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FINAL DISSERTATION

Professional Master Degree in “Marketing Management”

**The impact of colors, symbols and packaging elements
on consumer behavior**

Case Study: SPA SIPADES “NOUARA”

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ABSTRACT

The aim of our research is to study the impact of visual design elements, specifically colors, symbols, and packaging, on consumer behavior in the Algerian market. We focus on examining how these elements influence consumer perceptions and purchasing intentions towards a locally popular product, the Flan from the brand "NOUARA". Employing quantitative methods, including Principal Component Analysis (PCA) and multiple regression analysis through SPSS, our study aims to isolate the individual effects of each visual element on consumer decisions.

The obtained results showed that only packaging has a positive impact on consumer perception. Furthermore, both colors and packaging were found to positively influence consumer purchase intention. The analysis revealed that the use of vibrant and appealing colors, in combination with effective packaging design, increased the likelihood of consumers deciding to purchase the product. In contrast, the inclusion of symbols did not show a statistically significant effect on either consumer perception or purchase intention. These findings underscore the importance of strategic packaging and color selection in marketing strategies to enhance consumer engagement and drive sales in the Algerian market.

Keywords: Visual design, colors, symbols, packaging, consumer perception, consumer purchase intention.

RÉSUMÉ

L'objectif de notre mémoire est d'étudier l'impact des éléments de design visuel, en particulier les couleurs, les symboles et l'emballage, sur le comportement des consommateurs sur le marché algérien. Nous nous concentrons sur étudier la manière dont ces éléments influencent les perceptions et les intentions d'achat des consommateurs à l'égard d'un produit populaire local, le Flan de la marque « NOUARA ». En utilisant des méthodes quantitatives, notamment l'analyse en composantes principales (ACP) et l'analyse de régression multiple à l'aide du logiciel SPSS, notre étude vise à isoler les effets individuels de chaque élément visuel sur les décisions des consommateurs.

Les résultats obtenus montrent que seul l'emballage a un impact positif sur la perception du consommateur. En outre, les couleurs et l'emballage influencent positivement l'intention

d'achat du consommateur. L'analyse a révélé que l'utilisation de couleurs vives et attrayantes, combinée à une conception efficace de l'emballage, augmentait la probabilité que les consommateurs décident d'acheter le produit. En revanche, l'inclusion de symboles n'a pas eu d'effet statistiquement significatif sur la perception ou l'intention d'achat des consommateurs. Ces résultats soulignent l'importance d'un emballage stratégique et de la sélection des couleurs dans les stratégies de marketing pour renforcer l'engagement des consommateurs et stimuler les ventes sur le marché algérien.

Mots-clés : Design visuel, couleurs, symboles, emballage, perception des consommateurs, intention d'achat des consommateurs.

ملخص

يهدف بحثنا إلى دراسة تأثير عناصر التصميم المرئي، وتحديدًا الألوان والرموز والتغليف، على سلوك المستهلك في السوق الجزائرية. كان تركيزنا على دراسة كيف يتم تأثير هذه العناصر على إدراك المستهلكين ونوايا الشراء تجاه منتج محلي، وهو فلان من العلامة التجارية "نواره". من خلال استخدام الأساليب الكمية، بما في ذلك تحليل المكونات الرئيسية (PCA) وتحليل الانحدار المتعدد من خلال نظام SPSS، تهدف دراستنا إلى عزل التأثيرات الفردية لكل عنصر على قرارات المستهلك.

أظهرت النتائج أن التغليف فقط له تأثير إيجابي على إدراك المستهلك. بالإضافة إلى ذلك، وُجد أن كلاً من الألوان والتغليف يؤثران بشكل إيجابي على نية الشراء لدى المستهلك. وكشف التحليل أن استخدام الألوان النابضة بالحياة والجذابة، إلى جانب التصميم الفعال للتغليف، يزيد من احتمالية اتخاذ المستهلكين قرار الشراء. في المقابل، لم يُظهر إدراج الرموز تأثيرًا ذا دلالة إحصائية على إدراك المستهلك أو نية الشراء. تؤكد هذه النتائج أهمية التغليف الاستراتيجي واختيار الألوان في استراتيجيات التسويق لتعزيز مشاركة المستهلكين وزيادة المبيعات في السوق الجزائرية.

الكلمات المفتاحية: التصميم المرئي، الألوان، الرموز، التغليف، إدراك المستهلك، نية الشراء لدى المستهلك.

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LIST OF ABBREVIATIONS, SINGLES AND ACRONYMS

DSM: Documentary Research Method

KMO: Kaiser-Meyer-Olkin

PCA: Principal Component Analysis

PLS-SEM: Partial Least Squares Structural Equation Modeling

SIG: Significance Testing

SIPADES: Société Industrielle des Produits Alimentaires & Dérivés du Sucre

SPA: Société Par Action

SPSS: Statistical Data Analysis Software

VIF: Variance Inflation Factor

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INTRODUCTION

1. Research context and objectives

In recent years, the economic landscape has transformed significantly, reflecting the dynamic nature of the 21st century. This period is marked by constant market fluctuations driven by evolving economic priorities. In this context, businesses face heightened global competition, rapid technological advancements, and ever-increasing consumer demands. Securing and expanding market share has become a strategic necessity for companies. (Sheth, 2021)

To thrive, businesses must develop products and services that meet the precise expectations of current customers while appealing to potential ones. This requires a proactive understanding of changing consumer preferences and market dynamics. Strategic product and service positioning in this fluid environment is crucial for organizational success and sustainability.

In a confectionary supplies and dessert market characterized by strong competition, today's companies rely on technological innovations, modern design, environmental friendliness, as well as reduced energy consumption and adaptability.

SPA SIPADES “NOUARA”, a very well known Algerian brand, is a company that has proven the quality of its products and its reputation nationally, thanks to the nostalgia it evokes, memories of childhood and sincerity. Since its creation in 1967, “NOUARA” has consistently offered its customers a varied and diverse range of high quality products.

In order to establish a strong image today, brands find themselves not only in a competitive situation regarding products but increasingly in terms of communication as well. To be heard in a saturated communication market, visual design of the products needs to be approached strategically in order to successfully communicate the brand's messages to the consumers and play a pivotal role in their purchase decisions. (Hassan, 2018)

Focusing on our research, we aim to investigate the influence of visual design elements on consumer behavior. Specifically, we seek to determine whether these elements positively impact consumer perceptions and attitudes, and if they play a role in shaping purchase intentions. By understanding the effect of visual design, we can provide insights into how businesses can better meet consumer expectations and drive purchasing decisions.

2. Research relevance

The choice of the theme of this research is not the result of chance, but that of a long period of research and observation of many years regarding the products of the NOUARA brand due to its cultural connections to our everyday lives especially during the holy month of Ramadan and the emotions these products evoke within the Algerian people. Looking at the elements of visual design via social networks, websites and past advertisements in terms of perception and purchase intention could have relevant implications both theoretically and managerially for promoters.

2.1 Theoretical relevance

This notable research gap underscores the significance of our endeavor to investigate these interconnected variables concurrently. Furthermore, our decision to incorporate a case study approach, focusing specifically on NOUARA's products, serves to elucidate the underlying mechanisms and implications of these elements within a real-world context. Through this study, we aim to contribute novel insights towards comprehending the strategic role and impact of colors, symbols, and visual packaging design elements on consumer behavior and market outcomes.

2.2 Managerial relevance

The theme of "The Impact of Colors, Symbols, and Packaging Elements on Consumer Behavior" holds significant managerial relevance for NOUARA, a brand operating in today's competitive marketplace. Understanding and leveraging the influence of these visual stimuli can directly contribute to strategic decision-making and organizational success in several key ways:

- Colors, symbols, and packaging elements play a crucial role in shaping brand identity and differentiation. We can use these elements strategically to distinguish their brand from competitors, create a unique brand image, and establish a strong brand presence in consumers' minds.
- Effective use of colors, symbols, and packaging elements can enhance consumer engagement with products and the brand. By creating visually appealing packaging designs and incorporating meaningful symbols, we can capture consumers' attention, stimulate interest, and encourage interaction with the product or brand.

- Colors and symbols have the power to evoke emotions and associations in consumers' minds. We can leverage this emotional resonance to build strong connections with consumers, fostering brand loyalty and advocacy. Thoughtfully designed packaging elements can evoke positive emotions and create memorable brand experiences, strengthening consumer-brand relationships.
- Visual stimuli significantly influence consumers' purchase decisions. We can strategically use colors, symbols, and packaging elements to communicate product attributes, convey quality, and influence perceived value. By aligning visual cues with consumer preferences and market trends, we can enhance product desirability and drive purchase intent.

3. Research question and hypotheses

To achieve the objectives of this research and taking into consideration the aforementioned context, our reflection began from a question that can be summarized as follows:

“What is the impact of Colors, Symbols and Packaging Elements on Consumer Perception and Purchase Intention?”

The desired concepts of visual elements are: colors, symbols and packaging elements. And our aim is to study their impact on consumer behavior, meaning on both perception and on purchase intention.

To answer that initial question and going from what was mentioned above, it is imperative to first answer secondary questions which are of great use to us and allow us to better frame our work. Gaining inspiration from and going from the works of (Aghdaie & Honari, 2014), (Hussain, 2015), (Benachenhou et al., 2018), (Hassan, 2018), (Muttaqin et al., 2023), we managed to extract the following sub-questions in the subsequent section.

3.1. Sub questions

In order to answer the question in the previous section, the following sub-questions have been extracted in order to better frame the research:

Q1: What is the impact of Visual Elements on Consumer Perception?

-What is the impact of Colors on Consumer Perception?

-What is the impact of Symbols on Consumer Perception?

-What is the impact of Packaging on Consumer Perception?

Q2: What is the impact of Visual Elements on Consumer Purchase Intention?

-What is the impact of Colors on Consumer Purchase Intention?

-What is the impact of Symbols on Consumer Purchase Intention?

-What is the impact of Packaging on Consumer Purchase Intention?

3.2 Hypotheses

In order to answer the aforementioned questions, and based on the selected conceptual model and literature review, and inspired from (Aghdaie & Honari, 2014), (Hussain, 2015), (Benachenhou et al., 2018), (Hassan, 2018), hypotheses have been formulated to express the relationships between the variables of our research.

1. Visual Elements positively impact Consumer Perception

H1a: Colors positively impact Consumer perception.

H1b: Symbols positively impact Consumer perception.

H1c: Packaging positively impacts Consumer perception.

2. Visual Elements positively impact Consumer Purchase Intention

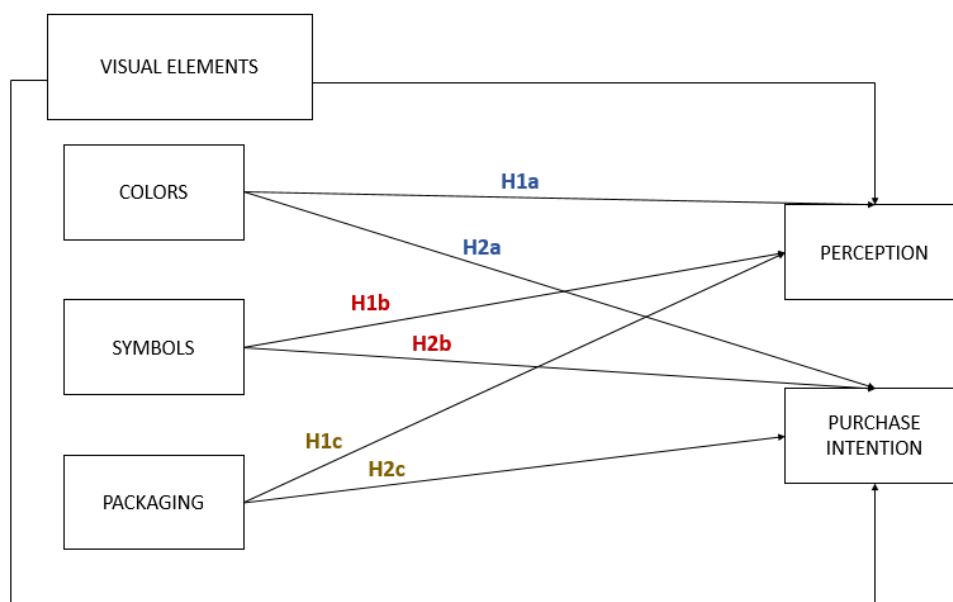
H2a: Colors positively impact Consumer Purchase Intention.

H2b: Symbols positively impact Consumer Purchase Intention.

H2c: Packaging positively impacts Consumer Purchase Intention.

