First impression matter: Investigating the Mediating role of Perceived Product Quality between Product Packaging and Brand Loyalty

الانطباع الأول مهم: دراسة الدور الوسيط لجودة المنتج المدركة بين تغليف المنتج وولاء العلامة التجارية

Hajar Mohammad Alhosseiny

Assistant Professor of Marketing

School of Business, ESLSCA University, Egypt.

E-mail: alhosseiny.family@gmail.com

ORCID: 0000-0001-5330-5236

Mobile: 01115433303

Abstract

This research paper aims to investigate the mediating role of product perceived quality in the relationship between product packaging (in terms of packaging color, packaging design, packaging material, and printed information) and brand loyalty, with a specific application to Egyptian natural body care brands. The study highlights the growing importance of packaging as a strategic marketing tool that influences consumer perceptions and behaviors in competitive markets. Data was collected through a structured questionnaire distributed to a random sample of 384 respondents. The responses were analyzed using SPSS 23.0 for descriptive statistics and Amos 23.0 for structural equation modeling to test the hypothesized relationships. Research findings revealed a positive and significant effect among all the studied variables. Furthermore, product perceived quality was found to play a key mediating role in enhancing the impact of packaging attributes on brand loyalty. These results offer practical implications for brand managers seeking to strengthen customer loyalty through packaging strategies.

Key words: Packaging, Perceived quality, Brand loyalty.

JEL Classifictaion: M1,M3,M31

Introduction

Determining the value of packaging for businesses and customers is necessary when using it to create long-term product value. Businesses should be able to identify the value that packaging adds for their clients, such as by figuring out which aspects of the packaging boost sales or willingness to pay (Korhonen, Jokinen, Joutsela, Roto, & Latvala, 2016).

Compared to other product development expenses, packaging is frequently less expensive. However, packaging has a significant impact on consumers' decisions to buy. Packaging can be seen as both a chance to make a lasting impression on customers and an investment in the appeal of the goods. Packaging frequently serves as a crucial interface for a product's usage or consumption, and as such, it contributes significantly to the development of product experience. Additionally, for fast-moving consumer goods, packaging is the most crucial marketing medium that fosters customer relationships and produces the greatest consumer connection (Korhonen, Jokinen, Joutsela, Roto, & Latvala, 2016).

One of the most crucial marketing concepts is probably perceived product quality. Researchers and practitioners have recently shown a great deal of interest in perceived quality, primarily in the context of services marketing (Cronin & Taylor, 1992; Parasuraman, Zeithaml & Berry 1996). Less emphasis has been paid, nevertheless, to research that incorporates the function of perceived product quality into the framework of other marketing factors including consumer satisfaction, purchase intentions, and product involvement, and brand loyalty. Furthermore, there hasn't been much marketing research done on the connections between these constructs for commodities as opposed to services. Practitioners and scholars are interested in perceived quality because they think it improves marketing performance (Hanifati & Salehudin, 2021). Perceived quality can be defined as a measure of beliefs about the level of quality of a product or service (Solin & Curry, 2023).

In today’s highly competitive market, product packaging plays a critical role not only in attracting consumer attention but also in shaping perceptions of product quality, which can ultimately influence brand loyalty. Despite growing interest in packaging as a strategic marketing tool, limited research has explored how the perceived quality of a product mediates the relationship between packaging and consumers' long-term commitment to a brand. Understanding this mediating effect is essential, as it may reveal whether packaging impacts brand loyalty directly or operates primarily through its

influence on perceived quality. This gap in literature highlights the need for a deeper investigation into the psychological mechanisms through which packaging contributes to brand loyalty, particularly by examining the extent to which perceived product quality serves as a key intermediary in this relationship.

Literature Review

First variable: Product packaging

The objective of product packaging is to both protect a product from outside contaminants and to promote it (Waheed, Khan, & Ahmad, 2018).According to Waheed, Khan,and Ahmad (2018), the decision-making process used by consumers is neither impartial, consistent, or logical. As a result, they frequently use packaging to determine quality. According to earlier research, packaging has a significant role in product promotion and purchase intention stimulation (Rundh, 2007). Consumer purchasing decisions are also significantly influenced by the packaging's appearance, quality, and color (Raheem, Ahmed, Vishnu, & Imamuddin, 2014). Additionally, it has been proposed that packaging is a key marketing point that aids customers in differentiating between items.

Furthermore, product packaging's aesthetic appeal is a marketing promotion medium (Silayoi & Speece, 2007). Customers place greater value on written information on packaging labels when they buy high involvement products.

1-Packaging Color

According to Aydin and Özer (2005), packaging color aids customers in visualizing and differentiating competing brands. Customers get flooded with a wide variety of goods in a variety of packaging colors when they visit a supermarket. Nonetheless, customers are more likely to buy goods whose packaging colors catch their eye. Different packaging colors have different implications, according to previous research (Aslam, 2006). While the green color conveys relaxation, the black color conveys command and mystery. Furthermore, whereas green denotes affordability and casualness, red conveys passion and powerful qualities. White represents purity, elegance, and formality, while brown represents masculinity (Aslam, 2006). According to Becker, Van-Rompay, Schiff erstein, and Galetzka (2011), consumers frequently rely their assessments of a product's quality and cost on the color of its packaging.

Customers also frequently associate colors with their beliefs and preferences. Babin, Hardesty, and Suter (2003) discovered, for instance, that customers like seeing blue in clothes stores. Kauppinen-Räisänen and Luomala (2010) investigated how different colors affected pharmaceutical items. According to the study, consumers' perceptions of the cost and quality of medications are correlated with the color of the packaging.

2-Packaging Material

Products are shielded from loss or damage by their packaging. The majority of products are often offered in cardboard, glass, and plastic. The first feature of a product to come into direct contact with the customer is its packaging. It also reflects a product's image and quality. According to earlier research, customers tend to anticipate that a product will also be of low quality when they observe poor packaging (Underwood, Klien & Burke, 2001). As a result, buyers typically buy goods that are packaged with premium materials. Silayoi & Speece (2004) discovered that customers frequently evaluate a product's packing material based on its appearance and style. Additionally, the majority of consumers focus their evaluations on the packaging design since they are unable to judge the quality of the packaging material. Packaging materials were previously primarily utilized for aesthetic purposes.

3-Packaging design

A product's layout, typefaces, and colors are all part of its packaging design. According to Grossman and Wisenblit (1999), each of these elements of packaging design influences consumer purchase intentions and builds a brand image. When buying low involvement products, consumers don't take the time to consider the products' features. Consequently, compared to high participation products, low involvement products place greater emphasis on packaging design (Hausman, 2000). Because packaging design influences consumers' perceptions of a product, it needs to be visually striking in a display (Grossman & Wisenblit, 1999).

