



Original Research

## Influence of Product Design on Consumer Purchase Decisions

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### ABSTRACT

The purpose of this study was to determine how much product packaging or design influences consumers' decisions to purchase goods. This study aims to determine how product design influences consumer choice. Data from questionnaires and interviews were gathered for the study, and after being examined using percentage distribution tables, the results were eventually displayed graphically. The researcher made the following proposal so that businesses would succeed: they should prioritize the happiness of their customers over the pursuit of profit or other benefits. This means that since a company's product design is one of the main aspects luring customers to purchase its goods, it is imperative that it take great care of it and put in great effort to achieve as a business.

## 1. Introduction

The success of the business depends more and more on the product design. Products' visual appearance has become a key differentiator from the competition as functional elements on them become more and more similar (Kotler, 2001; Crilly et al., 2004; Alam et al., 2023). Over time, research on product design has continued to expand in tandem with its growing significance (Sunny et al., 2017; Hossain et al., 2023; Ferdous et al., 2023). The research in this field is still far from finished, despite the growing interest in the subject. For example, there isn't even a single, widely accepted meaning for the word "product design" (Wang et al., 2010; Homburg et al., 2015). At the time of sale, packaging design influences decisions about what to buy and acts as a salesperson for the product. Legislative and regulatory restrictions dictate which package features must be present. Furthermore, the packaging serves a variety of purposes, including drawing in customers, informing them, and shielding the products from the elements (Alam et al., 2023). The

various design elements meet these packing functions. Certain studies have assigned duties to certain parts of packaging design, including colour, picture, form, material, label, and typography, as well as consumer perception. Customers are meant to understand a product's shape or external appearance (Sunny et al., 2020). A thing's form creates an initial impression and influences judgements about its other attributes.

Size has an impact on the information displayed and the package's visibility. Package dimensions, shape, and elongation affect customer decisions and judgements (Kuddus et al., 2021). Layout, color schemes, typography, and product photography are examples of graphics. These help to create an image and have an impact on marketing, customer mindset, and brand communication. Color can be used to distinguish brands visually and identify brands. According to (Singh, 2006), color influences advertising in a variety of ways, including elegance and other attributes. It also plays a significant role in how easy it is to read the text and understand the pictures on the package. The content shapes consumers' perceptions of quality (Kuddus et al., 2022). Strong design tools for communicating product functionalities, emphasizing product differences, and conjuring up strong visuals include photographs and illustrations on the box (Kuddus et al., 2020). Research indicates that it is possible to control the product's imagery and placement by choosing and implementing certain design features (Mahbub et al., 2024). This will have an impact on how consumers view the goods and have a direct impact on their purchasing choice. A few research have looked into the packaging of food and processed goods. The literature on packaging and how it affects consumers of fashion products is scarce. We'll assess the significance of package design elements for their like, select, buy, memory, attention span, and brand communication. Furthermore, when it comes to product brands, the twenty-first century heralds significant shifts in the marketing tactics used by institutions and organizations to stay viable and competitive in the volatile markets they operate in. Modern consumers live in a world where large-scale, continuous purchases of products and services are commonplace. Businesses today depend on the abundance of information that is painstakingly gathered by the former about the purchasing behaviours that clients display in order to thrive. Companies are very interested in building strong brands that result in enduring client interactions if they want to thrive in the market. Businesses devote a significant amount of time and resources to researching behavioral and sociological aspects in order to learn more and comprehend the buying habits of their customers. Therefore, brands are essential resources for businesses.

Nowadays, branding is regarded as an essential corporate asset and is integrated into modern marketing strategies (Kotler, 2001). Examples of how marketing has changed are companies that have moved from concentrating on their markets or products to concentrating on their clients or consumers. As a result of this paradigm shift, companies are investing a lot of resources in finding out as much as they can about how their customers view the four Ps: product, price, place, and promotion—as well as the three Ps: process, concrete evidence, and more people (Kotler and Armstrong, 2001). Additionally, they focus on demonstrating the relationship between consumer spending and the critical components of attitudes, perception, cognition, and learning that influence customer preferences. Their curiosity lies in discovering the identities, sentiments, and

rationales behind their customers' brand preference. 2. Brand management is handled by a specialist brand manager in businesses. Customers and the company's brand use it as a conduit. In the competitive economy of today, where consumers have access to a wealth of information about goods and services, shouting louder is not a solution to being heard or acknowledged. Instead of creating a memorable brand that resonates with consumers. Based on this, the current study aims to ascertain what elements influence customers' product choices as well as how product design effects consumers' intents to buy, views about brands, and behaviour.