We can summarize our research model in the following figure, which had been inspired by the work of (Hussain, 2015), as this author had the closest variables to our research.

Figure 1: Research Model



Source: Elaborated by us

Our independent variables are comprised of colors, symbols and packaging while the dependant variables are consumer perception and consumer purchase intention.

4. Research field

Our host organization was SPA SIPADES “NOUARA”, founded in 1967 and the leader in powder packaging in Algeria.

They are primarily known for the following products: Baking powder and Flan. High-tech machines ensure the packaging of various products. This brand evokes many feelings of nostalgia and childhood memories, especially within Algerian consumers.

5. Announcement of the plan

This document is organized as follows:

The introduction provides an overview of the context and the significance of our topic. Chapter I presents the theoretical frame, consisting of three sections: (1) Literature Review, showcasing the many studies that have been published in the past and dealing with the subject of our investigation. (2) Conceptual Framework, which highlighted the important theoretical knowledge needed for our study, and finally (3) Research Question, Hypotheses and Research Model.

Chapter II presents the methodological framework and organizational context, comprising an organizational context section to introduce the internship setting, and a data and methods section to outline the work methodology before diving into the more practical part of the study.

Chapter III presents the results of the study after testing the hypotheses that had been extracted from the literature review, followed by a discussion of these results in relation to the previous studies also highlighted in the literature review.

Finally, the conclusion summarizes the elements addressed in the dissertation, the main results, and the theoretical and managerial contributions of this research. It concludes with a description of the research limitations and potential future research directions.

CHAPTER I: THEORETICAL FRAME

1. Literature review

In this section, we conduct an examination of the body of literature concerning: “The Impact of Colors, Symbols and Packaging Elements on Consumer Behavior”. Drawing information from a diverse range of academic sources, but mainly and most importantly scientific articles. Our objective is to provide a synthesis of current Consumer Behavior and Visual Packaging Elements practices within organizations, as well as to position our research within the existing context. Through a structured analysis of key themes, theoretical frameworks, empirical findings, and research gaps, we aim to illustrate the previous research and investigations of the concepts and areas of consensus within the literature. By identifying existing knowledge gaps, this review sets the stage for our research objectives and contributes to the advancement of knowledge in the field of Consumer Behavior.

1.1. Consumer behavior

Recent research has shown that the state of marketing has been bright in the last fifty years as marketing began the transition from a descriptive to a predictive science. The divergence of marketing into separate subdisciplines of consumer behavior and marketing analytics has encouraged more scholars from other disciplines to focus on marketing. The future of marketing in the next 50 years will be even brighter in each of the three sub-disciplines. (Sheth, 2021)

But even so, the global COVID-19 pandemic had a significant impact on cultures and economies worldwide. Consequently, customers' daily lives, as well as how companies and consumers interact, have been changed. (TIMOTIUS & OCTAVIUS, 2021)

Meaning there has been a radical change in how consumers interact with products, how their purchasing process is set in motion, and how they react cognitively and affectively with visuals and packaging.

A study by (Hussain, 2015) on how packaging influences consumer purchase intentions, emphasizing its vital role in consumer behavior and decision-making in a competitive market. The research started with an extensive literature review on key concepts and aspects of consumer behavior. It then examined various facets of buying behavior in the Pakistani market through a questionnaire based on a Likert scale. The sample consisted of 140 respondents from diverse backgrounds. Data collection methods included social media, spot

filling, email, postings, and peer recommendations. SPSS-18 software was employed for data analysis and interpretation.

The findings from the prior research demonstrated the importance of packaging in shaping consumer perception and purchase intention. Key packaging elements, such as color, design, and the information provided, were found to greatly affect consumer behavior and decision-making. It was observed that positive purchase intentions significantly influence actual purchasing behavior, highlighting the importance of understanding consumer motivations. By utilizing effective packaging strategies, marketers can foster customer loyalty and shift consumer perceptions, thereby affecting purchase intentions. The study confirmed the hypothesis that elements of packaging have a positive impact on consumer purchase behavior.

A study by (Raquel, 2022) explored the concept of consumer perception of value using qualitative methods such as observations and document and content analysis. The analysis identified both convergent and divergent elements in the comparison and review of consumer value. The study concluded that consumer perception of a product is a cognitive-affective evaluation of the exchange relationship, which occurs at any stage of the purchase decision process and is influenced by various tangible and intangible factors, as well as the time, place, and circumstances of the evaluation. A primary challenge faced by the researcher was the lack of consensus among scholars, leading to unclear definitions of several key concepts.

A more recent study by (Kitz et al., 2022) in Canada examined consumer perceptions of food packaging during the COVID-19 pandemic and the significant changes that occurred. The study aimed to assess shifts in Canadian consumers' attitudes towards single-use plastic food packaging. The researchers conducted two representative surveys of the Canadian population, one in May 2019 with 1,094 participants and another in June 2020 with 977 participants.

The aforementioned Canadian researchers came with the results that there were notable changes occurred between 2019 and 2020 regarding environmental motivation, perception and attitudes towards food packaging, through their two conducted surveys. Due to COVID-19, attitudes of consumers towards packaging shifted significantly. Support for tighter regulations declined, alongside a growing willingness to pay for biodegradable alternatives.

Rising packaging and food safety concerns may explain this shift, as consumers increasingly recognize the value of packaging while remaining concerned about environmental impact.

This study emphasizes the need for caution among industries and governments, as crisis-induced changes in risk perception may affect consumer behavior

1.2. Factors influencing consumer behavior

A study by (N. & Ali, 2016) explored the various factors, specificities, and characteristics that influence individuals in their decision-making processes, shopping habits, purchasing behaviors, brand choices, and retailer preferences, utilizing qualitative research methods. The study identified the primary factors influencing consumer purchases as social, cultural, economic, personal, and psychological.

A similar and more recent study by (Qazzafi, 2020) also examined the factors influencing consumer behavior. The study aimed to identify the factors affecting consumer buying behavior towards goods and services and to understand how these factors impact individual purchase decisions. Using a qualitative approach and secondary data for analysis, the researcher concluded that the main factors influencing consumer behavior are personal, psychological, social, and economic.

This more recent study by (Qazzafi, 2020) and unlike the previous one led by (N. & Ali, 2016) has shown some changes. For example, the recent study has grouped the cultural factors with the social factors, and the beliefs that were classified as psychological factors, were now personal factors in the recent study.

1.3. The impact of colors on consumer behavior

A study by (Aghdaie & Honari, 2014) investigated the psychological impact of colors on consumer behavior and shopping habits. The study aimed to explore the psychology of colors within a marketing context. To gather data, the researchers employed a survey methodology, using a questionnaire to examine the psychological effects of colors on consumer shopping behavior. The study's participants were customers of the Refah chain store in Isfahan city, selected through simple random sampling. A total of 80 questionnaires were distributed among the customers.

The aforementioned researchers came to a result that divided consumers into three categories in terms of how they respond to various colors: 1. Those who tend to test new colors due to the idea of novelty and freshness and are ready to pay more for that. Usually women ranging between 30 and 50 and men under 30 years old belong to this category. 2. Those who use new

colors provided that it has been used or tested earlier by others. Generally men and women ranging between 30 and 50 who are known as cautious buyers belong to this category. 3. Those who tend to gravitate to dependable colors like blue, black and grey. Men above 60 years old who are not fond of shopping belong to this category.

The researchers also suggested alternating the use of these colors. They emphasized the connection between colors used in packaging and consumer shopping behavior. When deciding on the color and packaging of new products, it is essential to consider certain fundamentals, as the message communicated by the product's color holds significant weight. Furthermore, they recommended that experts carefully consider packaging colors for their attractiveness and the conveyed meaning. Given that colors elicit various emotional responses, it's crucial to select suitable colors to effectively convey the intended message

A study by (Khattak et al., 2018) delved into the psychology of colors in marketing. Their objective was to illustrate that colors serve not only to differentiate products from competitors but also to influence the moods and feelings of individual buyers, thus shaping attitudes toward specific products. Employing qualitative methods, the study involved evaluating literature related to color psychology. The findings underscored the significant role colors play in marketing, with the assumption that human responses to colors remain consistent and relevant to all. Despite encountering dissenting views among psychologists during their investigation, the researchers argued that color preferences vary among individuals, cultures, genders, and age groups. They stressed the importance for marketing managers to be cognizant of this variation and to select the most preferred colors to gain a competitive edge. However, a limitation of their study was the absence of a survey questionnaire to quantitatively measure the results.

A study by (Casas & Chinoperekweyi, 2019) explored the correlation between color psychology and consumer behavior, a pivotal aspect of marketing activities in the business landscape. The research aimed to investigate this relationship specifically within the apparel market. Their inquiry commenced with a review of empirical and theoretical literature, which posited that color psychology significantly influences the efficacy of marketing endeavors, especially when seamlessly integrated into an organization's manufacturing and distribution strategies. The apparel market was selected for its unique cultural dynamics and consumer psychological beliefs relative to other markets. Data collection utilized quantitative methods, drawing from secondary sources such as journals, articles, and empirical research on color

psychology, consumer behavior concerning product color, and cultural perceptions of color within the apparel industry.

The aforementioned researchers came with the results that color psychology plays a bigger role in effecting emotional and intellectual influence among consumers. Color perception and color psychology affects people's behavior in such a way that the symbolism of the colors resonates with people's perceptions, hence linking it with information from their cultures. Through the color perception of different cultures, the research concluded that using a color that is associated with something negative will negatively affect the customers' retrieval cues, therefore repelling them from purchasing the product or service.

1.4. The impact of symbols on consumer behavior

A study by (Lytvynenko et al., 2022) explored the semiotics of advertising, focusing on the study of signs and symbols and their utilization or interpretation within a marketing framework. The research aimed to elucidate the primary trends in contemporary research on the semiotics of advertising by proposing its recognition as a distinct discipline within the realm of semiotics as a scientific field. Predominantly theoretical and generalizing in nature, the study employed the logical method of integrative cognition to analyze approaches to interpreting semiotics in advertising and employed descriptive analysis to illustrate how the transformation of signs influences the ultimate perception of advertising texts. The key outcome of the article was the emphasis on the necessity of regarding the semiotics of advertising as an exemplary sign system.

The aforementioned researchers also concluded that semiotics in advertising present a worldview model through symbolism that resonates with the potential consumer, particularly on an emotional level, fostering desirability. When exposed to modern media advertising, individuals are subconsciously subjected to potent suggestive influences. Semiotics in advertising aims to identify universal signs, predict the recipient's response, and integrate them into multimedia content. As an indispensable tool for brands, it encompasses a distinct semantics and semiotics of products that tap into the collective subconscious, aiming to appeal to a broad consumer base by employing symbols in advertising texts to convey the necessity of purchasing the advertised product.

A study by (Muttaqin et al., 2023) highlighted the prominence of logos as the primary type of symbols utilized by brands and their impact on marketing communications. The research

aimed to investigate customer behavior regarding product representation through a company's logo and emblem, with a specific focus on whether logos or emblems influence brand awareness from a consumer perspective. Employing an exploratory methodology, the study utilized focus group discussions as part of qualitative descriptive methods, complemented by a review of relevant literature pertaining to branding. The study's sample comprised students from the Bandung area, with the majority representing the target demographic.

These researchers found that branding initiates with the development of brand identity, encompassing the creation of elements such as the brand's name, logo, tagline, colors, typography, and overall visual and verbal style. These components serve as reflections of the brand's values, personality, and positioning within the market. Among these elements, the logo stands out as the most prominent, serving as the company's emblem that remains ingrained in the consumer's memory, essentially becoming the brand's calling card. It's emphasized that the logo transcends being merely a visual element; it serves as a potent branding tool that communicates the company's identity, fosters recognition and trust, and aids in differentiation within a competitive landscape. While the logo may not solely drive sales, it significantly influences consumer perceptions, bolsters brand recognition, and ultimately impacts purchasing decisions.

1.5. Cultural influences on color perception and symbolism

A study by (Aslam, 2006) explored a cross-cultural examination of color as a marketing cue. The research aimed to scrutinize the psychological and socio-cultural associations and meanings of colors within a cross-cultural marketing context, outlining their role as marketing cues through qualitative methodologies. The study produced significant findings across various cultures and countries worldwide, with a particular focus on main colors: blue, red, yellow, green, purple, black, white, and brown. Furthermore, the researcher meticulously detailed the significance, meaning, and symbolism of each color within different cultures, identifying color-culture clusters. The study argued that adopting a cross-cultural perspective in color research and application is essential for the development of global marketing strategies. It emphasized that cultural values, marketing objectives, and desired customer relationships should dictate the choice of colors in corporate and marketing communications in the 21st century.