4-Printed Information

Product information is provided by printed materials, sometimes known as product labels. According to Silayoi and Speece (2004) and Butkeviciene, Stravinskiene, and Rutelione (2008), written information is also intended to draw in customers and encourage them to purchase a product. It has been

discovered that when buying high involvement products, customers focus more on printed information (Kupiec & Revell, 2001). In contrast, while buying minimal involvement products, buyers are more likely to focus on visual appeal. When buying health-related products, consumers also examine written product information (Coulson, 2000).

Second Variable: Product Perceived Quality

People assess whether a product or service meets their expectations based on perceived quality (Severt et al., 2020). Customers have a subjective idea of what a product's perceived quality is (Calvo-Porral & LévyMangin, 2017). When evaluating quality, consumers take into account all the elements that are crucial to their satisfaction since quality is a multifaceted construct that leads to satisfaction (Gök et al., 2019).

One of the main positioning strategies used by marketers is the quality of their products. Product quality, according to Johnson and Ettlie (2001), is determined by performance, which can be defined as the extent of customization, defect-free status, or the reliability with which the product satisfies customer needs. Features, warranties, packaging, and design were all included in the product quality dimension. Customers are more likely to accept products of high quality. Performance was directly impacted by product quality, which was also strongly associated with consumer loyalty, satisfaction and intention to repurchase. (B.Fabian, 2023)

Furthermore, a number of studies offered empirically sound proof that overall consumer satisfaction is positively correlated with product quality. This implied that keeping up a high standard of product quality would result in customer satisfaction and brand loyalty. In addition to being a logical choice, high pleasure or delight forges an emotional connection with the brand. Increased customer loyalty is the outcome (B.Fabian, 2023). Additionally, customer satisfaction increases customer loyalty, decreases price sensitivity, and encourages positive word-of-mouth about the business and its offerings (B.Fabian, 2023).

Third Variable: Brand Loyalty

According to Lin and Lee (2012), loyal customers exhibit repeat purchase behavior and have a positive view toward the brand. When consumers develop this level of brand loyalty, they are less likely to switch to competing goods (Hanifati & Salehudin, 2021).

Research Hypotheses

Drawing from the theoretical framework outlined in the literature review, the following hypotheses have been formulated to examine the suggested relationships and assumptions in the scope of this research:

H1. Product Packaging has a statistically significant effect on Brand Loyalty.

H1a. Packaging Color has a statistically significant effect on Brand Loyalty.

H1b. Packaging Design has a statistically significant effect on Brand Loyalty.

H1c. Packaging Material has a statistically significant effect on Brand Loyalty.

H1d. Printed Information has a statistically significant effect on Brand Loyalty.

H2. Product Packaging has a statistically significant effect on perceived Product Quality.

H2a. Packaging color has a statistically significant effect on perceived Product Quality.

H2b. Packaging design has a statistically significant effect on perceived Product Quality.

H2c. Packaging material has a statistically significant effect on perceived Product Quality.

H2d. Printed Information has a statistically significant effect on perceived Product Quality.

H3. Perceived Product Quality has a statistically significant effect on Brand Loyalty.

H4. Perceived Product Quality has a mediating effect between Product Packaging and Brand Loyalty.

Methodology

The research used the quantitative approach. Data was collected through a questionnaire. A random sample of 384 responses were collected and analyzed using SPSS 23.0 and Amos 23.0. The measurement items for

constructs were adopted from previous research studies. The questionnaire's first section consisted of the demographic variables (Gender, Age, and Income level), the second section addressed the research variables that were measured. First, Product Packaging with (14) questions. Then, Product Perceived Quality through (5) questions. Finally, Brand loyalty was measured through (4) questions. A five-points Likert scale was used for all the measurement items ranging from 1= Strongly disagree and 5= Strongly Agree.

Results

1. Validity and Reliability Assessment:

Before submitting primary data to statistical processing and analysis, it is necessary to assess the validity and reliability of the scales used to collect the data. In order to achieve scales with high levels of validity and reliability, the main objectives of this evaluation are to help decrease random measurement mistakes and increase the stability of the scales utilized. Using Cronbach's Alpha and Factor Analysis, which enable the identification of the key elements of the research variable's scales, the present section focuses on evaluating the findings of the reliability and validity tests of the scales employed in the study.

1/1 Reliability/Stability Assessment:

Because the Alpha Correlation Coefficient is regarded as the most important technique for assessing the level of consistency of the items in the scales used, the research relied on it to guarantee the reliability of the scales used in gathering the current research data. Excluded are all variables with correlation coefficients below 0.30 with other factors on the same scales. The assessment of the internal consistency of the scales' contents is displayed in the following table:

Table No. (1): Assessment of the variables' internal consistency

Variables	No. Stat.	Stability	Reliability	Internal Consistency	Chi-Square	KMO	Sig.
Packaging Color	4	0.926	0.857	0.429	2199.771	0.782	0.000

Packaging Design	3	0.941	0.886	0.443	1423.022	0.749	0.000
Packaging Material	4	0.826	0.682	0.341	1778.164	0.857	0.000
Printed Information	3	0.941	0.885	0.443	1220.107	0.788	0.000
Product Packaging	14	0.880	0.775	0.388	8338.955	0.922	0.000
Perceived Product Quality	5	0.914	0.835	0.418	2026.325	0.889	0.000
Brand Loyalty	4	0.925	0.856	0.428	1916.571	0.833	0.000

Source: Based on the findings of statistical analysis, the researcher prepared

The preceding table No. (1) makes clear that:

- The Cronbach's Alpha coefficients range from 0.682 to 0.886, which is above the social sciences' acceptable bounds. This confirms that values between 60% and 70% show that the measures used in data collection in high-level research have a high degree of reliability.
- The Internal Consistency coefficient was (0.388) and the reliability coefficient for the independent variable "Product Packaging" was (0.775), and the Stability coefficient was (0.880) confirming that all of the scale's questions are reliable and appropriate.
- The Internal Consistency coefficient was (0.418) and the reliability coefficient for the mediator variable "Perceived Product Quality" was (0.835), and the Stability coefficient was (0.914) confirming that all of the scale's questions are reliable and appropriate.
- The Internal Consistency coefficient was (0.428) and the reliability coefficient for the dependent variable "Brand Loyalty" was (0.856),

and the Stability coefficient was (0.925) confirming that all of the scale's questions are reliable and appropriate.

- In addition to the significance levels being less than 0.05, all of which were 0.000, the KMO test values vary from 0.749 to 0.922, which are more than 0.05, and the value of Chi-Square Test from 1220.107 to 2199.771 that validate the questionnaire is appropriate for testing the study hypotheses and performing confirmatory factor analysis.