### *1.1 Customer attitudes on package design*

According to Giles (2004), packaging is increasingly recognized as a dynamic and forceful sales tool that may stand out from the crowd and close deals at the time of sale rather than a passive functional item. Furthermore, given the prominence of branding, a brand's packaging frequently serves as the physical embodiment of its values, identity, and face. An attempt is made to distinguish these qualities and characteristics, as well as to comprehend how consumers view them, before modifying packaging design to convey them. Making sure the consumer's impression of the brand is reflected on the pack depends heavily on packaging design. Just like with goods purchases, consumers also make brand purchases. When creating their package solutions, skilled packaging designers make use of their knowledge of the marketing mix (Giles, 2004). It's a difficult undertaking, but occasionally the outcome is a design solution that provides a brand owner with a tool that functions comprehensively across many media. In addition to aesthetic appeal, it is beneficial to include one or more product features on the package, according to (the United States Patent Patent No. 7,805,846). Customers have a greater chance to appreciate it thanks to it. As an illustration, consider packaging that enables users to engage with a product in some way, such as activating or manipulating it. On the other hand, the product is on display inside the package, giving customers a chance to evaluate its features and capabilities. Packaging designers need to be aware of the various "shouts" that need to be used in their designs in order to try and raise awareness of a product.

### *1.2 Packaging: a tactical instrument for marketing*

Packaging expresses, the personality of the brand through a range of structural and visual elements, including the product descriptions, shapes, colors, fonts, package materials, pictorials, and other elements that establish strong brand connections. Among the symbols that the package may produce and communicate are convenience, environmental consciousness, ethnicity, family, health consciousness, national and regional authenticity, nostalgia, status, value, and quality differences. Moreover, unlike the symbolic resource base (mediated experience) that advertising provides, packaging exists as a dual-extended resource base (mediated and lived experience). Package image, which is produced by design continuity and the social meaning attached to package design elements (such color and shape), is one of the most significant mechanisms in the general social view of the brand. This phenomenon serves as an example of a mediated experience. Packaging is a three-dimensional, tactile marketing communication tool that is often closely tied to the ongoing

success of the product offering. This is an example of a lived relationship between the client and the brand; the package remains in the house and may learn to know the customer well (Lin, 2015). Packaging functionality refers to how well it matches its intended use. The duties of packages are associated with their psychological function, which involves their interaction with the consumer, as well as their physical attributes throughout the production stage and during product preservation. 1. The package's goal in this instance is to attain integrity. It indicates that the product does not alter its fundamental form or function as a result of outside influences. Containment is an ongoing effort from the point of production to the customer and end user in the product life cycle. The ability of the package "to contain" to boost customer confidence in the product and its contents makes it convenient and advantageous for the consumer. 2. One of the most important purposes of packing is to protect the goods. In addition to physical elements like transportation, environmental factors including moisture, gasses, light, temperature, and others are also protected against. In this case, the package selection is based on the kind of commodities, how they will be distributed, and what kinds of risks they will face. A product may benefit from this feature in a number of ways, including increased freshness and shelf life. 3. Information about the goods is what identification is there to give the customer. Product use and legally required details are included in the product identity, which also specifies the contents. This function may, in part, play a promotional role in encouraging consumers to buy a product and may also help with product branding (Silayoi & Speece, 2007).