A study by (Sabbar et al., 2023) focused on the significance of the 'Halal' symbol on products within Muslim cultures and societies. The research aimed to evaluate whether there were

disparities in consumer perceptions between Indonesia and other Muslim-majority regions regarding Islamic branding and marketing, seeking to deepen the understanding of consumer perceptions. Utilizing quantitative analysis with PLS-SEM equipment, the study employed data collection techniques via a questionnaire with a Likert scale, involving a population size of 400 respondents. The study's findings revealed that Islamic branding positively influences consumer perception and significantly impacts their decisions. In regions where the majority population adheres to Islam with strong faith and cultural values, there is a clear reflection in their perception of consuming halal goods and services aligned with Islamic teachings.

Meaning, brands targeting Islamic consumers and regions have to emphasize that it is a brand that holds Halal sources by using the appropriate symbols on the packaging where the consumers would be able to see and recognize it on the products.

1.6. The impact of packaging on consumer behavior

A study by (Hussain, 2015) investigated the impact of product packaging on consumer perception and purchase intention. The research aimed to assess how packaging influences consumer buying behavior, including consumer perception and purchase intention, and to examine the factors affecting consumers' decisions when purchasing a product. The objective was to identify the elements contributing to the success of product packaging. The research targeted various locations in Pakistan as the population. Data collection utilized quantitative tools, specifically a questionnaire distributed to 120 respondents. Analysis of the data was conducted using SPSS software to derive research results and interpret the correlation and regression findings.

This investigation revealed a significant impact of packaging on consumer perceptions and purchase intentions. Packaging emerged as a vital source of product information, encompassing details such as origin, ingredients, manufacturer identity, production date, specifications, and usage instructions. Notably, attributes of packaging like color, design, material composition, size, and labeling wield substantial influence over consumer satisfaction, serving as effective substitutes for costly advertising efforts. These packaging elements not only sustain consumer interest but also play a pivotal role in shaping purchasing decisions. Furthermore, the study highlights the direct correlation between purchase intentions, consumer perceptions, and consumer purchasing behavior. The quality of packaging material emerged as a crucial factor, contributing to product preservation, enhancing attractiveness, fostering preference, and cultivating positive consumer perceptions.

Aesthetic considerations, including background imagery, color schemes, shapes, meticulous labeling, graphical elements, and streamlined packaging formats, significantly influence consumer attraction to products.

However, the study's limitation lies in the omission of important concepts in the literature review, which could have enriched the investigation.

A study by (Wyrwa & Barska, 2017) took a unique approach by examining product packaging as a source of information for consumers. The research aimed to uncover the role of packaging in the food purchasing process. The investigation utilized a combination of literature analysis and selected findings from the authors' empirical studies. Through field research, the primary objective was to assess consumer attitudes and behaviors towards food product packaging using a quantitative survey method. Analysis of the results revealed that consumers prioritize features such as ease of use and durability when evaluating packaging.

The study also underscored the pivotal role of food packaging as a crucial marketing tool, evident in both its functions and its influence on consumer purchase decisions. It's important to note that for most consumers, their initial interaction with a product primarily occurs through its packaging. The researchers highlighted that packaging characteristics frequently influence consumer interest in the product. Additionally, they observed that the growing informational role of packaging is a response to numerous concerns arising from practices such as food production, marketing strategies, and the widespread use of additives with uncertain effects. Moreover, the labeling of products on packaging emerged as paramount for ensuring consumer safety and providing reliable nutrition information.

A study by (Benachenhou et al., 2018) delved into the influence of packaging elements on the purchase intentions of Algerian customers. The objective was to examine the effects of marketing innovation and visual packaging elements on customers' purchase intentions. Following a concise literature review, the researchers conducted an empirical study involving 140 customers of the Coca-Cola brand in Tlemcen. Quantitative methods were employed, utilizing a questionnaire for data collection, and analysis was carried out using SPSS.22 software.

The authors concluded that packaging serves a crucial role as an integral component of brand marketing. They emphasized that packaging extends beyond physical protection, playing a promotional role by enticing consumers through its shapes, colors, and provided information,

such as instructions for use, manufacturing dates, and components. Furthermore, packaging aids in brand differentiation from competitors. The study also revealed that all visual elements associated with packaging, including marketing innovation, influenced the purchase intention of the Coca-Cola brand, with the strongest impact observed in the relationship between marketing innovation and customer intention.

However, the study faced limitations, notably the relatively small sample size of 140 customers, which restricted the researchers' ability to generate statistically significant results within the given timeframe, preventing wider dissemination of findings to the research community.

On this basis, it was clear to us through the study that the behavior of individuals is affected by packaging, especially when the competing brands are similar, meaning; the product is included in the products of large consumption such as food products. On this basis, enterprises can choose packaging that can distinguish them from competitors and apply to the customer's identity.

1.7. Consumer emotional response to packaging elements

A study by (Datta, 2014) dealt with the impact of nostalgic emotions on consumer satisfaction with packaging design. The purpose of this study was to explore the different effects of nostalgic emotions on consumer satisfaction with rice packaging design.

The researcher employed a quantitative methodology, utilizing a questionnaire survey to collect consumer emotion evaluations and overall satisfaction regarding nostalgic packaging. Factor analysis was applied to explore dimensions of consumers' emotional experiences, leading to the identification of two factors: stirring emotion and historical emotion. The study's findings supported the existence of diverse relationships between emotional performance, such as nostalgia, and customer satisfaction. Emphasizing the pursuit of maximum customer satisfaction as a paramount objective of product design, the researcher concluded that packaging design has emerged as a potent tool within the marketing communications mix to delight consumers. By evoking emotions and feelings through design, packaging can effectively generate positive emotions, enhancing consumer satisfaction and potentially influencing positive reactions and purchase decisions.

5.1. Critical analysis

After the study of the previous scientific articles and the author's stances on the subject, we notice that there might be some shifts in consumer behaviors when it comes to perception and purchase intent through packaging in the previous years, but what about post-pandemic consumer behavior, especially the behavior of the consumers belonging to the Algerian population?

Still, one of the central themes highlighted in this analysis of the previous articles is the significance of visual cues in packaging when it comes to shaping consumer perceptions and purchase decisions.

But the authors only explored the impact of these visual cues one at a time on consumer behavior, for example the impact of colors on perception without taking into consideration its impact on the purchase intention, or studied colors symbolism without mentioning other important symbols that are important in packaging such as imagery or typography, or just dealt with the latter without taking colors into consideration.

The lack of exploring the visual elements together and their impact on consumer behavior could have some repercussions such having negative impact on the results and incomplete data by glossing over and neglecting the other elements and focusing on just one visual cue.

Furthermore, we believe that exploring visual cues collectively will enable us to account for individual differences, cultural variations in our studied population, and situational contexts that modulate consumer responses. Differences in color symbolism, for instance, highlight the need for adaptive packaging designs that resonate with diverse consumer segments. By considering the interplay between visual cues and symbolism factors, we can develop packaging strategies that effectively target the needed segment and differentiate the brand when facing the competitors.

5.2. Positioning of research

Visual elements on the packaging are very important in defining brand identity and impacting the consumers cognitively and affectively, therefore, understanding how visual cues, such as colors, symbols, and packaging elements this context is essential for developing effective marketing strategies.

Algeria is a culturally diverse country with a rich heritage that encompasses various ethnicities, languages, and traditions. As such, packaging designs that resonate with Algerian cultural sensibilities and values are likely to resonate more effectively with consumers. So, research into the symbolic meanings attributed to colors and symbols within the Algerian cultural context can inform marketers about the most appropriate visual cues to use in packaging designs to evoke positive emotional responses and foster consumer engagement.

And due to the lack of studies in this field in Algeria, and where these visual cues are united and investigated at the same time, we were led to be interested in studying this topic of the impact of colors, symbols, and packaging elements on consumer behavior of the Algerian population in order to acquire an understanding of the factors shaping their preferences and purchasing decisions.

To conclude this part, we can say that this literature review has provided a comprehensive exploration of colors, symbols, and packaging elements on consumer behavior. This review has shed light on the multifaceted nature of consumer behavior in the context of marketing and branding.

Moreover, the discussion surrounding visual communication strategies in packaging design and the emotional responses elicited by packaging elements has underscored the importance of aesthetics, symbolism, and emotional appeal in capturing consumer attention and fostering brand connections.

Building upon the insights gleaned from this literature review, the subsequent chapter will delve into the development of a conceptual framework that integrates key theoretical perspectives to guide our understanding of the interplay between colors, symbols, packaging elements, and consumer behavior. By synthesizing the existing literature and laying the groundwork for our conceptual framework, this chapter sets the stage for the investigation and analysis that will follow, contributing to the advancement of knowledge in this field and offering practical implications for marketers and brand strategists alike.

2. Conceptual frame

Building upon the foundation laid in the preceding literature review, this conceptual framework section aims to synthesize and extend the insights garnered from the extensive

body of literature on the impact of colors, symbols, and packaging elements on consumer behavior. As discussed in the literature review, the intricate interplay between these marketing elements and consumer perceptions, preferences, and decision-making processes underscores the complexity of consumer behavior within the realm of marketing and branding.

In this conceptual framework chapter, we aim to build upon this foundational knowledge by developing a theoretical framework that integrates key concepts and definitions.

Furthermore, this conceptual frame will serve as a guiding framework for the empirical investigation conducted in subsequent chapters, providing a structured lens through which to examine the research hypotheses and analyze the empirical findings.

2.1. Consumer behavior

Consumer behavior is the act of a person buying and using a product or service, including both psychological and social processes occurring before and after the act. The study of consumer behavior includes the study of the individual consumers, how they choose products and services and the impact of this process on consumers themselves and society. (Hoang-Tien et al., 2020)

Researchers (Sheth, 2021) have said that Consumer Behavior as a discipline is only 50 years old. Just as marketing began to separate itself from economics with focus on channels of distribution, consumer behavior began to separate itself from market research. The biggest change took place when consumer behavior borrowed both explanations as well as research methods of behavioral sciences such as social and clinical psychology. Consumer behavior has evolved over time. Previous authors have identified several stages of its evolution. It began with a focus on motivation research anchored to Freudian psychology to explain non-rational or abnormal behavior of the consumers. Motivation research was popularized by Ernest Dichter in 2009. However, it was quickly taken over by social psychology and its multi-attribute attitude models. In other words, consumers develop predispositions and intentions based on past experiences as well as information provided by marketers, friends, and reference groups.

Consumer behavior can be split into two concepts: Perception, and Purchase intent which go together hand-in-hand.

2.2. Perception

Perception, according to Gregory et al (1995), *“is a set of process by which an individual becomes aware of and interpret information about the environment. If everyone perceived everything the way, things would be a lot simpler, of course, the reverse is true.”* (Agyekum et al., 2015).

Consumers use different variables to determine the quality of a product. The quality lies in the eyes of the consumers in question. What may be seemed to be of high quality to one consumer may be inferior to another, even though many consumers use price as an indicator of product quality. (Kotler, 2012)

After the consumers form an opinion about the product and how they perceive it, these opinions can lead to the process of purchase decision and alter their intentions.

2.3. Consumer purchase intention

According to Kotler and Keller (2016), a purchase intention is a form of behavior by consumers who have a desire to buy a product based on the desire, experience of use, and desire for the product of a product. It is one of the decisions made by consumers when they want to buy a product or service with a certain brand. (Cahyanaputra et al., 2022)

This intention is influenced by different factors, these factors are often what lead the consumers to make their decisions and have distinct effects on their behavior and attitudes towards the products.

2.4. Factors influencing consumer behavior

Researchers have managed to summarize the factors influencing consumer behavior as follows.