1/2 Evaluation of Validity and Reliability:

1/2/1 Test of Construct Validity:

The degree to which the scale captures the theoretical idea of the variable to be measured is known as construct validity. To assess construct validity, the researcher used AMOS V. 23 and the Confirmative Factor Analysis approach. Several indicators were discovered to assess the quality of this match in order to decide whether the suggested model for the data should be accepted or rejected, given the assumption of a match between the covariance matrix of the variables included in the analysis and the matrix anticipated by the software. These findings are shown as follows in Table No. (2):

Table No. (2): Measures of the structural equation model's goodness of fit

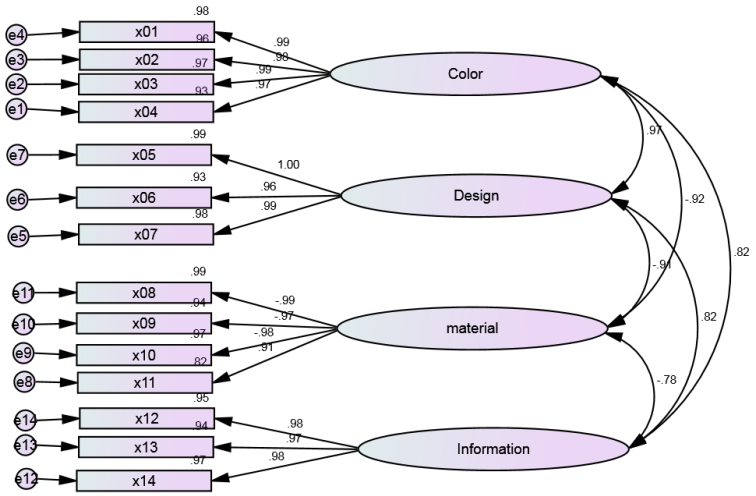
Indicators	Calculated Values	Model Values
CMIN/DF	1.301	Less than 5
Goodness of Fit Index	99.5	More than 0.90
Normed Fit Index	98.4	More than 0.90
Comparative Fit Index	96.9	More than 0.95
Increased Fit Index	97.7	More than 0.95
RMSEA	0.02	Less than 0.08

Source: Based on the findings of statistical analysis, the researcher prepared

2/2/1 Findings from the Product Packaging scale's Confirmatory Factor Analysis (CFA):

The four primary dimensions of the Product Packaging scale are Packaging Color, Packaging Design, Packaging Material, and Printed Information. The scale uses a five-point Likert scale and consists of 14 statements. In order to determine whether scale items accurately assess these qualities, the researcher used factor analysis. The loading factors of the

Product Packaging scale items on the fundamental dimensions to which they belong are depicted in Figure No. (1) as follows:



Chi-Square = (3620.341), df= (67), P-Value= (0.000), Chi-Square/df= (1.011), GFI=(99.1), IFI= (95.1), NFI=(98.5), CFI=(1.000), CFI= (97.4), RMSEA= (0.002)

Figure No. (1): Product Packaging Items' Reliability and Consistency Criteria

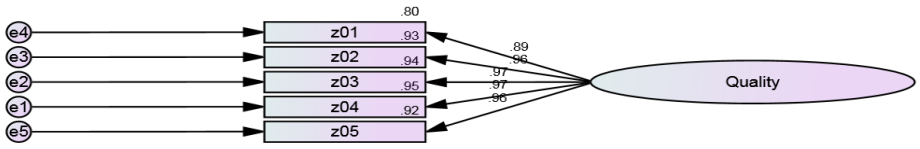
Figure No. (1) shows the following:

- The factor loading or consistency coefficient, which are the standardized regression weights displayed on the arrows linking the latent variable to each of its observed items. Every item that has a loading coefficient below 0.30 is disqualified. According to the dimensions of Packaging Color, Packaging Design, Packaging Material, and Printed Information, it was discovered that every item loading in the Product Packaging scale was greater than 0.30, with values ranging from 0.97 to 0.99 in the Packaging Color dimension, 0.96 to 1.00 in the Packaging Design dimension, 0.91 to 0.99 in the Packaging Material dimension, and 0.97 to 0.98 in the Printed Information dimension.
- Strong inter-item correlations and high goodness-of-fit indicators in the model demonstrate the scale's excellent validity and inter-

consistency, making it a dependable instrument for assessing the variable.

2/2/2 Findings from the Perceived Product Quality Scale's Confirmatory Factor Analysis (CFA):

The Perceived Product Quality scale uses a five-point Likert scale and consists of 5 statements. In order to determine whether scale items accurately assess these qualities, the researcher used factor analysis. The loading factors of the Perceived Product Quality scale items on the fundamental dimensions to which they belong are depicted in Figure No. (2) as follows:



Chi-Square = (6548.589), df= (20), P-Value= (0.000), Chi-Square/df= (1.126), GFI=(97.8), IFI= (99.3), NFI=(1.000), CFI=(99.5), CFI= (98.8), RMSEA= (0.001)

Figure No. (2): Perceived Product Quality Items' Reliability and Consistency Criteria

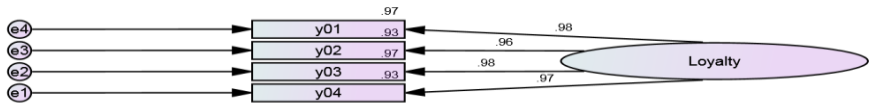
Figure No. (2) shows the following:

- The factor loading or consistency coefficient, which are the standardized regression weights displayed on the arrows linking the latent variable to each of its observed items. Every item that has a loading coefficient below 0.30 is disqualified. According to that, it was discovered that every item loading in the Perceived Product Quality scale was greater than 0.30, with values ranging from 0.89 to 0.97.

- Strong inter-item correlations and high goodness-of-fit indicators in the model demonstrate the scale's excellent validity and inter-consistency, making it a dependable instrument for assessing the variable.

2/2/3 Findings from the Brand Loyalty scale's Confirmatory Factor Analysis (CFA):

The Brand Loyalty scale uses a five-point Likert scale and consists of 4 statements. In order to determine whether scale items accurately assess these qualities, the researcher used factor analysis. The loading factors of the Brand Loyalty scale items on the fundamental dimensions to which they belong are depicted in Figure No. (3) as follows:



Chi-Square = (8389.219), df= (2), P-Value= (0.000), Chi-Square/df= (1.210), GFI=(96.5), IFI= (98.9), NFI=(99.9), CFI=(99.5), CFI= (1.000), RMSEA= (0.004)

Figure No. (3): Brand Loyalty Items' Reliability and Consistency Criteria

Figure No. (3) shows the following:

- The factor loading or consistency coefficient, which are the standardized regression weights displayed on the arrows linking the latent variable to each of its observed items. Every item that has a loading coefficient below 0.30 is disqualified. According to that, it was discovered that every item loading in the Brand Loyalty scale was greater than 0.30, with values ranging from 0.96 to 0.98.