### *1.3 Impact of Packaging Design on Consumer Buying Patterns*

Long acknowledged as the market's silent salesman, design has recently been the subject of extensive regulation. However, these restrictions mostly disregard the nonverbal components of product labels. The verbal components of a package accurately convey the attributes of the product. On the other hand, nonverbal elements can be employed to bolster or undermine the marketer's overt verbal assertions or to produce conclusions that might contradict the spoken wording (Bone, 2001). This nonverbal communication may be subtle, yet it's still quite significant. Therefore, it is essential for food firms and their marketers to be able to creatively adjust the package design elements in order to promote the "healthy" message when trying to position a food product as such. Food packages must be aesthetically pleasing to consumers who are looking for nutritious food products (Sioutis, 2011). The idea of brain laterality in processing information (verbal & visual) under conditions of quick perception about product packages was outlined by Rettie & Brewer, 2000. The authors investigated the connection between the recall of those features and the placement of verbal and visual text on various pack sides. The findings indicated that images should be on the left of packets and words on the right in order to maximize recall. The imbalance in how packaging features are perceived was validated by the results. The use of intelligent packaging will probably be influenced by societal and consumer variables in the future. Information on packaging will become more and more necessary, so the way it is provided will need to alter. Customers are becoming more and more interested in knowing what components or ingredients a product contains as well as how to use and preserve it (Azom, 2003).

## **2. Research Methodology**

### *2.1. Research Design*

A research design, according to Kothari (2004), is the configuration of parameters that successfully tackles the research topic. A research design is also a conditional arrangement for collecting and interpreting data to disperse the results of any sample (Pandey & Pandey, 2015). As a result, this study will use a descriptive research design with frequency analysis. The concept or conclusions will be demonstrated with percentages, tables, and graphs. To be certain and competent to characterize the features of the variables of interest in a situation, descriptive research will be done. The study's descriptive research design was chosen because it allowed for a thorough examination of how product design affected consumers' decisions.

### *2.2. Research Approach*

According to (Saunders et al., 2019), there are two fundamental methods for conducting research: quantitative and qualitative. On the other hand, the qualitative method of data collection, which involves focus groups, open-ended questions, and interviews, aims to provide a profound and thorough description of a phenomenon. The quantitative approach may be able to summarize characteristics that are shared by links or groups by accounting for a bigger sample size. Considering that the main objective of this research is to obtain descriptive data from the survey utilizing both qualitative and quantitative methodologies.

### *2.3. Research Population*

The audience, occasions, or subjects of interest that the researcher has chosen to study make up the population. A target population or universe refers to all of the subjects of observations, which is the primary group from which a sample is to be generated (Pandey & Pandey, 2015). This research study will include all of Bangladesh's registered businesses that deal with goods and, as a result, package goods in various ways.

### *2.4. Sampling design*

There will be multiple sample stages for this project. The first step involves selecting registered businesses that sell goods in Bangladesh based on their location and sales volume. Purposive sampling will be utilized to choose these businesses. A sample of respondents from those registered companies will be contacted for the second round of selection. Owing to their status and expertise in product designs and sales, a subset of respondents will be selected via the purposive sampling technique. Lastly, additional respondents will be chosen at random by these companies to respond to the topic.

### *2.5. Sample Size*

A purposeful selection of three registered companies offering distinct products will be made based on factors such as sales volume and geography. The study's sample size will consist of 100

respondents since each chosen commercial bank will have 20 respondents who will be approached for their responses. Soft drink companies Mirinda, Fanta, and Tingo will be contacted.

### *2.6. Data collection Methods*

To gather pertinent data for the study, primary and secondary data collection techniques must be used. Participatory observation, surveys, structured and unstructured interviews, and documentary sources are all used in this.

#### *2.6.1. Questionnaire*

A questionnaire can be defined as a tool used to record, elicit, and gather data. According to Kothari (2004), questionnaires produce data in an organized and methodical manner. As a result, both organized and unstructured questions will be included in my study questionnaire.

### *2.7. Data Analysis*

Descriptive statistics such as frequency distribution tables, percentages, and charts will be used to organize and analyze the data. After that, a descriptive method will be used to convey the analyses. Lastly, EXCEL and SPSS will be used for trend analysis and descriptive analysis, respectively.

### *2.8. Research Ethics*

Utilizing secondary data in research reduces the burden on participants, maximizes the return on public (or any) investment in data gathering, and ensures that study findings can be replicated, making it a highly ethical practice in and of itself. Given this, the research will ensure both the integrity of the study to conduct ethical research and enhanced transparency of the methodologies employed in the study.