2.4.1. Personal factors

The first factor which affects consumer buying behavior is the personal factor. The personal factor consists of age & stages of life cycle, occupation, personality, lifestyle and values which affects the consumer buying behavior. These are the combination of both direct and indirect personal factors. Out of these, some directly affect the consumer buying behavior and some indirectly affect the consumer buying behavior. The study came to the conclusion that

the companies should focus on the personal factors and it is usually applicable in the daily products as well as specific products. (Qazzafi, 2020)

2.4.2. Psychological factors

These factors arise from psychological states of tension such as needs for recognition, esteem and other internal factors (N. & Ali, 2016). The psychological factor also affects the consumer buying behavior. It is also known as internal. Environment plays an important role in the purchasing process of consumer. The people often influenced by the other consumers' purchase of goods or services. The "other consumer" might be a friend, family member, a colleague and so on. Consumers can be excited for a new product which introduced in the market, it is because of environment. Environment relates with psychology. Some companies focus on this factor. The psychological factor includes four factors motivation, perception, learning and memory. (Qazzafi, 2020)

2.4.3. Social factors

A human is a social creature. Hence, our behavior patterns, likes and dislikes are influenced by the people around us to a great extent. Humans always seek confirmation from the people around and seldom do things that are not socially acceptable. The social factors influencing consumer behavior are family, reference groups, roles and status (N. & Ali, 2016). The word-of-mouth is the strongest factor which influences the consumer buying behavior. A person can be influenced more by his/her family or friends rather than the other people such as a salesperson of a company and so on. A person is more likely to trust their family or friend instead of other people. Family is the most important part of any person's life. An individual trusts their family more rather than any other person. (Qazzafi, 2020)

2.4.4. Cultural factors

A study observed that human behavior is largely the result of a learning process and as such individuals grow up learning a set of values, perceptions, preferences and behavior patterns as the result of socialization both within the family and a series of other key institutions. From this, humans develop a set of values which determine and drive behavioral patterns to a very large extent. According to Schiffman and Kanuk, values include achievement, success, efficiency, progress, material comfort, practicality, individualism, freedom, humanitarianism, youthfulness and practicality. This broad set of values is then influenced by the subcultures like nationality groups, religious groups, racial groups and geographical areas, all of which

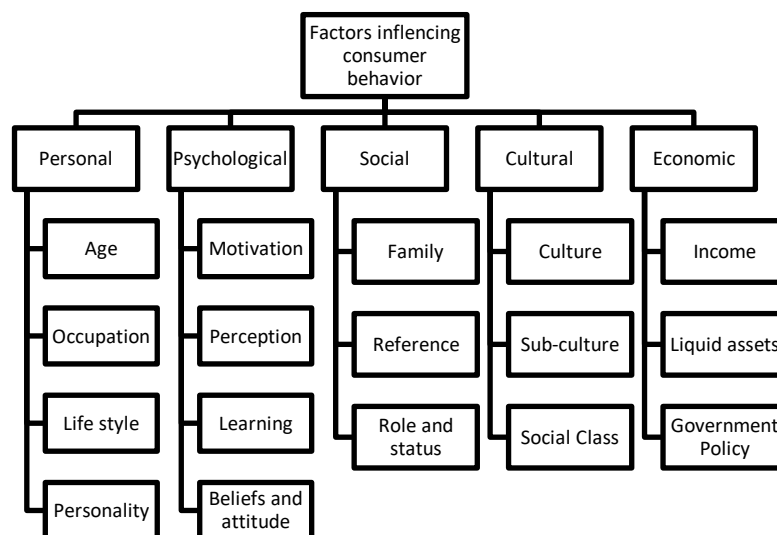
exhibit degrees of difference in ethnic taste, cultural preferences, taboos, attitudes and lifestyle. Cultural factors consist of Culture, Sub culture and Social class. (N. & Ali, 2016)

2.4.5. Economical factors

The economic condition of a consumer effects their purchasing decision and choice of a specific brand or product. Companies can study the behavior of spending money and saving money of consumers. For instance; Samsung offers mobile phones with high prices as well as low prices. There are several economic factors including personal income, family income, income expectations, savings, consumer credit, liquid assets of the consumer and other economic factors. (N. & Ali, 2016)

We can summarize the mentioned factors in the following diagram:

Figure 2: Factors influencing Consumer Behavior.



Source: (Qazzafi, 2020)

As mentioned above, all of these factors play an important role in shaping the consumer's decision and attitudes towards certain products and services, and are what leads them to either purchase the product or not.

2.5. Image

Imagery is a constant in different types of packaging design; it immediately sends powerful and long-lasting messages to consumers. Also, images can communicate it quickly and effectively. In some cases, the purpose of the image is interpretation, showing the consumers what is contained within the package. (Ahmad & Ahmad, 2015)

Images often contain other elements such as: typography, colors, and more. They're also considered a symbol.

2.6. Typography

Typography serves as the central pillar of packaging design, playing a pivotal role in the dissemination of information. Its primary objective revolves around the transmission of essential details such as product name, uses, instructional directives, customer support particulars, and ownership particulars. (Ahmad & Ahmad, 2015)

2.7. Color

Color is an atmospheric variable, which explains the visual appearance of an environment (Anwar et al., 2020). Colors can be seen when the objects reflect the wavelengths of light that do not match its atomic structure. These reflected wavelengths also pass our eyes where the cones at the back of the retina convert the wavelengths into impulses that influence peoples' perceptions. Colors can be categorized under names like red, orange, yellow, green, blue, or violet. There are two special colors, which are white and black where one is the absence of color while the other is the combination of all colors respectively. Black is also the resulting color when light is unable to pass through or is absorbed by the material; such is the case of the artificial substance called vantablack. (Casas & Chinoperekweyi, 2019)

Colors can have different meanings and symbolisms from person to person, and from culture to culture.

The following tables will deal with color meanings. The first table will illustrate the meanings, perception of colors and their effects on consumers' emotions. And the second table will illustrate the meanings and symbolisms of colors across different cultures.

Table 1: Color Emotion Guide

Color	Color Symbolism	Effect/Perception
Red	<ul style="list-style-type: none"> • Danger • Fire • Love • Strength 	<ul style="list-style-type: none"> • Warmth • Desire • Powerful • Evokes Hunger
Orange	<ul style="list-style-type: none"> • Energy 	<ul style="list-style-type: none"> • Healthy

	<ul style="list-style-type: none"> • Vibrant • Youth • Freshness 	<ul style="list-style-type: none"> • Youthful • Fresh • Creative
Yellow	<ul style="list-style-type: none"> • Smiley face • Entertainment • Electricity • Smart • Clever 	<ul style="list-style-type: none"> • Optimistic • Cheerful • Playful • Happy • Energetic
Green	<ul style="list-style-type: none"> • Vitality, abundance • Wealth and money • Prestige • Nature and environment 	<ul style="list-style-type: none"> • Natural • Healthy • Rich / Wealthy • Fresh
Blue	<ul style="list-style-type: none"> • Depression • Sadness • Trust • Reliable 	<ul style="list-style-type: none"> • Reliability, Dependable • Sad, depressing • Calm atmosphere
Purple	<ul style="list-style-type: none"> • Royalty or nobility • Mystery • Femininity 	<ul style="list-style-type: none"> • Luxurious • Feminine • Nostalgic
Pink	<ul style="list-style-type: none"> • Little girls, sweetness • Roses, romance • Teen years 	<ul style="list-style-type: none"> • Purity • Innocence • Girly • Fun, youthful
Black	<ul style="list-style-type: none"> • Sorrow • Onyx stones • Formality 	<ul style="list-style-type: none"> • Sadness • Sophisticated • Professional • Serious
White	<ul style="list-style-type: none"> • Purity • Innocence • Simplicity 	<ul style="list-style-type: none"> • Straightforward • Simple • Pure

	<ul style="list-style-type: none"> • Transparency 	<ul style="list-style-type: none"> • Honest, nothing to hide
Brown	<ul style="list-style-type: none"> • Ground, Dirt, Ceramic • Coffee • Natural 	<ul style="list-style-type: none"> • Organic • Wholesome, honest • Simple • Durable

Source: (Casas & Chinoperekweyi, 2019)

The table above shows that each color has its own symbolism, effect and how it's perceived by people. In other terms, the concept of color symbolism acknowledges that colors can elicit psychological and emotional responses in individuals, with perceptions and effects varying from person to person. This variability stems from a combination of biological, psychological, cultural, and environmental factors. Biologically, differences in cone sensitivity and individual characteristics such as age, gender, and genetics influence color perception. Psychologically, personal experiences and associations with colors shape emotional responses, while culturally, societal norms dictate the symbolism attributed to different colors. Additionally, environmental context plays a role, as the same color can evoke different emotions depending on the setting. Therefore, the perception and effects of colors are complex and nuanced, reflecting the interplay of diverse factors in shaping human experience.

Table 2: Color meanings across cultures.

Color	Meanings across cultures
Blue	<ul style="list-style-type: none"> • The corporate color in America but perceived as cold and evil in East Asia. • Stands for warmth in Holland, and cold in Sweden • Color of death in Iran, but purity in India • Femininity in Holland, masculinity in Sweden • Blue represents high quality in the United States, Japan, South Korea and China. • Blue means reliable, sincere and trustworthy in Japan, South Korea and United States.
Red	<ul style="list-style-type: none"> • Red is perceived as unlucky and negative in Chad, Nigeria and Germany. But it's a lucky color in China, Denmark and

	<p>Romania.</p> <ul style="list-style-type: none"> • It's a bride's color in China, but a masculine color in the United Kingdom and France. • It symbolizes ambition and desire in India. • It symbolizes love in China, Korea, Japan and Unites States.
Yellow	<ul style="list-style-type: none"> • Yellow represents warmth in the United States, but infidelity in France. • Associated with jealousy and envy in Germany and Russia. • Considered happy and pleasant in China. • Color of royalty and authority in China. • Yellow is associated with happiness in South Korea and Japan.
Green	<ul style="list-style-type: none"> • Green represents danger or disease in Malaysia. • In Japan, it represents love, happiness, good taste and adventure. • It represents envy and jealousy in United States and Belgium. • In China, green means sincere, trustworthy and dependable. • Green also represents good taste and adventure in the United States.
Purple	<ul style="list-style-type: none"> • Purple is related to anger and envy in Mexico. • Japanese people connect purple with sin and fear. • Purple is a color of love in Japan, South Korea and the Unites States. • It is considered an expensive color in China, Korea and Japan, but inexpensive in the United States. • Purple is the color of royalty in England.
Black	<ul style="list-style-type: none"> • Black is associated with dullness and stupidity in India. • It represents grief and sadness in Western cultures. • It is also a ceremonial dress for priests, justices and subservience for lower class such as waiters and servants.

	<ul style="list-style-type: none"> • Japanese people connect black with fear. • In Germany, Poland, Mexico and Russia, black represents fear, anger and jealousy. • Black is seen as powerful and expensive in the United States, China, Japan and South Korea. • Chinese people associate black with being trust worthy and high quality.
White	<ul style="list-style-type: none"> • White symbolizes death and mourning in Japan, far East and much of Asia. • It also represents happiness and purity in Australia, New Zealand and the United States.

Source: (Aslam, 2006)

According to the table above, color perception and its associated meanings exhibit remarkable variation across cultures, reflecting intricate interactions between environmental, historical, and sociocultural factors. Within the realm of scientific understanding, the perception of color is primarily dictated by the stimulation of specific cone cells in the retina, which are sensitive to different wavelengths of light. However, the interpretation and significance assigned to these colors diverge significantly among cultures. For instance, while white traditionally symbolizes purity and innocence in Western cultures, it conveys mourning and grief in many Asian cultures. Similarly, the color red may connote luck and vitality in Chinese culture yet signify danger or caution in Western contexts. These variations underscore the complex interplay between cultural norms, traditions, and historical contexts, which mold the perception and meaning of colors within different societies. Moreover, linguistic nuances further shape color perceptions, as certain languages possess more elaborate color vocabularies, potentially influencing individuals' sensitivity and categorization of colors.