- Strong inter-item correlations and high goodness-of-fit indicators in the model demonstrate the scale's excellent validity and inter-consistency, making it a dependable instrument for assessing the variable.

2. A descriptive examination of the variables under investigation:

In order to determine the overall Means of the study variables and Standard Division, as well as to compute frequencies and percentages, the researcher used IBM SPSS Statistic Software Package V. 23. Table No. (3) displays the sample item distribution based on the demographic characteristics of age, income level, and gender as follows:

Table No. (3): The sample items' distribution based on the demographic characteristics

Demographic Variables		Freq.	Perc.
Gender	Male	96	25%
	Female	288	75%
	Total	**384**	**100%**
Age	18-28	175	45.6%
	29-38	120	31.4%
	39-48	50	13%
	49-58	30	7.7%
	59 or above	9	2.3%
	Total	**384**	**100%**
Income Level	7000-20000	210	54.7%
	21000-30000	106	27.6%
	31000-40000	58	15.1%
	Above 40000	10	2.6%
	Total	**384**	**100%**

Source: Based on the findings of statistical analysis, the researcher prepared

The preceding table No. (3) makes clear that:

- 288 people, or 75% of the sample, were females, constitutes the majority of the sample.
- 175 people, or 45.6% of the sample, their ages range between 18 and 29.

- 210 people, or 54.7% of the sample, had incomes between 7000 and 20,000.

The descriptive features of the research variables, which comprise the Mean, Standard Deviation, and Variance, are as follows, as indicated in Table No. (4):

Table No. (4): The research variable's mean, standard deviation, and variance

Variables	Mean	S. D.	V.
Packaging Color	3.678	1.1152	1.328
Packaging Design	4.886	1.496	1.679
Packaging Material	3.330	1.143	1.307
Printed Information	3.917	1.007	1.014
Product Packaging	3.626	1.110	1.234
Perceived Product Quality	3.808	0.897	0.805
Brand Loyalty	3.838	0.903	0.816

Source: Based on the findings of statistical analysis, the researcher prepared

preceding table No. (4) makes clear that:

- The mean of the independent variable Product Packaging was 3.626 with a standard deviation of 1.110 and Variance Coefficient 1.234, indicating a generally favorable trend in the sample answers. Packaging Design, Printed Information, Packaging Color, and Packaging Material were the qualities that were ranked in order of importance for this variable.
- The mean of the mediator variable, Perceived Product Quality, was 3.808 with a standard deviation of 0.897 and Variance Coefficient 0.805, indicating a generally favorable trend in the sample answers.
- The mean of the dependent variable, Brand Loyalty, was 3.838 with a standard deviation of 0.903 and Variance Coefficient 0.816, indicating a generally favorable trend in the sample answers.

3. Hypothesis Testing and Result Analysis:

The following section presents the findings of data analysis, allowing the researcher to confirm whether the hypotheses that form the basis of the study are accurate or not:

3/1 findings of the first hypothesis Test:

3/1/1 Brand Loyalty and the dimensions of Product Packaging are correlated in the following Matrix:

To ascertain how strongly the research variables were related to one other, the researcher used the Pearson Correlation Coefficient. Table No. (5) shows the correlation matrix between the aspects of Product Packaging and Brand Loyalty:

Table No. (5): Brand Loyalty and the dimensions of Product Packaging correlation matrix

Variables	Packaging Color	Packaging Design	Packaging Material	Printed Information	Product Packaging	Brand Loyalty
Packaging Color	1					
Packaging Design	0.970** 0.000	1				
Packaging Material	0.901** 0.000	0.900** 0.000	1			
Printed Information	0.816** 0.000	0.816** 0.000	0.773** 0.000	1		
Product Packaging	0.980** 0.000	0.977** 0.000	0.936** 0.000	0.892** 0.000	1	
Brand Loyalty	0.710** 0.000	0.726** 0.000	0.691** 0.000	0.794** 0.000	0.766** 0.000	1

Source: Based on the findings of statistical analysis, the researcher prepared, which ** denotes the correlation coefficient's significance at the 0.01 significance level.

preceding table No. (5) makes clear that:

- With a correlation coefficient (0.766) at a significance level of 0.01 between Product Packaging and Brand Loyalty, there is a statistically significant positive correlation.
- At a significance level of 0.01 and with a correlation coefficient of (0.710), there is a statistically significant positive correlation between

Brand Loyalty and Packaging Color, one of the dimensions of the independent variable Product Packaging.

- At a significance level of 0.01 and with a correlation coefficient of (0.726), there is a statistically significant positive correlation between Brand Loyalty and Packaging Design, one of the dimensions of the independent variable Product Packaging.
- At a significance level of 0.01 and with a correlation coefficient of (0.691), there is a statistically significant positive correlation between Brand Loyalty and Packaging Material, one of the dimensions of the independent variable Product Packaging.
- At a significance level of 0.01 and with a correlation coefficient of (0.794), there is a statistically significant positive correlation between Brand Loyalty and Printed Information, one of the dimensions of the independent variable Product Packaging.

3/1/2 The Impact of dimensions of Product Packaging on Brand Loyalty:

To ascertain the impact of the link between the research variables, the investigator employed the Multiple Regression Analysis. The following is an illustration of the strength of the Product Packaging' dimensions on Brand Loyalty found in Table No. 6:

Table No. (6): The impact of Product Packaging's various factors on brand Loyalty

Dimension's Variable	B	Beta	T Test	Sig.
(Constant)	3.317		13.691	0.000
Packaging Color	.161	0.206	9.241	0.000
Packaging Design	0.366	0.340	8.058	0.000
Packaging Material	0.141	0.101	7.093	0.000
Printed Information	0.724	0.607	8.937	0.000
R	0.808			
R^2	0.653			
Adjusted R^2	0.647			
F Test	110.443			
Sign.	0.000			

DF	4-380

Source: Based on the findings of statistical analysis, the researcher prepared.

preceding table No. (6) makes clear that:

- The dimensions of Product Packaging and Brand Loyalty have a statistically significant positive correlation (correlation coefficient: 0.808) at the 1% significance level. This indicates that Product Packaging increases Brand Loyalty, which in turn leads to higher rates of Brand Loyalty.
- With a coefficient of determination of (0.647), the dimensions of Product Packaging that were examined contributed by 64.7%, suggesting that the independent variable of Product Packaging significantly influences the shift in Brand Loyalty, as the coefficient of determination explains. Other factors not covered by the technique are responsible for the remaining proportion (35.3%).
- The standardized regression coefficient (Beta) revealed that all dimensions of Product Packaging had a statistically significant linear association with Brand Loyalty, with Printed Information, Packaging Design, Packaging Color, and Packaging Material the greatest influence.

