 Female (A)Unmarried Urban (A;H)Graduate Student (A)0-15,000 T Xiaomi	Neutral	Agree	Agree	Agree	Agree	Agree	Agree	Agree	Agree	Agree	Agree
2024/04/01 3:31:04 PM GMT+6	18 years-3 Male (A;N)Unmarried Rural (A;H)Graduate Student (A)0-15,000 T Apple	Neutral	Disagree	Neutral	Neutral	Disagree	Neutral	Disagree	Disagree	Neutral	Strongly Di	Disagree
2024/04/01 3:40:28 PM GMT+6	18 years-3 Male (A;N)Unmarried Sub-Urban HSC or eqv Student (A)0-15,000 T Xiaomi	Disagree	Neutral	Strongly A	Strongly A	Neutral	Neutral	Disagree	Agree	Agree	Agree	Agree
2024/04/01 3:40:31 PM GMT+6	Below 18 (A;N)Unmarried Urban (A;H)HSC or eqv Student (A)0-15,000 T Samsung	Neutral	Neutral	Neutral	Neutral	Neutral	Agree	Agree	Agree	Agree	Agree	Agree
2024/04/01 3:45:27 PM GMT+6	18 years-3 Male (A;N)in a relatiec Urban (A;H)Graduate Student (A)0-15,000 T Google Pix Strongly A	Strongly A	Strongly A	Agree	Strongly A	Agree	Strongly A	Neutral	Agree	Neutral	Disagree	
2024/04/01 4:09:17 PM GMT+6	18 years-3 Male (A;N)Unmarried Urban (A;H)HSC or eqv Student (A)0-15,000 T Google Pix Disagree	Strongly A	Agree	Agree	Strongly D	Strongly D	Agree	Agree	Agree	Agree	Strongly D	Disagree
2024/04/01 4:09:30 PM GMT+6	18 years-3 Male (A;N)Unmarried Sub-urban Graduate Student (A)0-15,000 T T Samsung	Neutral	Agree	Agree	Neutral	Agree	Agree	Agree	Agree	Agree	Agree	Agree
2024/04/01 4:45:43 PM GMT+6	18 years-3 Male (A;N)Unmarried Rural (A;H)Graduate Student (A)15,001-30, Samsung	Disagree	Agree	Strongly A	Agree	Agree	Strongly D	Strongly D	Disagree	Agree	Strongly D	Agree
2024/04/01 5:02:51 PM GMT+6	18 years-3 Male (A;N)Unmarried Sub-Urban HSC or eqv Student (A)0-15,000 T Realme	Disagree	Agree	Agree	Agree	Neutral	Neutral	Agree	Agree	Agree	Agree	Neutral
2024/04/01 6:07:35 PM GMT+6	18 years-3 Female (A)Unmarried Urban (A;H)Post-grad. Student (A)0-15,000 T OnePlus	Strongly A	Agree	Agree	Agree	Agree	Agree	Neutral	Agree	Agree	Agree	Neutral
2024/04/01 6:59:20 PM GMT+6	18 years-3 Female (A)Unmarried Urban (A;H)Graduate Student (A)0-15,000 T Samsung	Neutral	Neutral	Disagree	Strongly D	Neutral	Disagree	Neutral	Disagree	Neutral	Disagree	Neutral
2024/04/01 10:26:35 PM GMT+6	18 years-3 Female (A)Married (A)Urban (A;H)HSC or eqv Student (A)0-15,000 T Xiaomi	Strongly A	Agree	Strongly A	Agree	Strongly A	Agree	Agree	Agree	Agree	Agree	Agree
2024/04/02 1:24:44 AM GMT+6	18 years-3 Male (A;N)Unmarried Sub-urban HSC or eqv Student (A)0-15,000 T Realme	Disagree	Strongly D	Disagree	Disagree	Disagree	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
2024/04/02 1:17:02 PM GMT+6	18 years-3 Male (A;N)Unmarried Sub-urban Graduate Student (A)0-15,000 T Samsung	Agree	Agree	Agree	Disagree	Neutral	Neutral	Neutral	Neutral	Neutral	Agree	
2024/04/02 6:12:50 PM GMT+6	18 years-3 Female (A)Unmarried Rural (A;H)Graduate Student (A)0-15,000 T Apple	Strongly A	Neutral	Agree	Agree	Disagree	Disagree	Agree	Agree	Agree	Strongly A	Agree
2024/04/02 6:27:52 PM GMT+6	18 years-3 Male (A;N)Unmarried Rural (A;H)Graduate Student (A)0-15,000 T Apple	Strongly D	Strongly D	Strongly D	Strongly D	Strongly D	Strongly D	Strongly D	Strongly D	Strongly D	Strongly D	Strongly D
2024/04/02 7:14:20 PM GMT+6	18 years-3 Male (A;N)Unmarried Sub-urban Graduate Student (A)0-15,000 T Xiaomi	Strongly A	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
2024/04/02 7:25:19 PM GMT+6	18 years-3 Male (A;N)Unmarried Urban (A;H)HSC or eqv Student (A)0-15,000 T Xiaomi	Agree	Agree	Neutral	Neutral	Agree	Neutral	Disagree	Neutral	Disagree	Neutral	Neutral
2024/04/02 7:25:55 PM GMT+6	18 years-3 Male (A;N)Unmarried Sub-urban Graduate Student (A)0-15,000 T Apple	Agree	Neutral	Agree	Agree	Disagree	Agree	Agree	Agree	Agree	Agree	Neutral
2024/04/02 10:15:57 PM GMT+6	18 years-3 Male (A;N)Married (A)Sub-urban Graduate Student (A)0-15,000 T Xiaomi	Disagree	Strongly D	Strongly D	Strongly D	Strongly D	Disagree	Strongly D	Strongly D	Strongly D	Disagree	
2024/04/02 10:57:06 PM GMT+6	18 years-3 Male (A;N)Unmarried Urban (A;H)HSC or eqv Student (A)0-15,000 T Samsung	Neutral	Agree	Agree	Strongly A	Strongly A	Agree	Agree	Agree	Agree	Agree	Disagree
2024/04/03 10:57:37 AM GMT+6	18 years-3 Female (A)Unmarried Urban (A;H)HSC or eqv Student (A)0-15,000 T Apple	Agree	Agree	Agree	Agree	Agree	Strongly A	Neutral	A	Strongly A	Strongly A	Strongly A
2024/04/03 11:09:32 AM GMT+6	18 years-3 Male (A;N)Unmarried Sub-urban Graduate Student (A)0-15,000 T Samsung	Agree	Neutral	Agree	Agree	Agree						