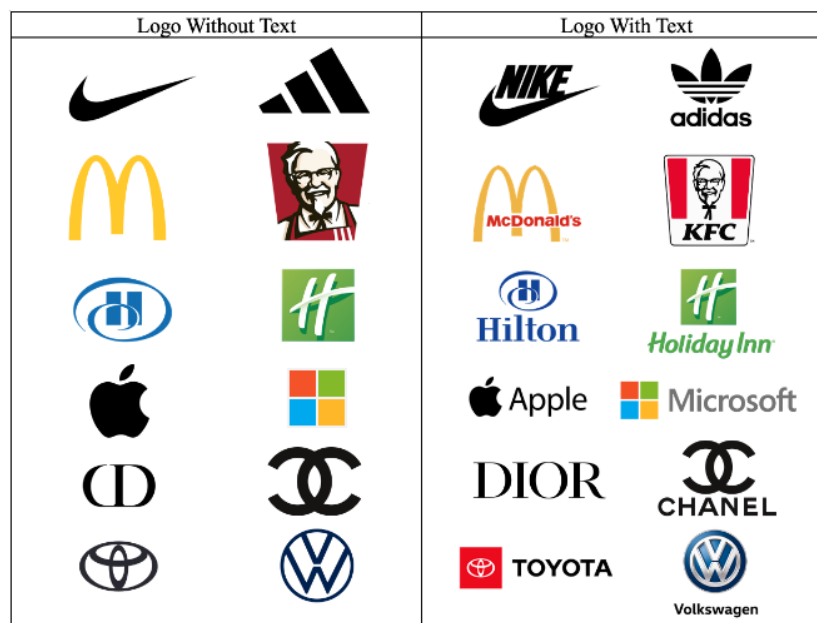
2.8. Symbols

Brand symbolism is defined as an understanding of the ways brand name symbolize user related qualities. Consumers develop and communicate their identity to product related association and user related imagery such as popularity or happiness (Keller, 2016). Therefore, many brands are purchased for the desired image they convey rather than for the possessed functional attributes of products. (Brzovska et al., 2020)

The main symbols used by brands are Logos. Image-driven logos, also known as pictorial or symbol logos, rely on visual symbols or icons rather than text to represent a brand. Universal appeal is crucial part since image driven logos use visual symbols, they can transcend language and cultural barriers. A well-designed image-driven logo can be universally understood, making it effective in global markets. A word-driven logo, also known as a logotype or word mark logo, is a type of logo that primarily relies on text or typography to represent a brand. Unlike image-driven logos that use visual symbols or icons, word-driven logos use carefully crafted typography, fonts, and letterforms to create a distinct and recognizable brand mark. Word-driven logos place the primary emphasis on the brand's name or a specific word or phrase. The text is typically the central element of the logo. (Muttaqin et al., 2023)

The following image will show examples of Image-driven logos, and Word-driven logos:

Figure 3: Logos Comparison



Source: (Muttaqin et al., 2023)

A logo is not just a visual element; it is a powerful branding tool that communicates a company's identity, fosters recognition and trust, and helps differentiate it in a competitive landscape. A well-designed logo contributes to a company's overall success by influencing consumer perceptions, behavior, and loyalty. Logos can have a significant influence on sales for a company. While a logo alone may not be the sole driver of sales, it plays a crucial role in shaping consumer perceptions, building brand recognition, and ultimately impacting

purchasing decisions. A well-designed and consistently used logo is a visual symbol that consumers associate with a specific brand. Over time, as consumers see the logo repeatedly, they develop brand recognition. When faced with a purchasing decision, consumers are more likely to choose a brand they recognize and trust, which can lead to increased sales. (Muttaqin et al., 2023)

2.9. Packaging

Packaging can be defined quite simply as an extrinsic element of the product. Packaging is the container for a product, and one of the identity factors of a brand and its value. (Hassan, 2018). Packaging includes the sub elements such as price, product, place and promotion which work with marketing tools (Hussain, 2015). It is also used to protect the product on the inside.

Our conceptual framework posits that consumer behavior within the realm of marketing is intricately influenced by a multitude of factors, including color psychology, symbols and packaging design elements. By providing a structured framework for hypothesis development and data analysis, our conceptual model facilitates the empirical testing of research hypotheses and the generation of actionable insights.

As we transition into the next chapter, which centers on the research question of “The Impact of Colors, Symbols and Packaging Elements on Consumer Behavior”, our conceptual framework lays the groundwork for exploring the specific relationships and dynamics posited within our theoretical model.

In the following chapter, we will delve into the methodological framework of the study, along with the organizational context of the host organism.

CHAPTER II: METHODOLOGICAL FRAME AND ORGANIZATIONAL CONTEXT

1. Organizational Context

In this section, we will deal with a presentation of the enterprise on which the study will be on, along with other crucial information such as its clients and products.

1.1. Presentation of SPA SIPADES “NOUARA”

For a few years now, "NOUARA" has been the leader in powder packaging in Algeria, primarily for the following products: Baking powder and Flan. High-tech machines ensure the packaging of various products. Their very high rates ensure "NOUARA" products a production that allows it a very significant presence in the market.

Founded in 1967, NOUARA now owns 3 modern production sites:

- Two sites are located in Tizi-Rached in the wilaya of Tizi-Ouzou, and on National Route N12. This unit specializes in manufacturing the entire range of "NOUARA" products.
- Another site is in Fouka in the wilaya of Tipaza. This unit exclusively produces baking powder, the flagship product of "NOUARA."
- The third site is in Ain-Benian, and in the Industrial Zone of Ain-Benian. It produces a large portion of the single-dose flan marketed by "NOUARA." This unit also manufactures the "Light" flan, a newly launched product, as well as "Sucraspa," a table sweetener, and "stick" sugar for hotels, restaurants, cafes, and tea rooms.

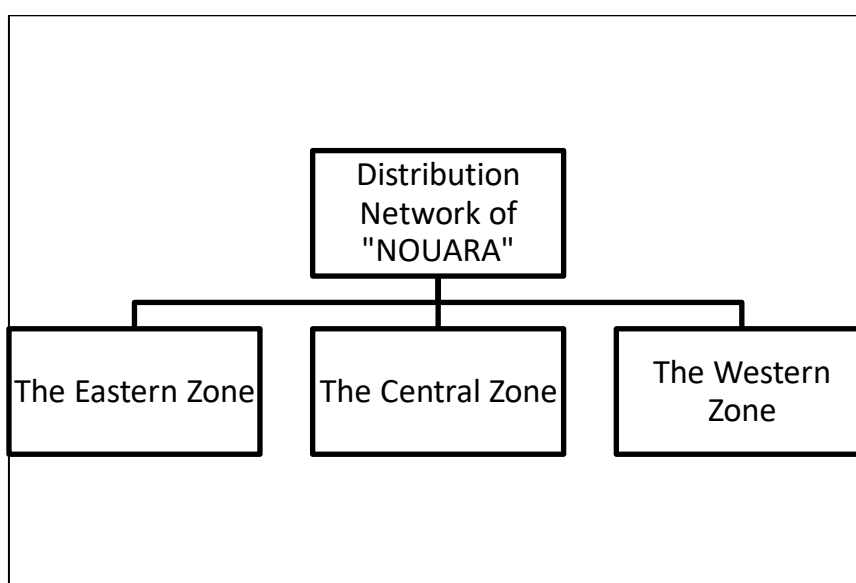
The commercial distribution network of "NOUARA" is geographically organized into 3 zones:

- The Eastern zone: served by the Tizi-Rached unit. A team of salespeople travel through this region in customized vans decorated in the colors of "NOUARA" and deliver to wholesale customers established across different cities. Two warehouses, one in SETIF and the other in MSILA, serve as delivery platforms for the sales teams.
- The Central zone: This territory, part of the Ain Benian distribution network, consists mainly of the large wholesale market of GUE DE CONSTANTINE as well as all major and medium-sized stores based in the capital and its outskirts (CARREFOUR, UNO, KHEYAR, ARIDJ, CASA SHOPPING etc.). This zone is directly managed by the commercial management of "NOUARA."

- The Western zone: This region is also served by the Ain-Benian unit. With the help of a fleet of vans and a warehouse located in J'DIOUIA, salespeople, organized into scheduled tours through the cities of this zone, regularly visit all wholesale customers with variable rotations depending on locations and seasons.

They also have other networks at: Oran, Ghelizane, Sidi Belabass, Tiaret, Souk Ahras, and Batna. And "NOUARA" also deals with GMS (Grandes et Moyennes surfaces), retail stores, wholesalers, wholesale markers (Super gros), and they also deliver or their clients could also come to them to pick up the products.

Figure 4: "NOUARA" Distribution Network



Source: Provided by host organism, by marketing department the 22/04/2024

1.2. "NOUARA" Commercial Department

During our practical part of this work, we were welcomed into the direction of the brand, specifically by the Commercial Department and the Commercial Director who served as our tutor for the duration of our stay within the host organism. This particular department dealt with sales, distribution and marketing.

Their tasks are divided as follows:

- An individual in charge of big accounts and VIP clientele who make up most of NOUARA's revenues and tied to the company by conventions. Their tasks include

receiving the VIPs, their phonecalls and their orders in all the ranges, handling bills, delivery receipts and account management in the commercial software.

- An individual in charge of the sales force, which are a bunch of commercial teams each comprised of a driver and a commercial. They travel to precise territories according to a schedule defined by the commercial administration. The tasks of this individual in charge of these teams include managing the commercial teams, relaying information.
- An individual in charge of regional distributors, overseeing teams of distributors in certain wilayas.
- The marketing department is managed by the direction. This department works closely with local TV channels and directors for commercial spots. NOUARA has sponsored some sports teams in the past including: AIN BENIAN's basketball team, the JSK football team, and a boxing team.
- There is also a team for research and development comprised of: a quality engineer, the individual in charge of production, 2 commercials, and an individual in charge of purchases. Their tasks include product design, product improvement, brainstorming, the creation of new ranges and new products.

1.3. NOUARA Products

SPA SIPADES "NOUARA" possesses four ranges of products which are: Breakfast, Sugar, Desserts and Confectionery supplies.

They have one product in the breakfast range: Chocolat en poudre, meaning chocolate powder, which sells for 105DZD a unit.

In the sugar range, their product "Sucraspa" is sugar sticks which used to be sold mostly to cafeterias, tea rooms and restaurants.

Next is one of their popular ranges which is desserts. Ranging from flan boxes of 50g to bags of 800g in the flavors: Chocolate, Strawberry, Vanilla, Banana, Caramel and Lemon. Aside from flan, there is a 'Crème Dessert' in bags of 40g in chocolate flavor. One unit of the small model of the flan costs 35DZD.

Finally, and arguably their most popular range, their confectionery supplies. This range includes powdered sugar, baking soda, maïzena also known as corn flour, vanilla sugar, cocoa powder, and their iconic baking powder in its familiar pink packaging.

2. Methodological Framework

The objective of this second section is to present the research method adopted to successfully conduct our research and achieve the objectives of this study, indicating the tools and methods of data collection, as well as the analysis instruments used.

2.1. Epistemological Position

A large number of different terms have been used to refer to creative practice in research and these terms are often used synonymously as ‘methodologies’, ‘approaches’, ‘perspectives’, and ‘philosophies’. However in order to make meaningful distinctions between the different positions and make their respective epistemological assumptions explicit a more structured knowledge framework is needed. (Feast & Melles, 2010)

Epistemology, defined by (Feast & Melles, 2010), is *“the theory of knowledge that defines what kind of knowledge is possible and legitimate”*.

One of the epistemological positions is Positivism, which is a theory similar to the utmost motive of the natural sciences, that is, to “reach the laws”, the natural purpose of positivist inquiry was to reach the laws of human behavior. Thus, positivism was defined as a scientific methodology that aimed to reach the laws of human behavior and social life. (Tekin & Kotaman, 2013)

According to (Tekin & Kotaman, 2013), the positivist approach acquired its methods from social and education research and consists of the following steps:

1. Creating an hypothesis.
2. Establishing variables (sampling) and measurement devices.
3. Data collection.
4. Data analysis.
5. Conclusion.

Going from what was mentioned above, our research aligns with the epistemological position of positivism, which involves clarifying issues by formulating hypotheses, determining their validity after analysis, and drawing conclusions from them.

2.2. Research Methodology

Quantitative research is the *“involvement of systematic and empirical investigation of phenomena through statistics and mathematics and the processing of numerical data. The process of estimating numbers in quantitative research provides the fundamental link between empirical observation and mathematical expression of quantitative relations. In quantitative research, data is typically selected and analyzed in a numerical form.”* (Basias & Pollalis, 2018).

In order to achieve our research objectives and provide high reliability, the quantitative approach is particularly the most appropriate and adequate for testing hypotheses. This approach aligns with our positivist epistemological position.

2.3. Data Collection Tools

2.3.1. Documentary Analysis

Documentary Research Method, or DSM, refers to the analysis of documents that contain information about the phenomenon we wish to study. The documentary research method is used in investigating and categorizing physical sources, most written documents, whether in the private or public domain. This research method is just as good as and sometimes even more cost effective than the social surveys, in-depth interview or participant observation. (Ahmed, 2010).

Documentary methods differ from primary research data where the researcher is responsible for the entire research process from the design of the project, to collecting, analyzing and discussing the research data. (Ahmed, 2010). So, we could say that documentary research is useful in formulating questions and theoretical frameworks, conceptualization, writing literature reviews, and discussing research results.

For our documentary research, we consulted several scientific articles on online libraries such as Google Scholar, Connected Papers, SNDL and Research Gate for writing the literature review.

2.3.2. Survey Method (Questionnaire)

A questionnaire is the main means of collecting quantitative primary data. It enables quantitative data to be collected in a standardized way so that the data is internally consistent and coherent for analysis. Questionnaires should always have a definite purpose that is related to the objectives of the research, and it needs to be clear from the outset how the findings will be used. (Roopa & Rani, 2012).