## **3. Results**

### *3.1. Gender of respondents*

There were 100 respondents in the sample size for this study; of those contacted, 45% were women and 55% were men. This result indicates that there were more male respondents than female respondents among the contacted respondents. Consequently, it can be observed that there were more male employees in the companies contacted for this study than there were female employees. Since random sampling was used for the sampling process, all respondents had an equal chance of being chosen (Table-1).

### *3.2. Education qualification of respondents*

Regarding educational qualifications, of the respondents who were contacted, thirty percent had a diploma, fifty percent had a degree, and the remaining twenty percent had a master's degree. In this instance, every person who was approached for the study was well-educated enough to respond to the research questions, and as a result, the conclusions drawn from their responses about the study's objectives should be trusted (Table-2).

**Table 1. Gender of respondents**

Gender	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Male	55	55.0	55.0	55.0
Female	45	45.0	45.0	100.0
Total	100	100.0	100.0	

**Table 2. Educational qualification of respondents**

Degree	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Diploma	30	30.0	30.0	30.0
Degree	50	50.0	50.0	70.0
Masters	20	20.0	20.0	100.0
Total	100	100.0	100.0	

**Table 3. Age group of respondents**

Time	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 20–29 years	8	8.0	8.0	8.0
30–39 years	45	45.0	45.0	53.0
40–49 years	42	42.0	42.0	95.0
50–59 years	5	5.0	5.0	100.0

Total	100	100.0	100.0
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Regarding age distribution, the majority of respondents who were contacted for this study were in the 30-to 49-year-old range. In this instance, respondents who were between the ages of 30-39 made up 45% of all respondents, while those who were 40–49 were in the 40–49 age range. Eight percent of the total respondents were between the ages of 20 and 29, while the remaining five percent were between the ages of 50 and 59 (Table-3).

### 3.3. Years of experience of contacted respondents

Of the respondents who were contacted, 62% had been in the field for five to ten years, 18% had been in the field for eleven to twenty years, and the remaining 20% had been in the field for one to four years. This means that the majority of responders had five to ten years of experience, on average (Table-4).

**Table 4. Years of experience of contacted respondents**

Time	Frequency	Percent	Valid Percent	Cumulative Percent
1–4 years	20	20.0	20.0	20.0
5–10 years	62	62.0	62.0	82.0
11–20 years	18	18.0	18.0	100.0
Total	100	100.0	100.0	

### 3.4. Influence of product design on brand choice of consumer

When asked if product design influences consumers' choices of brands, 95% of respondents said that it does, while only 5% disagreed with the statement (Table-5). In this instance, it appears that product design greatly influences the brand that consumers choose.

### 3.5. Influence of product design on purchase intention of consumer

Based on the table 6, it can be observed that 98% of respondents agree that product design influences consumers' intentions to purchase, whereas 2% disagree that product design influences consumers' intentions to purchase (Table-6). Thus, it may be concluded that product design generally has a significant impact on purchase intention.



**Table 5. Does product design influence brand choice by consumers?**

<b>Response</b>	<b>Frequency</b>	<b>Percent</b>	<b>Valid Percent</b>	<b>Cumulative Percent</b>
Valid Yes	95	95.0	95.0	95.0
No	5	5.0	5.0	100.0
Total	100	100.0	100.0	

**Table 6. Does product design influence the purchase intention of consumers?**

<b>Response</b>	<b>Frequency</b>	<b>Percent</b>	<b>Valid Percent</b>	<b>Cumulative Percent</b>
Valid Yes	98	98.0	98.0	98.0
No	2	2.0	2.0	100.0
Total	100	100.0	100.0	

### *3.6. Influence of brand on consumer behaviour*

Given that 92% of respondents concur that brand names have an impact on consumer behaviour and only 8% disagree, the results table above demonstrates that brand names also have an impact on customer behaviour (Table-7). Large, well-known brands typically have a larger following and a higher number of customers, which translates into more people buying their items.

### *3.7. Influence of consumer preference on consumer choice*

Respondents were asked if consumer preference influences consumer choices and responses were that 85% agreed that consumer preferences have influence on consumer choices while 15% did not agree on this proposition (Table-8).