The following figure number (4) illustrates the results of the first main hypothesis as follows:

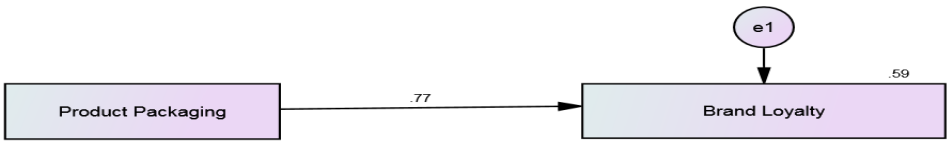


Figure No. (٤): The Impact of Product Packaging on Brand Loyalty

In addition to Figure No. (5) which illustrates the sub-hypotheses of the main hypothesis one as follows:

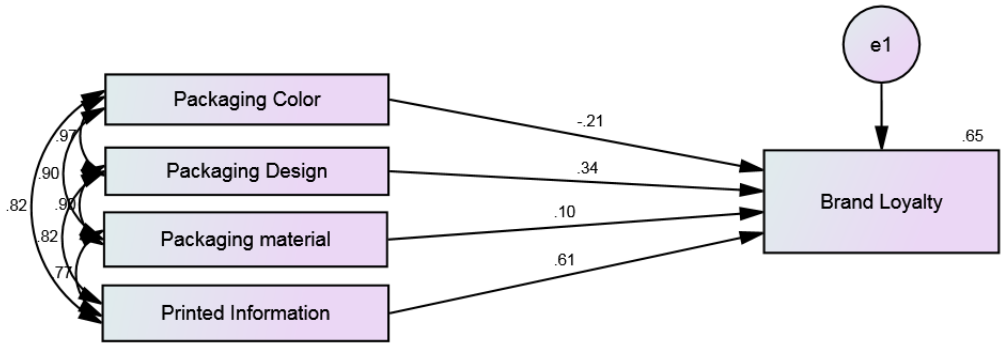


Figure No. (٥): The Impact of dimensions of Product Packaging on Brand Loyalty

In light of the earlier findings, the first hypothesis stated "Product Packaging has a statistically significant effect on Brand Loyalty", and it's sub-hypothesis:

H1a. Packaging Color has a statistically significant effect on Brand Loyalty.

H1b. Packaging Design has a statistically significant effect on Brand Loyalty.

H1c. Packaging Material has a statistically significant effect on Brand Loyalty.

H1d. Printed Information has a statistically significant effect on Brand Loyalty.

3/2 Findings of the second hypothesis Test:

3/2/1 Perceived Product Quality and the dimensions of Product Packaging are correlated in the following Matrix:

To ascertain how strongly the research variables were related to one other, the researcher used the Pearson Correlation Coefficient. Table No. (7) shows the correlation matrix between the aspects of Product Packaging and Perceived Product Quality:

Table No. (7): Perceived Product Quality and the dimensions of Product Packaging correlation matrix

Variables	Packaging Color	Packaging Design	Packaging Material	Printed Information	Product Packaging	Perceived Product Quality
Packaging Color	1					
Packaging Design	0.970** 0.000	1				
Packaging Material	0.901** 0.000	0.900** 0.000	1			
Printed Information	0.816** 0.000	0.816** 0.000	0.773** 0.000	1		
Product Packaging	0.980** 0.000	0.977** 0.000	0.936** 0.000	0.892** 0.000	1	
Perceived Product Quality	0.761** 0.000	0.776** 0.000	0.736** 0.000	0.825** 0.000	0.814** 0.000	1

Source: Based on the findings of statistical analysis, the researcher prepared, which ** denotes the correlation coefficient's significance at the 0.01 significance level.

preceding table No. (7) makes clear that:

- With a correlation coefficient (0.814) at a significance level of 0.01 between Product Packaging and Perceived Product Quality, there is a statistically significant positive correlation.
- At a significance level of 0.01 and with a correlation coefficient of (0.761), there is a statistically significant positive correlation between Perceived Product Quality and Packaging Color, one of the dimensions of the independent variable Product Packaging.
- At a significance level of 0.01 and with a correlation coefficient of (0.776), there is a statistically significant positive correlation between Perceived Product Quality and Packaging Design, one of the dimensions of the independent variable Product Packaging.
- At a significance level of 0.01 and with a correlation coefficient of (0.736), there is a statistically significant positive correlation between Perceived Product Quality and Packaging Material, one of the dimensions of the independent variable Product Packaging.
- At a significance level of 0.01 and with a correlation coefficient of (0.825), there is a statistically significant positive correlation between Perceived Product Quality and Printed Information, one of the dimensions of the independent variable Product Packaging.

3/1/2 The Impact of dimensions of Product Packaging on Perceived Product Quality:

To ascertain the impact of the link between the research variables, the investigator employed the Multiple Regression Analysis. The following is an illustration of the strength of the Product Packaging' dimensions on Perceived Product Quality found in Table No. (8):

Table No. (8): The impact of Product Packaging's various factors on Perceived Product Quality

Dimension's Variable	B	Beta	T Test	Sig.
(Constant)	4.841		23.875	0.000
Packaging Color	0.134	0.241	11.939	0.000
Packaging Design	0.462	0.353	12.353	0.000

Packaging Material	0.177	0.104	10.242	0.000
Printed Information	0.829	0.572	9.285	0.000
R	0.845			
R^2	0.714			
Adjusted R^2	0.710			
F Test	146.937			
Sign.	0.000			
DF	4-380			

Source: Based on the findings of statistical analysis, the researcher prepared.

preceding table No. (8) makes clear that:

- The dimensions of Product Packaging and Perceived Product Quality have a statistically significant positive correlation (correlation coefficient 0.845) at the 1% significance level. This indicates that Product Packaging increases Brand Loyalty, which in turn leads to higher rates of Brand Loyalty.
- With a coefficient of determination of (0.710), the dimensions of Product Packaging that were examined contributed by 71%, suggesting that the independent variable of Product Packaging significantly influences the shift in Perceived Product Quality, as the coefficient of determination explains. Other factors not covered by the technique are responsible for the remaining proportion (29%).
- The standardized regression coefficient (Beta) revealed that all dimensions of Product Packaging had a statistically significant linear association with Perceived Product Quality, with Printed Information, Packaging Design, Packaging Color, and Packaging Material the greatest influence.