In our case, we launched a self administered electronic questionnaire (created on Google Form) which was used for collecting data. The questionnaire is comprised of questions which reflect personal and demographic aspects of the participants and elements of Visual elements as factors that affect the purchasing decision.

The items for the questionnaire were inspired by the work of (Hassan, 2018) where the author dealt with a similar study but with cereal boxes instead, meaning the impact of the cereal boxes packaging elements on consumer behavior. And a study by (Sadique, 2015) that dealt with the impact of product packaging on consumer perception and purchase Intention.

In the following, we will present the structure of the questionnaire in sections as well as the measuring scales of the variables, which are detailed as follows:

- **Eligibility:** This section contains a filter question to define the correct target audience to be surveyed, namely individuals who consume the studied product 'Flan'. It is a closed binary question (with a yes or no response).
- **Notoriety:** This second section contains questions about consumers' recognition of Flan brands. First it had two open questions, a multiple choice question, and then a binary question (Yes or No). This section was also for sample filtering purposes.
- **Colors:** The third section was dedicated for questions about colors, it contained 5 items with a scale of Likert from 1 to 5.
- **Symbols:** The fourth section had questions about symbols; it also contained 5 items with a scale of Likert from 1 to 5.
- **Packaging:** The fifth section had questions about packaging. Again, it also contained 5 items with a scale of Likert from 1 to 5.
- **Consumer Perception:** The sixth section was about Perception. It contained 3 items with a scale of Likert from 1 to 5.

- **Purchase Intention:** The seventh section was about Purchase Intention. It also contained 3 items with a scale of Likert from 1 to 5.
- **Respondent Data Sheet:** This section contained an open question asking our population to provide suggestions regarding the packaging of Nouara's Flan, as well as a series of questions to characterize the demographics of each respondent. The demographic questions in this questionnaire include gender, age, and socio-professional category.

2.4. Measuring Scale

In order to measure the variables of our study, we borrowed and adapted validated scales from the literature, specifically (Sadique, 2015) and (Hassan, 2018). They are presented in the following table:

Table 3: Measuring Scales

Variables	Items	Likert Degree of Agreement
Colors	<ul style="list-style-type: none"> - Color noticeability and attractiveness contributes to the consumer's perception of the overall product. - Color reflects and conveys the product's intended messages to the consumer. - Color memorability impacts consumer behavior during purchase process. - Color likeability impacts consumer behavior during purchase process. - Color meaningfulness impacts consumer behavior during purchase process. 	[1] Strongly Disagree [2] Disagree [3] Neutral [4] Agree [5] Strongly Agree
Symbols	<ul style="list-style-type: none"> - Symbols noticeability and attractiveness contributes to the consumer's perception of the overall product. - Symbols reflect and convey the product's intended messages to the consumer. 	[1] Strongly Disagree

	<ul style="list-style-type: none"> - Symbol memorability impacts consumer behavior during purchase process. - Symbol likeability impacts consumer behavior during purchase process. - Symbol meaningfulness impacts consumer behavior during purchase process. 	<p>[2] Disagree</p> <p>[3] Neutral</p> <p>[4] Agree</p> <p>[5] Strongly Agree</p>
Packaging	<ul style="list-style-type: none"> - Packaging noticeability and attractiveness contributes to the consumer's perception of the overall product. - Packaging reflects and conveys the product's intended messages to the consumer. - Packaging memorability impacts consumer behavior during purchase process. - Packaging likeability impacts consumer behavior during purchase process. - Packaging meaningfulness impacts consumer behavior during purchase process. 	<p>[1] Strongly Disagree</p> <p>[2] Disagree</p> <p>[3] Neutral</p> <p>[4] Agree</p> <p>[5] Strongly Agree</p>
Perception	<ul style="list-style-type: none"> - The perceived quality of the product is influenced by its visual packaging elements. - The perceived uniqueness of the product is influenced by the visual packaging elements. - Consumer's perception of the product's value is affected by the symbols and packaging elements. 	<p>[1] Strongly Disagree</p> <p>[2] Disagree</p> <p>[3] Neutral</p> <p>[4] Agree</p> <p>[5] Strongly Agree</p>
Purchase	<ul style="list-style-type: none"> - The likelihood of purchasing the product is 	

Intention	<p>increased when visual packaging elements effectively convey the intended messages.</p> <ul style="list-style-type: none"> - Intentions to purchase are strengthened when visual packaging elements align with the consumer's personal values. - Purchase intentions are fostered by the memorability of visual packaging elements associated with the product. 	<p>[1] Strongly Disagree</p> <p>[2] Disagree</p> <p>[3] Neutral</p> <p>[4] Agree</p> <p>[5] Strongly Agree</p>
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Source: Elaborated by us

2.5. Research Sample

In this section, we will present the study population, the sampling method, as well as the sample size.

2.5.1. Sample Population

The population of interest is the study's target population that it intends to study or treat. In clinical research studies, it is often not appropriate or feasible to recruit the entire population of interest. Instead, investigators will recruit a sample from the population of interest to include in their study. In such cases, the objective of the research study is to generalize the study findings from the sample to the population of interest. (Majid, 2018).

In our case, the population studied was consumers of the flan from the brand "NOUARA" in Algiers, aged from 18 to 60 years old.

2.5.2. Sampling Method

For this study, we have selected the non-random convenience sampling method. Therefore, it is a non-probabilistic sampling. To do this, the shared survey questionnaire was elaborated using the Google Forms tool in three languages (English, French, Arabic) and distributed online; via email as well as on multiple social media platforms (Facebook, Instagram, Reddit).

2.5.3. Sample Size

The Google Forms yielded a total of 103 respondents, of which 23 respondents were the total of the English survey, 77 from the French version of the survey and only 3 from the Arabic survey.

And from the filtering question at the beginning of the questionnaire, we were able to validate only 93 respondents in the end from all versions of the survey.

2.6. Practical modalities of the survey

In this section, we will present the duration and period of the survey, as well as the mode of questionnaire administration.

2.6.1. Survey period

Our survey began on the 05/04/2024 and lasted until 20/04/2024, a total of 15 days.

2.6.2. Mode of questionnaire administration

As mentioned previously, the questionnaire was shared online; via email as well as on multiple social media platforms.

2.7. Data Treatment Method

The treatment and interpretation of data collected through the questionnaire were conducted using IBM SPSS software (statistical data analysis software) (version 25.0). Finally, for visibility and comprehension purposes, we utilized Microsoft Excel software (2007) to simplify and enhance the readability of the graphs.

In terms of analysis, we will begin by testing our scales through a principal component analysis (PCA) followed by a reliability test. Subsequently, we will perform a descriptive analysis, and finally, we tested our hypotheses using multiple linear regression.

CHAPTER III: RESULTS AND DISCUSSION

1. Results

In this section, we will present the results obtained from the quantitative study based on the online survey, followed by hypothesis tests.

1.1. Respondents Data Sheet

This part of the questionnaire served to collect a brief description of the different profiles of the respondents participating in the study.

Table 4: Respondent Profiles

Variables	Variable Characteristics	Frequencies	Percentages
Gender	Male	30	32.3%
	Female	63	67.7%
Age	Less than 18 years old	2	2.2%
	18-35 years old	77	82.8%
	36-49 years old	10	10.8%
	50-59 years old	4	4.3%
	More than 60 years old	0	0%
Socio-professional Category	Student	65	69.9%
	Employed	25	26.9%
	Self-employed	3	3.2%
	Unemployed	0	0%

	Retired	0	0%
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Source: Elaborated by us using information from SPSS

The table above summarizes the respondents' information including: gender, age and socio-professional categories. The total is 93 participants, and all these respondents passed the first filtering question, and are all consumers of the product. The sample is composed principally of females (67.7%), aged between 18 to 35 years old (82.8%), from the social-professional category: Student (69.9%).

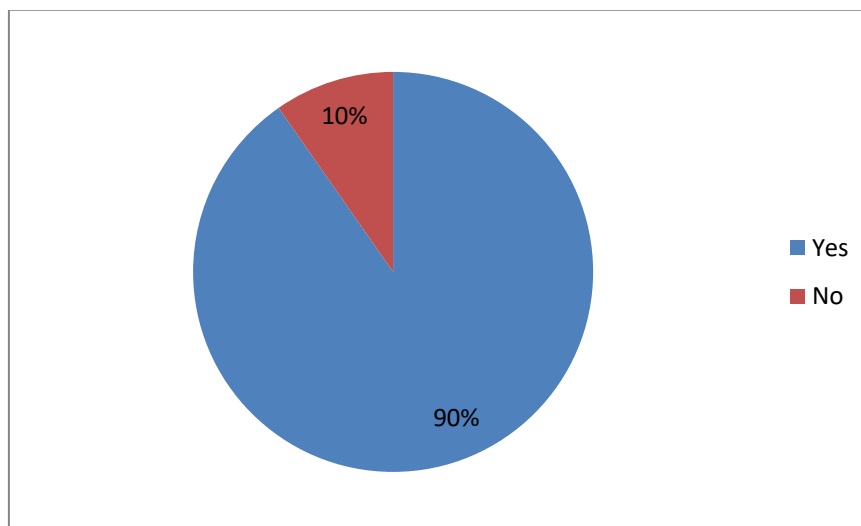
1.2. Univariate descriptive analysis

Below are the results of the univariate analysis for the variables in our study. Please note that the questionnaire was administered online, and the respondents were selected from the following filter question:

“Do you usually buy or consume Flan / Flan Powder?”

The pie chart illustrates that 90.2% of the total participants in the survey answered “Yes”, and they were the ones selected for the study.

Figure 5: Flan Consumers



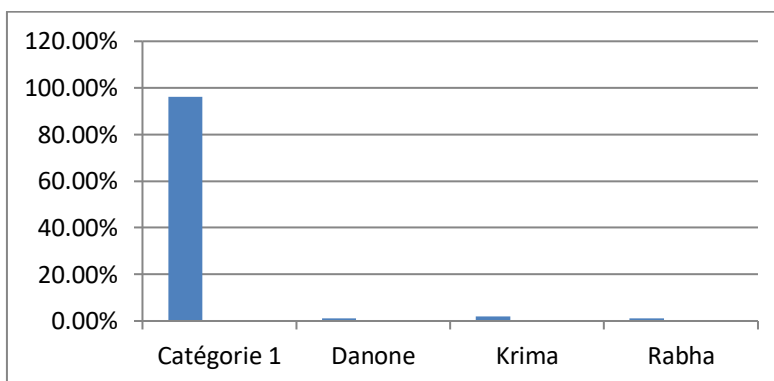
Source: Elaborated by us using Microsoft Excel

1.2.1. Brand Notoriety

Q1: “When going to buy flan powder, what is the first brand that comes to mind?”

The bar graph shows that the majority of the respondents answered “Nouara”, with a percentage of 96.1%. The other brands that were mentioned by the respondents had very little to none from the totality of the answers, which were mostly dominated by the first answer.

Figure 6: First brand that comes to mind



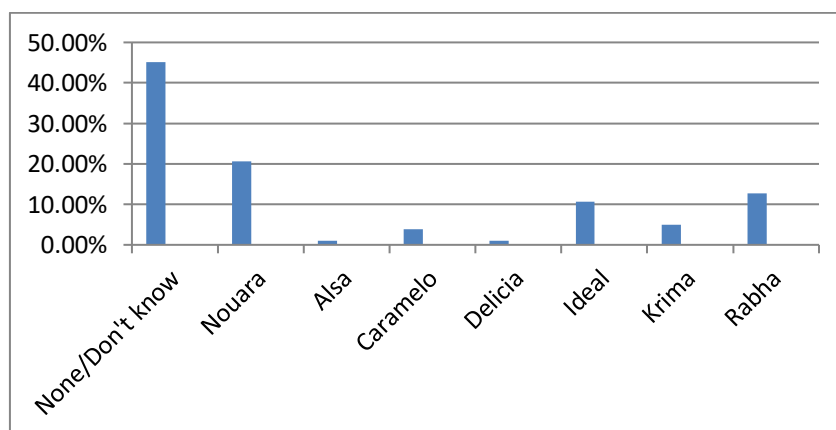
Source: Elaborated by us using Microsoft Excel

Some of the other Flan brands in the markets haven't been mentioned at all by the respondents in this question.

Q2: “Name another brand of flan powder that you know.”

The bar graph highlights that the majority of the respondents answered that they don't know another brand aside from the one they previously named, with a percentage of 45.2%.