**Table 7. Does the brand name influence consumer behaviour?**

Response	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Yes	92	92.0	92.0	92.0
No	8	8.0	8.0	100
Total	100	100.0	100.0	

**Table 8. Does the brand name influence consumer behaviour?**

Response	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Yes	85	85.0	85.0	85.0
No	15	15.0	15.0	15.0
Total	100	100.0	100.0	

## 4. Discussion

### 4.1. Effect of product design on the altitude of brand choice

Considering all of the firms that replied to the survey, 98% of them agreed that product design had an impact on brand choice attitude. This finding pertains to the study's first purpose, which was to ascertain how product design affects brand choice attitude. In this case, product design has a significant impact on brand choice altitude, which in turn influences consumer preference for the brand (Alam et al., 2023).

### 4.2. Effect of product design on intention to buy

With respect to the second objective of this research, which was to ascertain the impact of product design on brand choice attitude, the findings show that, when considering every firm that participated in the survey, 95% of them agreed that product design has an influence on purchase intentions (Ferdous et al., 2023). In this case, the product design has a big impact on a consumer's

intention to buy the product and, as a result, their decision to buy it (Sioutis, 2011).

#### *4.3. Brand's influence on consumer behaviour*

This study's third objective was to ascertain how brands influence consumer behavior. The findings show that 92% of respondents felt that brands had an impact on customer behavior when all the companies contacted were taken into consideration (Sioutis, 2011). In this particular case, a buyer's choice to buy or prefer one brand name over another is a significant factor in consumer behaviour.

#### *4.4. Factors impacting the selection of products by customers*

Regarding the study's fourth goal, which is to identify the variables that affect consumers' product choices, the findings have shown that company brands, product designs, advertisements, product quality, corporate social responsibility, customer service, aftercare services, online services, and product prices all have an impact on consumer behavior (Wang et al., 2010). This is because every one of the previously mentioned criteria has proven to have a significant impact on the variables influencing consumers' choices of which products to buy (Alam et al., 2023).

### **5. Conclusion and Recommendations**

Based on its findings, which answer its research objectives and research questions, this study concludes that product design affects brand choice, customer purchase intention, and general consumer behavior. In addition, a company's brand, product design, advertisement, quality of products, corporate social responsibility, customer care, aftercare services, internet services, and product costs can all have an impact on a consumer's decision about which product to buy and how they behave overall. The study's findings show how product design affects customers' choices to buy a company's products. Customers' perceptions of the concept and their increased interest in and concern for the product design are the reasons behind this. Customers find this to be very appealing, and firms are in direct competition with one another on it. This illustrates how companies can thrive and attract a substantial customer base by virtue of the products or services they provide. This study shows that product design, a key element in both customer acquisition and retention, is helping businesses attract and keep consumers. This is a very significant criterion, even though there are other factors that attract customers. This study looked at every other factor that persuades customers to buy products from companies, and we assessed and calculated the likelihood of each. Businesses can achieve success by attracting a wide range of customers and increasing their sales volume when they pay serious thought to product design. Ultimately, companies want to satisfy their customers and make sales.

This survey indicates that businesses should prioritize branding, product design, advertising, quality, corporate social responsibility, aftercare services, internet services, customer service, and product prices in order to boost sales and profitability. This survey clearly shows that companies

can thrive when they genuinely think about what their customers want and what makes them happy. This is important, and companies should be keeping an eye on it since the study highlights the areas in which they should focus and implement changes to attract and retain customers. Companies may do their hardest to sell products, maximize earnings, and take into account the demands of both their clients and themselves. It's not enough to simply advertise their products; you also need to ensure that your customers are taken into consideration. To accomplish this, ask them what makes your products appealing to them and how you can improve their positive experiences with the company. Since customers are a company's most significant asset, they should constantly be the center of attention during development and stage changes. They depend on them as regular clients, therefore they would be helpless without them (Hossain et al., 2023).

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### **Author Contribution**

Every author participated in the conceptualization, fieldwork, data analysis, study design, and execution phases of the work. Upon reviewing the final publication, each author provided their approval.

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The authors declare that none of the work reported in this study could have been impacted by any known competing financial interests or personal relationships.