The following figure number (6) illustrates the results of the second main hypothesis as follows:

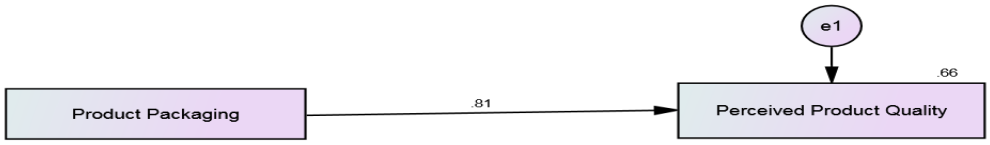


Figure No. (6): The Impact of Product Packaging on Perceived Product Quality

In addition to Figure No. (7) which illustrates the sub-hypotheses of the main hypothesis one as follows:

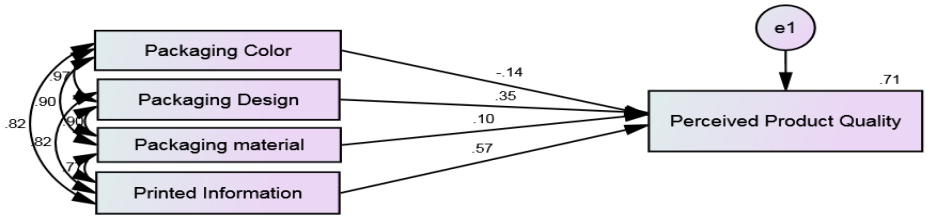


Figure No. (7): The Impact of dimensions of Product Packaging on Perceived Product Quality

In light of the earlier findings, the second hypothesis stated "Product Packaging has a statistically significant effect on Perceived Product Quality", and its sub-hypothesis:

H2a. Packaging Color has a statistically significant effect on Perceived Product Quality.

H2b. Packaging Design has a statistically significant effect on Perceived Product Quality.

H2c. Packaging Material has a statistically significant effect on Perceived Product Quality.

H2d. Printed Information has a statistically significant effect on Perceived Product Quality.

3/3 Findings of the third hypothesis Test:

3/3/1 Perceived Product Quality and Brand Loyalty are correlated in the following Matrix:

To ascertain how strongly the research variables were related to one other, the researcher used the Pearson Correlation Coefficient. Table No. (9) shows the correlation matrix between Brand Loyalty and Perceived Product Quality:

Table No. (9): Perceived Product Quality and Brand Loyalty correlation matrix

Variables	Perceived Product Quality	Brand Loyalty
Perceived Product Quality	1	
Brand Loyalty	0.931** 0.000	1

Source: Based on the findings of statistical analysis, the researcher prepared, which ** denotes the correlation coefficient's significance at the 0.01 significance level.

preceding table No. (9) makes clear that With a correlation coefficient (0.931) at a significance level of 0.01 between Perceived Product Quality and Brand Loyalty, there is a statistically significant positive correlation.

3/3/2 The Impact of Perceived Product Quality on Brand Loyalty:

To ascertain the impact of the link between the research variables, the researcher employed the Simple Regression Analysis. The following is an illustration of the strength of the Perceived Product Quality on Brand Loyalty found in Table No. (10):

Table No. (10): The impact of Perceived Product Quality on Brand Loyalty

Dimension's Variable	B	Beta	T Test	Sig.
(Constant)	0.778		12.054	0.000
Perceived Product Quality	0.766	0.931	39.430	0.000
R	0.931			
R^2	0.867			
Adjusted R^2	0.867			
F Test	1554.729			
Sig.	0.000			
DF	1-383			

Source: Based on the findings of statistical analysis, the researcher prepared.

preceding table No. (10) makes clear that:

- Perceived Product Quality and Brand Loyalty has a statistically significant positive correlation (correlation coefficient: 0.931) at the 1% significance level. This indicates that Perceived Product Quality increases Brand Loyalty, which in turn leads to higher rates of Brand Loyalty.
- With a coefficient of determination of (0.867), Perceived Product Quality that were examined contributed by 86.7%, suggesting that the

independent variable of Perceived Product Quality significantly influences the shift in Brand Loyalty, as the coefficient of determination explains. Other factors not covered by the technique are responsible for the remaining proportion (13.3%).

The following figure number (8) illustrates the results of the third main hypothesis as follows:

Figure No. (8): The Impact of Perceived Product Quality on Brand Loyalty

In light of the earlier findings, the third hypothesis stated "Perceived Product Quality has a statistically significant effect on Brand Loyalty".

3/4 Findings of the fourth hypothesis Test:

3/4/1 Product Packaging and Perceived Product Quality and Brand Loyalty are correlated in the following Matrix:

To ascertain how strongly the research variables were related to one other, the researcher used the Pearson Correlation Coefficient. Table No. (11) shows the correlation matrix between the Product Packaging and Brand Loyalty and Perceived Product Quality:

Table No. (11): Product Packaging and Perceived Product Quality and Brand Loyalty correlation matrix

Variables	Product Packaging	Perceived Product Quality	Brand Loyalty
Product Packaging	1		
Perceived Product Quality	0.814** 0.000	1	
Brand Loyalty	0.766** 0.000	0.931** 0.000	1

Source: Based on the findings of statistical analysis, the researcher prepared, which ** denotes the correlation coefficient's significance at the 0.01 significance level.

preceding table No. (11) makes clear that with a correlation coefficient from (0.766) to (0.931) at a significance level of 0.01 between Product Packaging and Perceived Product Quality and Brand Loyalty, there is a statistically significant positive correlation between the research's Variables.

3/4/2 Sobel Test

This test was used by the researcher to assess the significance of the indirect relationships between the dependent variable (Brand Loyalty) and the independent variable (Product Packaging) within the mediator variable (Perceived Product Quality). One can conclude that there is a genuine indirect influence of the mediating variable in the relationship between the independent and dependent variables if the Z-Value is higher than 1.96. This figure is based on the standard errors and unstandardized regression coefficients of the connection between the dependent variable (Brand Loyalty) and the independent variable (Product Packaging), The results of this test are displayed in table No. (12) below, together with the unstandardized regression coefficients and standard errors of the association between the mediating variable (Consumer Trust) and the dependent variable (Brand Loyalty):

Table No. (12): The Findings of Sobel Test

Variables	Effect	S.E.	Z-Value	P-Value

Product Packaging → Perceived Product Quality → Brand Loyalty	0.965	0.001	13.548	0.000

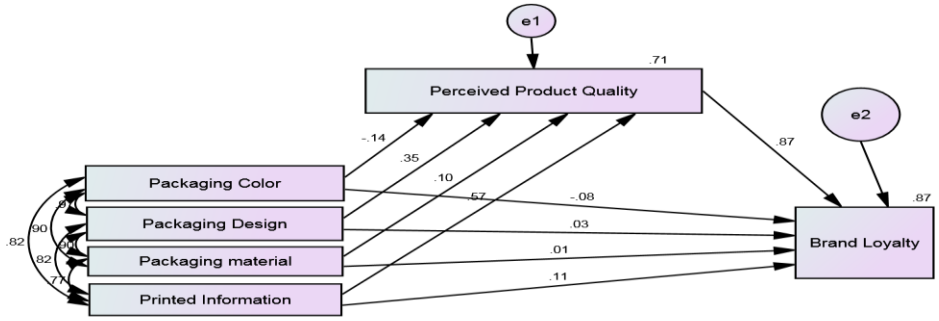
Source: Based on the findings of statistical analysis, the researcher prepared.