Figure 7: Name a second brand

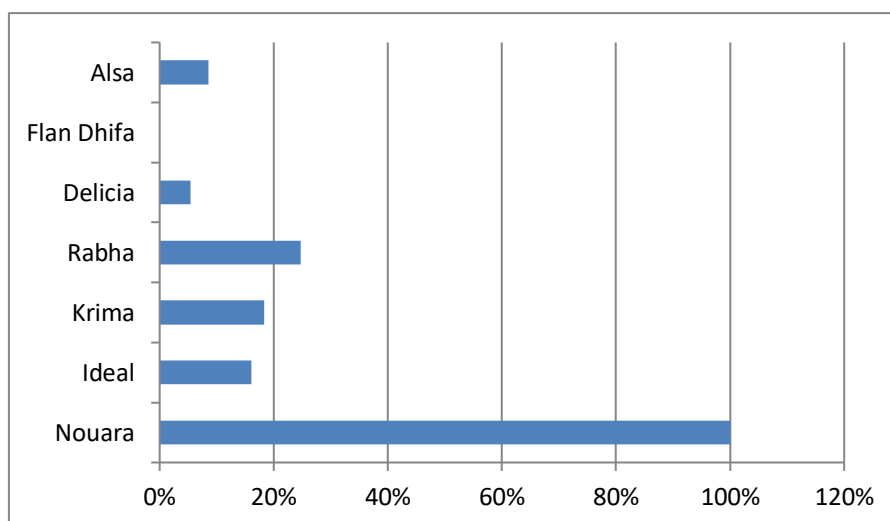


Source: Elaborated by us using Microsoft Excel

Q3: “From the following flan powder brands, which ones are you familiar with?”

The bar graph down below illustrates that the majority answered mostly Nouara as well in this multiple choice question, with a rate of 100%. While the rates of the other brands averaged between 5% to around 20%.

Figure 8: Recognized Brands

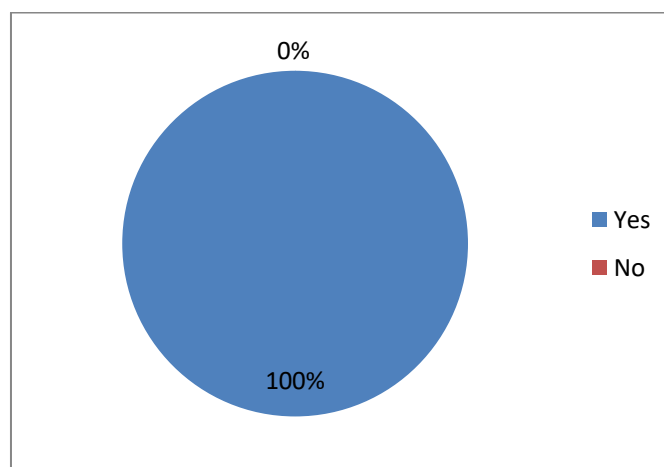


Source: Elaborated by us using Microsoft Excel

Q5: “Are you familiar with the product shown up above on the picture? (NOUARA)”

The pie chart illustrates that 100% of the respondents answered with “Yes”, that they know the product and are quite familiar with it.

Figure 9: NOUARA Product



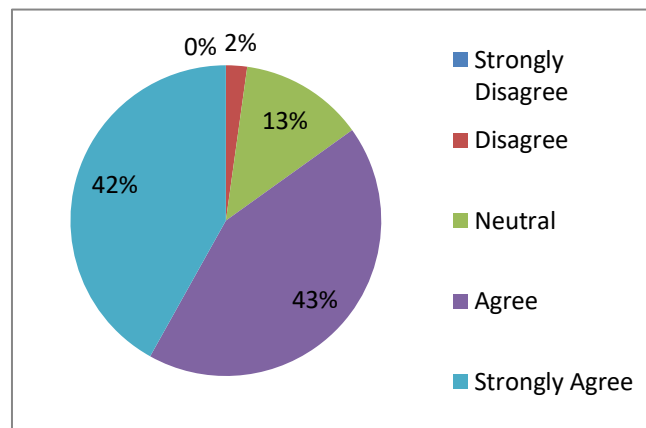
Source: Elaborated by us using Microsoft Excel

1.2.2. Colors

Q1: “Color noticeability and attractiveness contributes to the consumer’s perception of the overall product.”

The pie chart highlights that the respondents’ response towards the noticeability and attractiveness was mostly positive, as 43% agreed with the statement above, and 42% strongly agreed. While only 2% disagreed with it.

Figure 10: Color noticeability and attractiveness

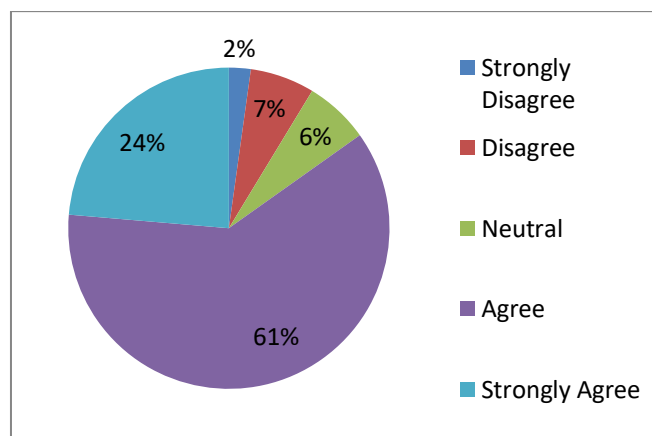


Source: Elaborated by us using Microsoft Excel

Q2: “Color reflects and conveys the product's intended messages to the consumer.”

The pie chart has shown that the majority agreed with the statement above that colors convey the intended messages of the product with a rate of 61%, while only a small minority disagreed with the statement.

Figure 11: Color reflecting and conveying messages



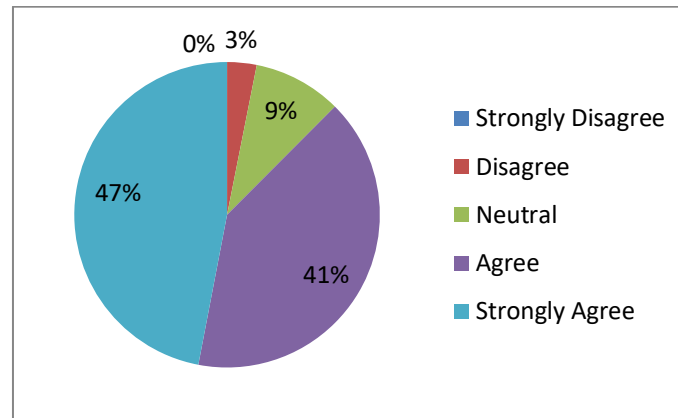
Source: Elaborated by us using Microsoft Excel

Q3: “Color memorability impacts consumer behavior during purchase process.”

The majority of the respondents strongly agreed with the statement that color memorability impacts consumer behavior with a rate of 47%.

41% agreed with the statement, while small rates of the respondents were neutral and disagreed.

Figure 12: Color memorability

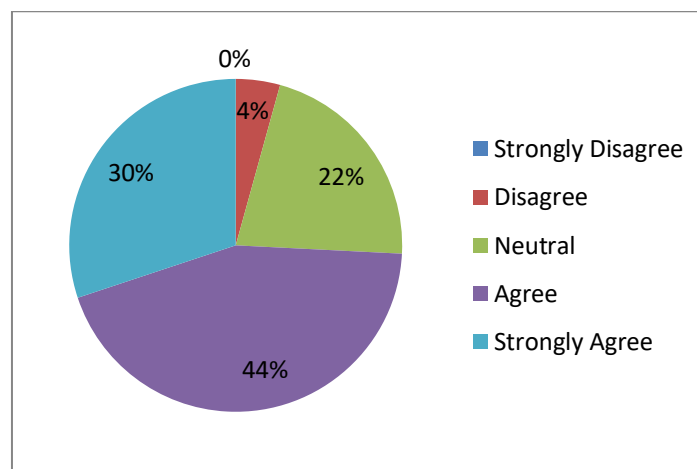


Source: Elaborated by us using Microsoft Excel

Q4: “Color likeability impacts consumer behavior during purchase process.”

The pie chart illustrates that the majority of the respondents agreed that color likeability impacts consumer behavior during purchase with a rate of 44%, while 30% strongly agreed and 22% were neutral to the statement. Only 4% disagreed with it.

Figure 13: Color likeability

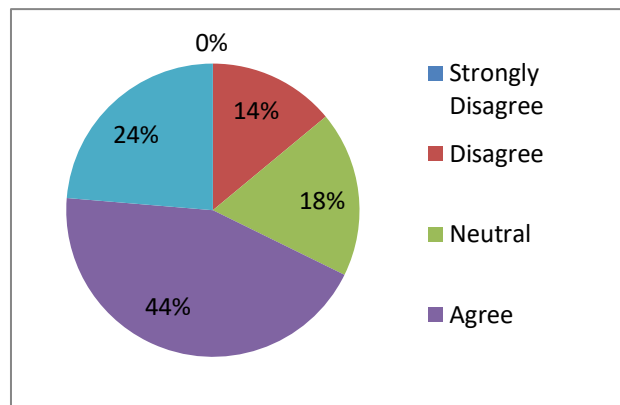


Source: Elaborated by us using Microsoft Excel

Q5: “Color meaningfulness impacts consumer behavior during purchase process.”

According to the pie chart, 44% of the respondents agreed that the meaning, or meaningfulness, of colors impacts consumer behavior during purchase process, while 24% strongly agreed with the statement. Although, about 14% disagreed with it.

Figure 14: Color meaning



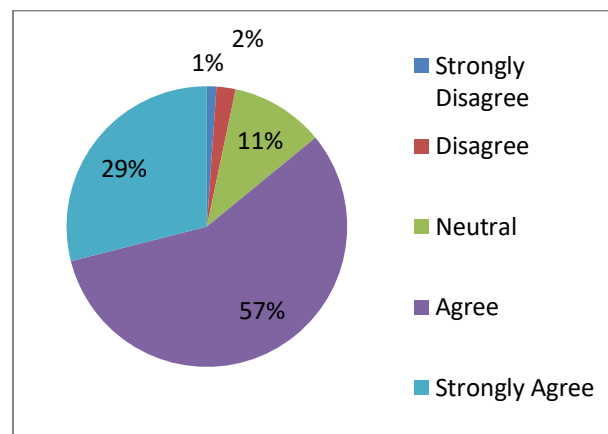
Source: Elaborated by us using Microsoft Excel

1.2.3. Symbols

Q1: “Symbols noticeability and attractiveness contributes to the consumer’s perception of the overall product.”

The pie chart illustrates that the majority of the respondents agreed with the statement that symbols noticeability and attractiveness contributes to the consumers’ perception with a rate of 57%, while only 2% disagreed with the statement.

Figure 15: Symbol noticeability and attractiveness



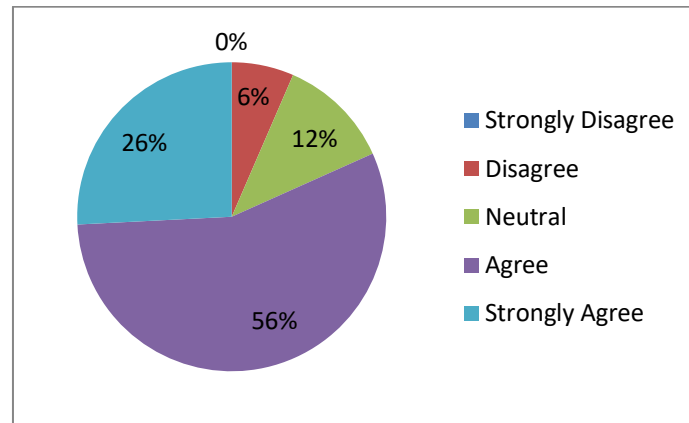
Source: Elaborated by us using Microsoft Excel

Q2: “Symbols reflect and convey the product's intended messages to the consumer.”

According to the pie chart, 56% of the respondents agree with the statement that symbols reflect the intended messages of the product, and 26% strongly agree with it.

Meanwhile, 12% are neutral and 6% disagree with the statement above and only a very small amount strongly disagrees.