### **References**

- Alam, K., Chowdhury, M. Z. A., Jahan, N., Rahman, K., Chowdhury, R., Mia, M. T., & Mithun, M. H. (2023). Relationship between Brand Awareness and Customer Loyalty in Bangladesh: A Case Study of Fish Feed Company. *Journal of Knowledge Learning and Science Technology* ISSN: 2959-6386 (online), 2(3), 212-222. <https://doi.org/10.60087/jklst.vol2.n3.p222>
- AZoM. (2003). Smart Packaging – Intelligent Packaging for Food, Beverages, Pharmaceuticals and Household Products. Retrieved from [www.azom.com: http://www.azom.com/article.aspx?ArticleID=2152](http://www.azom.com/article.aspx?ArticleID=2152).
- Bone, F. P and France, R. K. (2001). Package Graphics and Consumer Product Beliefs. *Journal of Business and Psychology*, 15 (3), pp. 467–489. <https://www.jstor.org/stable/25092735>
- Crilly, N., Moultrie, J., & Clarkson, P. J. (2004). Seeing things: Consumer response to the visual

- domain in product design. *Design Studies*, 25(6), 547–577.  
<https://doi.org/10.1016/j.destud.2004.03.001>
- Ferdous, J., Sunny, A. R., Khan, R. S., Rahman, K., Chowdhury, R., Mia, M. Tuhin., Shiam, A. Abdullah., & Mithun, M. H. (2023). Impact of Varying Synthetic Hormone on *Mystus cavasius* (Hamilton): Fertilization, Hatching, and Survival Rates. *Journal of Knowledge Learning and Science Technology ISSN: 2959-6386 (online)*, 2(3), 88-105.  
<https://doi.org/10.60087/jklst.vol2.n3.p103>
- Giles, C. (2004). What is Packaging? Mies, Switzerland: Rotovision SA. Homburg, Ch., Schwemmler, M., & Kuehnl, Ch. (2015). New Product Design: Concept, Measurement, and Consequences. *Journal of Marketing*, 79(3), pp. 41–56.
- Hossain Ifty, S.M., Ashakin, M.R., Hossain, B., Afrin, S., Sattar, A., Chowdhury, R., Tusher, M.I., Bhowmik, P.K., Mia, M.T., Islam, T., Tufael, M. & Sunny, A.R. (2023). IOT-Based Smart Agriculture in Bangladesh: An Overview. *Applied Agriculture Sciences*, 1(1), 1-6. 9563, [10.25163/agriculture.119563](https://doi.org/10.25163/agriculture.119563)
- Kothari, C. R. (2004). *Research methodology: methods and techniques*. New Delhi: New Age International.
- Kotler, P., & Armstrong, G. (2001). John Saunders and Veronica Wong. *Understanding Business: Processes*, 69.
- Kotler. (2001). *Marketing Management*. Engelwood Cliffs: Prentice Hall.
- Kuddus, M. A., Alam, M. J., Datta, G. C., Miah, M. A., Sarker, A. K., & Sunny, M. A. R. (2021). Climate resilience technology for year round vegetable production in northeastern Bangladesh. *International Journal of Agricultural Research, Innovation and Technology (IJARIT)*, 11(2355-2021-1223), 29-36.  
<https://doi.org/10.3329/ijarit.v11i1.54464>
- Kuddus, M. A., Datta, G. C., Miah, M. A., Sarker, A. K., Hamid, S. M. A., & Sunny, A. R. (2020). Performance study of selected orange fleshed sweet potato varieties in north eastern bangladesh. *Int. J. Environ. Agric. Biotechnol*, 5, 673-682.  
<https://dx.doi.org/10.22161/ijeab.53.21>
- Kuddus, M. A., Sunny, A. R., Sazzad, S. A., Hossain, M., Rahman, M., Mithun, M. H., Hasan. E. S., Ahmed, J. K., Zandonadi, P. R., H.H., Antonio. A., Alejandro. V & Raposo, A. (2022). Sense and Manner of WASH and Their Coalition with Disease and Nutritional Status of Under-five Children in Rural Bangladesh: A Cross-Sectional Study. *Frontiers in Public Health*, 10, 890293.  
<https://doi.org/10.3389/fpubh.2022.890293>
- Lin, Y. H. (2015). Innovative brand experience's influence on brand equity and brand satisfaction. *Journal of Business Research*, 68(11), 2254–2259.  
<https://doi.org/https://doi.org/10.1016/j.jbusres.2015.06.007>
- Mahbub, G., Faruk, M. O., Das, A. C., Shaikat, T. A., Mia, M. T., Chowdhury, R., Rahman, K., Al Shiam, S. A., & Tufael. (2024). Major Causes of Cerebral Palsy among the Children of Bangladesh. *Journal of Knowledge Learning and Science Technology ISSN: 2959-6386*