With a value of 96.5%, Table No. (12) shows that the current study model has a powerful and indirect effect that is statistically significant. At a significance level of 0.000, the Sobel Teat Value was 13.548, and the path is: **Product Packaging → Perceived Product Quality → Brand Loyalty**

3/4/3 The Impact of Perceived Product Quality has a mediating effect between Product Packaging and Brand Loyalty:

The AMOS Program V. 23 with the Maximum Likelihood Estimates method, which enables the analysis of the greatest number of distinct data and the estimation of the means of the exogenous variables and their inclusion in the regression equation, was used by the researcher to test the research model and the impact relationships using the Structural Equation Modeling (SEM) approach. This is done in order to validate the premise that "the relationship between Product Packaging and Brand Loyalty is mediated by Perceived Product Quality".

The parameter values of the causal relationship paths between the variables of the study model are shown in Figure No. (9). A full match between the tested model and the saturated model was evidenced by the high model fit indices, which demonstrated the model's dependability in explaining the causal links between the variables and its high efficiency in explaining the relationships.



Chi-Square = (16542.254), df= (27), P-Value= (0.000), Chi-Square/df= (0.854), GFI=(1.000), IFI= (96.2), NFI=(97.9), CFI=(99.7), CFI= (1.000), RMSEA= (0.005)

Figure No. (9): Product Packaging Items' Reliability and Consistency Criteria

The following are the parameters of the structural equation for the path of relationships between the study variables and their importance, as displayed in Table No. (13):

Table No. (13): The Structural Equation Parameters' outcomes

Dependent Variable	Product Packaging	B	S.E.	C.R.	Beta	Direct Effect	Indirect Effect	Total Effect	P-Valu
Perceived Product Quality	Packaging Color	0.132	0.014	18.947	0.472	0.134	--	0.134	0.000
	Packaging Design	0.184	0.019	27.373	0.306	0.462	--	0.462	0.000
	Packaging Material	0.197	0.089	29.364	0.403	0.177	--	0.177	0.000
	Printed Information	0.178	0.041	30.252	0.376	0.429	--	0.829	0.000
Brand Loyalty	Packaging Color	0.125	0.029	40.148	0.385	0.183	0.342	0.525	0.000
	Packaging Design	0.213	0.024	31.601	0.424	0.232	0.345	0.577	0.000

	Packaging Material	0.163	0.016	19.555	0.417	0.110	0.215	0.325	0.000
	Printed Information	0.192	0.011	20.191	0.370	0.108	0.359	0.467	0.000

Source: Based on the findings of statistical analysis, the researcher prepared.

The preceding table No. (13) makes it clear that:

- The dimensions of Product Packaging have a direct positive significant impact on Perceived Product Quality, with direct paths of 0.134, 0.462, 0.177, and 0.429 at a significant level of 0.001, and on brand loyalty, with direct paths of 0.183, 0.232, 0.110, and 0.108 at a significant level of 0.001.
- The fourth hypothesis, which discusses the function of Perceived Product Quality as a mediator variable in the relationship between Product Packaging and Brand Loyalty, is explained by the existence of variations in the overall and direct effects of the dimensions of Product Packaging on Brand Loyalty. The dimensions of Product Packaging have a significant indirect positive impact on Brand Loyalty, with respective indirect paths of 0.342, 0.345, 0.215, and 0.359 at a significant threshold of 0.001.
- The dimensions of Product Packaging have a substantial positive overall impact on Brand Loyalty at a significant level of 0.001, the total effect paths are 0.525, 0.577, 0.325, and 0.467, respectively.

The following figure number (10) illustrates the results of the third main hypothesis as follows:

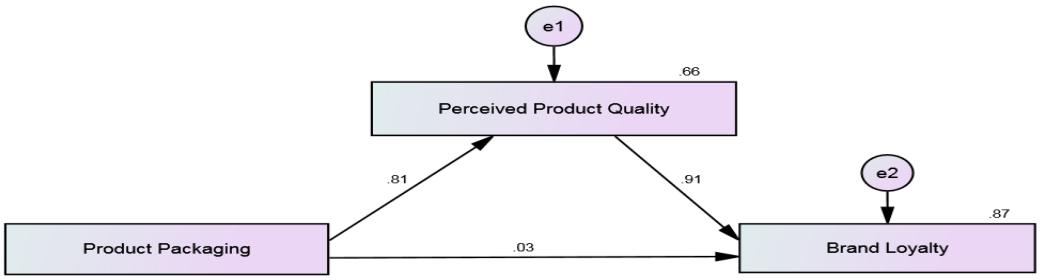


Figure No. (١٠): The Impact of Perceived Product Quality on Brand Loyalty

In light of the earlier findings, the fourth hypothesis stated "Perceived Product Quality has a mediating effect between Product Packaging and Brand Loyalty".

4. Assessing the Significant variations based on demographic variables:

To identify the significant differences based on the demographic factors represented by gender, income level, and age, the researcher used the T test and the ONE-WAY ANOVA test. The test results are displayed as follows in Table No. (14):

Table No. (14): The outcomes of evaluating the Significant variations

Variables	F Test	Sig.
According to Gender		
Product Packaging	43.879	0.000
Perceived Product Quality	48.366	0.000
Brand Loyalty	42.461	0.000
According to Age		
Product Packaging	0.902	0.463

Perceived Product Quality	0.659	0.621
Brand Loyalty	0.819	0.514
According to Income Level		
Product Packaging	2.167	0.093
Perceived Product Quality	1.900	0.130
Brand Loyalty	1.712	0.165

Source: Based on the findings of statistical analysis, the researcher prepared.

The preceding table No. (14) makes it clear that:

4/1 Gender:

- There are statistically significant differences between the respondents' opinions on the independent variable Product Packaging based on the demographic variable Gender, as indicated by the significance value (0.000), which is less than 0.05.
- There are statistically significant differences between the respondents' opinions on the independent variable Perceived Product Quality based on the demographic variable Gender, as indicated by the significance value (0.000), which is less than 0.05.
- There are statistically significant differences between the respondents' opinions on the independent variable Brand Loyalty based on the demographic variable Gender, as indicated by the significance value (0.000), which is less than 0.05.

4/2 Age:

- There are statistically significant differences between the respondents' opinions on the independent variable Product Packaging based on the demographic variable Age, as indicated by the significance value (0.463), which is more than 0.05.
- There are statistically significant differences between the respondents' opinions on the independent variable Perceived Product Quality based on the demographic variable Age, as indicated by the significance value (0.621), which is more than 0.05.
- There are statistically significant differences between the respondents' opinions on the independent variable Brand Loyalty based on the

demographic variable Age, as indicated by the significance value (0.514), which is more than 0.05.