- (Online), 2(3), 313–332. <https://doi.org/10.60087/jklst.vol2.n3.p332>
- Mugenda, O. M., & Mugenda, A. (2003). *Research methods: Quantitative and qualitative approaches*. Nairobi: African Centre for Technology Studies.
- Pandey, D. P., & Pandey, D. M. M. (2015). *Research Methodology: Tools and Techniques*. Bridge Centre.
- Rettie, R., & Brewer, C. (2000). The verbal and visual components of package design. *Journal of Product & Brand Management*, 9(1), 56–70. <https://doi.org/https://doi.org/10.1108/10610420010316339>
- Saunders, M., Lewis, P., & Thornhill, A. (2019). Reserach methods for business students, Fifth edition, Prentice Hall. In *Research Methods for Business Students* (Issue January). [www.pearsoned.co.uk](http://www.pearsoned.co.uk) [www.pearson.com/uk](http://www.pearson.com/uk) [https://www.amazon.com/Research-Methods-for-Business-Students/dp/1292208783/ref=sr\\_1\\_2?dchild=1&qid=1614706531&refinements=p\\_27%3AAAdrian+Thornhill+%2F+Philip+Lewis+%2F+Mark+N.+K.+Saunders&s=books&sr=1-2&text=Adri](https://www.amazon.com/Research-Methods-for-Business-Students/dp/1292208783/ref=sr_1_2?dchild=1&qid=1614706531&refinements=p_27%3AAAdrian+Thornhill+%2F+Philip+Lewis+%2F+Mark+N.+K.+Saunders&s=books&sr=1-2&text=Adri)
- Singh, S. (2006). Impact of color on marketing. *Management Decision*, 44(6), 783–789. <https://doi.org/https://doi.org/10.1108/00251740610673332>
- Silayoi, P., & Speece, M. (2007). The importance of packaging attributes: a conjoint analysis approach. *European Journal of Marketing*, 41(11/12), 1495–1517. <https://doi.org/https://www.emerald.com/insight/content/doi/10.1108/03090560710821279/full/html>
- Sioutis, T. (2011). *EFFECTS OF PACKAGE DESIGN ON CONSUMER EXPECTATIONS OF FOOD PRODUCT HEALTHINESS [UNIVERSITY OF AARHUS]*. <https://www.scribd.com/doc/74326204/Effects-of-Package-Design-on-Consumer-Expectations-of-Food-Product-Healthiness>
- Sunny, A. R., Hassan, M. N., Mahashin, M., & Nahiduzzaman, M. (2017). Present status of hilsa shad (*Tenulosa ilisha*) in Bangladesh: A review. *Journal of Entomology and Zoology Studies*, 5(6), 2099–2105. <https://doi.org/10.22271/j.ento.2017.v5.i6ac.2848>
- Sunny, A. R., Reza, M. J., Chowdhury, M. A., Hassan, M. N., Baten, M. A., Hasan, M. R., Mostafa, M. M., M.M., Solaiman, M. H., & Hossain, M. M. (2020). Biodiversity assemblages and conservation necessities of ecologically sensitive natural wetlands of north-eastern Bangladesh. *Indian Journal of Geo-Marine Sciences (IJMS)*, 49(01), 135-148. <http://op.niscpr.res.in/index.php/IJMS/article/view/68053/0>
- Wang, R. W. Y., Chou, M. C., & Lan, P. W. (2010). Research into the Elements of Design Differentiation in the Findability of Beverage Packaging. *The International Journal of Interdisciplinary Social Sciences: Annual Review*, 5(2), 221–244. <https://doi.org/https://doi.org/10.18848/1833-1882/CGP/v05i02/53099>