4/3 Income Level:

- There are statistically significant differences between the respondents' opinions on the independent variable Product Packaging based on the demographic variable Income Level, as indicated by the significance value (0.093), which is more than 0.05.
- There are statistically significant differences between the respondents' opinions on the independent variable Perceived Product Quality based on the demographic variable Income Level, as indicated by the significance value (0.130), which is more than 0.05.
- There are statistically significant differences between the respondents' opinions on the independent variable Brand Loyalty based on the demographic variable Income Level, as indicated by the significance value (0.165), which is more than 0.05.

Discussion

The findings of this study underscore the critical role of perceived product quality as a mediating factor in the relationship between product packaging and brand loyalty. The results revealed that product packaging has a significant positive impact on both perceived quality and brand loyalty, highlighting the importance of packaging as a strategic tool in brand positioning. Furthermore, the mediating effect of perceived quality suggests that consumers' perceptions of a product's quality, shaped by its packaging, play a pivotal role in fostering brand loyalty. This implies that packaging does more than serve a functional purpose; it also acts as a visual and tactile cue that influences consumer evaluations and loyalty behaviors. These insights offer valuable implications for marketers and product designers aiming to enhance customer retention through packaging strategies that elevate quality perceptions.

References

Aslam, M. M. (2006). Are you selling the right colour? A cross-cultural review of color as a marketing cue. Journal of Marketing Communications, 12(1), 15-30. DOI: 10.1080/13527260500247827

Aydin, S., & Özer, G. (2005). The analysis of antecedents of customer loyalty in the Turkish mobile telecommunication market. European Journal of Marketing, 39(7/8), 910-925.DOI: 10.1108/03090560510601833

B.Fabian, D. R. (2023). Product Quality Perception, Customer Satisfaction, and Customer Loyalty on green Products. *International Journal of Research in Education Humanities and Commerce, 4*(4), 200-206. DOI:10.37602/IJREHC.2023.4418

Babin, B. J., Hardesty, D. M., & Suter, T. A. (2003). Color and shopping intentions: The intervening effect of price fairness and perceived affect. Journal of Business Research, 56(7), 541-551.DOI: 10.1016/S0148-2963(01)00246-6

Becker, L., Van-Rompay, T. J., Schifferstein, H. N., & Galetzka, M. (2011). Tough package, strong taste: The influence of packaging design on taste impressions and product evaluations. Food Quality and Preference, 22(1), 17-23.DOI: 10.1016/j.foodqual.2010.06.007

Butkeviciene, V., Stravinskiene, J. & Rütelione, A. (2008). Impact of consumer package communication on consumer decision making process. Economics of Engineering Decisions, 1(56), 57-65.

Calvo-Porral, C. (2015). Switching behavior and customer satisfaction in mobile services: Analyzing virtual and traditional operators. Computers in Human Behavior, 49, 532–540

Coulson, N., S., (2000). An Application of the Stages of Change Model to Consumer Use of Food Labels. British Food Journal, 102(9), 661-668.DOI: 10.1108/00070700010362031

Cronin JJ & Taylor SA (1992). Measuring service quality: a reexamination and extension. Journal of Marketing, 56, 55-58.

Gök, O., Ersoy, P., & Börühan, G. (2019). The effect of user manual quality on customer satisfaction: The mediating effect of perceived product quality. Journal of Product & Brand Management, 28(4), 475–488. DOI:10.1108/JPBM-10-2018-2054

Grossman, R.P. & Wisenblit, J.Z. (1999). What we know about consumers' color choices. Journal of Marketing Practice: Applied Marketing Science, 5(3), 78-88.DOI: 10.1108/EUM0000000004565

Hanifati, L. N., & Salehudin, I. (2021). The Effect of P ect of Perceived Product Quality oduct Quality, Brand Personality ersonality, and Loyalty on Brand Switching Intention of T and Switching Intention of Technological Pr echnological Products. *The South East Asian Journal of Management, 15*(2), 169-187. doi:10.21002/seam.v15i2.13336

Hausman, A. (2000). A multi-method investigation of consumer motivations in impulse buying behavior. Journal of Consumer Marketing, 17(5), 403-419.DOI: 10.1108/07363760010341045

Johnson, M. D., & Ettlie, J. E. (2001). Technology, customization, and reliability. *Journal of Quality Management*, *6*(2), 193-210.DOI: 10.1016/S1084-8568(01)00037-2

Kauppinen-Räisänen, H., & Luomala, H. T. (2010). Exploring consumers' product-specific colour meanings. Qualitative Market Research: An International Journal, 13(3), 287-308.DOI: 10.1108/13522751011053644

Kupiec, B., & Revell, B. (2001). Measuring consumer quality judgements. British Food Journal, 103(1), 7-22.DOI: 10.1108/00070700110382911

Lin, M., & Lee, B. Y. (2012). The influence of website environment on brand loyalty: Brand trust and brand affect as mediators. International Journal of Electronic Business Management, 10(4), 308–321.

Parasuraman, A., Zeithaml V & Berry L (1996). The behavioral consequences of service quality. Journal of Marketing, 60, 31-46.DOI: 10.1177/002224299606000203

Raheem, A., R., Ahmad, N., Vishnu, P., & Imamuddin, K., (2014). Role of Packaging and Labeling on Pakistani Consumers Purchase Decision. European Journal of Scientific Research, 10(16), 464-473.

Rundh, B., (2007). The Multi-Faceted Dimension of Packaging: Marketing Logistic or Marketing Tool?, British Food Journal, 107(9), 670-684.

Severt, K., Shin, Y. H., Chen, H. S., & DiPietro, R. B. (2020). Measuring the relationships between corporate social responsibility, perceived quality, price fairness, satisfaction, and conative loyalty in the context of local food restaurants. International Journal of Hospitality & Tourism Administration, 1–23. DOI:10.1080/15256480.2020.1842836

Silayoi, P., & Speece, M. (2004). Packaging and purchase decisions: An exploratory study on the impact of involvement level and time pressure. *British food journal*, *106*(8), 607-628.DOI: 10.1108/00070700410553602

Silayoi, P., & Speece, M., (2007). The importance of packaging attributes: A conjoint analysis approach. European Journal of Marketing, 41(11/12), 1495-1517.DOI: 10.1108/03090560710821279

Solin, A., & Curry, A. (2023). Perceived quality: in search of a definition. *The TQM Journal*, *35*(3), 778-795.DOI: 10.1108/TQM-09-2021-0280

Underwood, R. L., (2003). The Communicative Power of Product Packaging: Creating Brand Identity via Lived and Mediated Experience. Journal of Marketing Theory and Practice, 11(1), 62-76

Waheed, S., Khan, M. M., & Ahmad, N. (2018). Product Packaging and Consumer Purchase Intentions. *Market Forces, 13*(2), 97-114. Retrieved from https://marketforcesjournal.kiet.edu.pk/index.php/marketforces/article/view/376