Figure 16: Symbol reflecting and conveying the message

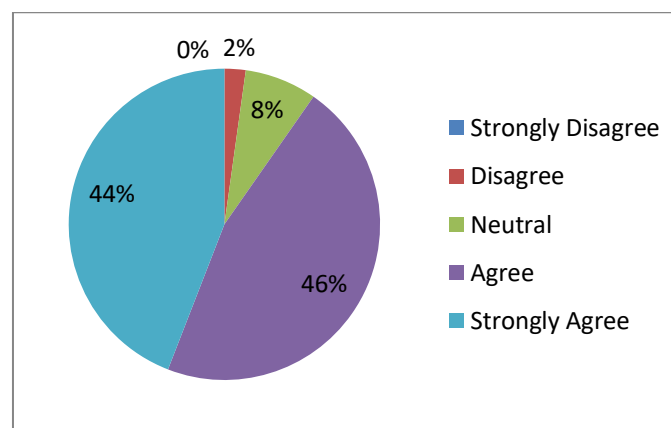


Source: Elaborated by us using Microsoft Excel

Q3: “Symbol memorability impacts consumer behavior during purchase process.”

The pie chart illustrates that the majority of the respondents had positive responses to the statement above, as 46% of them agreed and 44% strongly agreed that Symbol memorability impacts consumer behavior during purchase process. While only a rate of 2% disagreed.

Figure 17: Symbol memorability

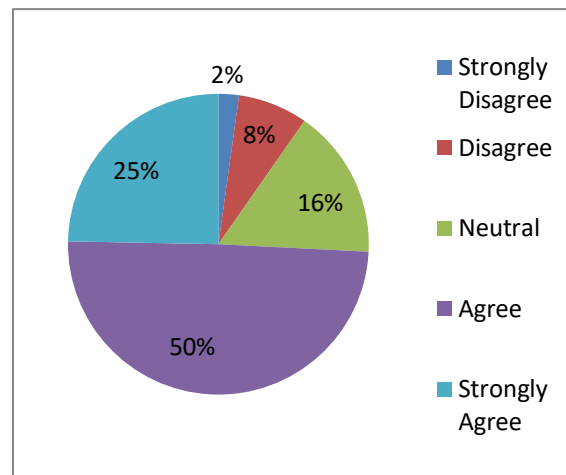


Source: Elaborated by us using Microsoft Excel

Q4: “Symbol likeability impacts consumer behavior during purchase process.”

According to the pie chart, 50% of the respondents agreed that Symbol likeability impacts consumer behavior during purchase process, and 25% strongly agreed with it. But still, about 16% were Neutral to the statement, 7% disagreed and 2% strongly disagreed with it.

Figure 18: Symbol likeability

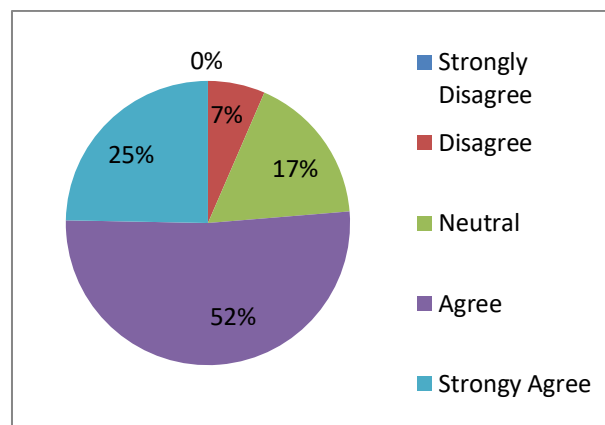


Source: Elaborated by us using Microsoft Excel

Q5: “Symbol meaningfulness impacts consumer behavior during purchase process.”

The majority of the respondents agreed with the statement that Symbol meaning, or meaningfulness, impacts consumer behavior during purchase process with a rate of 52%, and about 25% strongly agreed with the statement. Meanwhile, 17% of the respondents were Neutral and around 6% disagreed with the statement.

Figure 19: Symbol meaning.



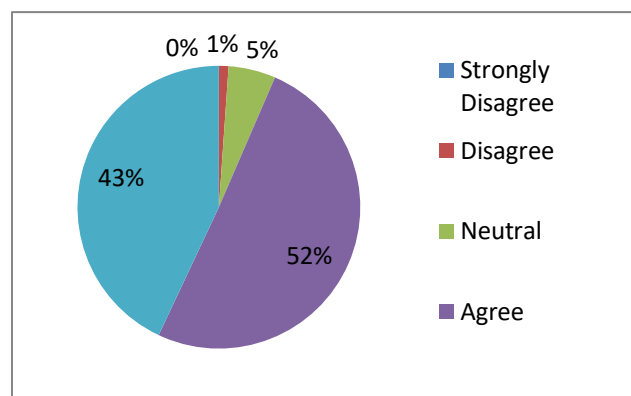
Source: Elaborated by us using Microsoft Excel

1.2.4. Packaging

Q1: “Packaging noticeability and attractiveness contributes to the consumer’s perception of the overall product.”

According to the pie chart, 51% of the respondents agree with the statement that packaging noticeability and attractiveness impacts the perception of the product, and around 43% strongly agree. Meanwhile only a small amount of respondents were neutral with a rate of 5%, and only a 1% disagreed with the statement.

Figure 20: Packaging noticeability and attractiveness

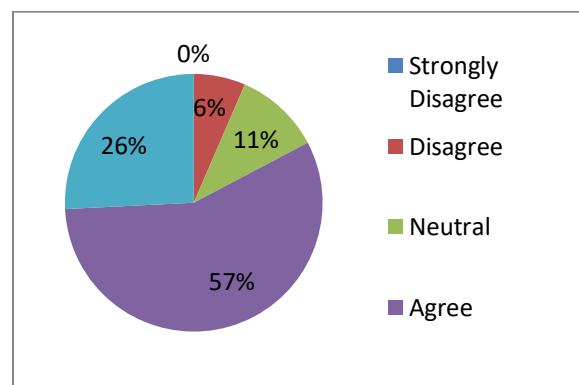


Source: Elaborated by us using Microsoft Excel

Q2: “Packaging reflects and conveys the product's intended messages to the consumer.”

The pie chart illustrates that the majority of the respondents agreed that the packaging reflects the product’s intended messages with a rate of 57%, and 26 of them strongly agreed. While only 6% disagreed with the statement.

Figure 21: Packaging conveying and reflecting the intended message

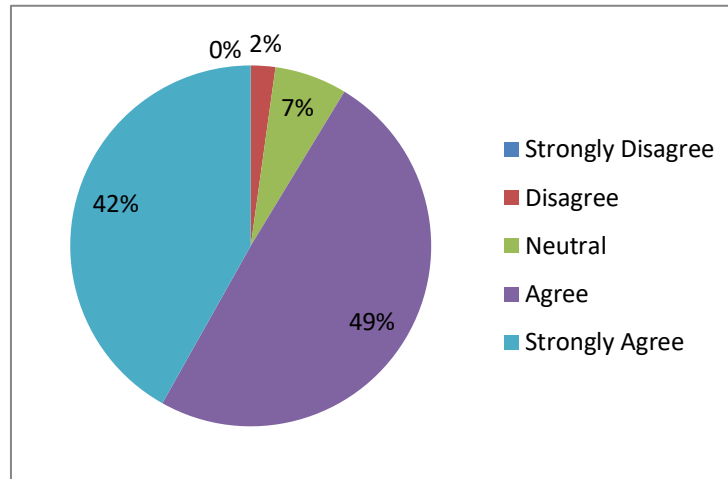


Source: Elaborated by us using Microsoft Excel

Q3: “Packaging memorability impacts consumer behavior during purchase process.”

The pie chart shows that the majority were in favor of the statement, as 49% agreed and 42% strongly agreed with it, that the packaging memorability impacts consumer behavior during purchase process. Meanwhile, 7% were Neutral and only 2% disagreed.

Figure 22: Packaging memorability

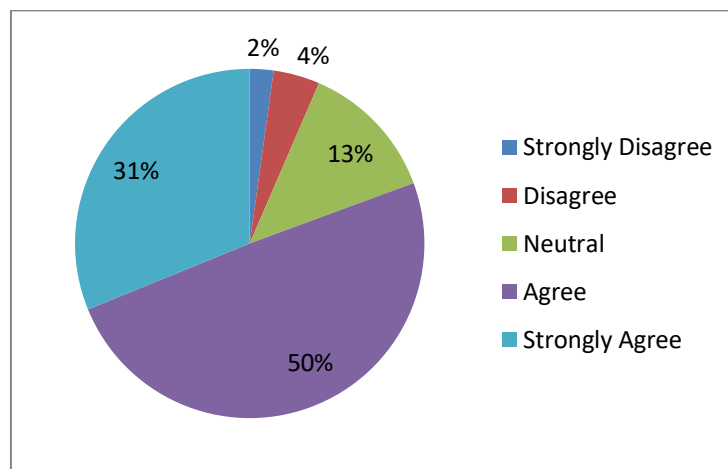


Source: Elaborated by us using Microsoft Excel

Q4: “Packaging likeability impacts consumer behavior during purchase process.”

According to the pie chart, 50% of the respondents agree with the statement above that packaging likeability impacts consumer behavior during purchase process, and 31% strongly agree. While only 4% disagree, and 2% strongly disagree.

Figure 23: Packaging likeability

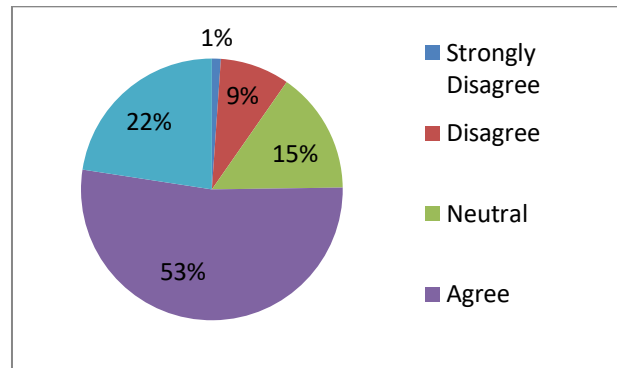


Source: Elaborated by us using Microsoft Excel

Q5: “Packaging meaningfulness impacts consumer behavior during purchase process.”

The majority of the respondents agree that packaging meaning impacts consumer behavior during purchase process with a rate of 53%, and 22% strongly agree with it. Although, 15% of the respondents remained neutral, and 9% disagreed with the statement and 1% strongly disagreed.

Figure 24: Packaging meaning



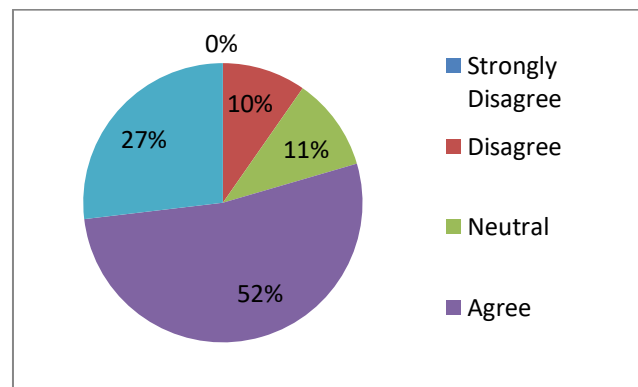
Source: Elaborated by us using Microsoft Excel

1.2.5. Perception

Q1: “The perceived quality of the product is influenced by its visual packaging elements.”

According to the pie chart below, 52% of the respondents agree that the perceived quality of the product is influenced by its visual packaging elements, and 27% strongly agree with that statement. While around 11% respondents remained neutral and 10% disagreed with it.

Figure 25: Perceived quality is influenced by visual packaging elements

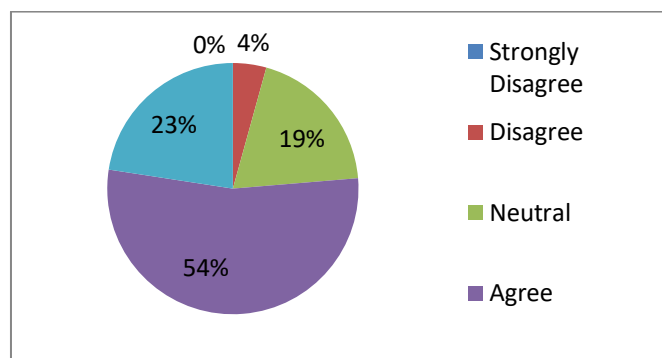


Source: Elaborated by us using Microsoft Excel

Q2: “The perceived uniqueness of the product is influenced by the visual packaging elements.”

The pie chart highlights that 54% of the respondents agreed with the statement that the perceived uniqueness of the product is influenced by the visual packaging elements, and about 23% strongly agreed with it. Meanwhile, 19% of the respondents were neutral to the statement mentioned above, and only 4% disagreed with it.

Figure 26: Perceived uniqueness is influenced by visual packaging elements

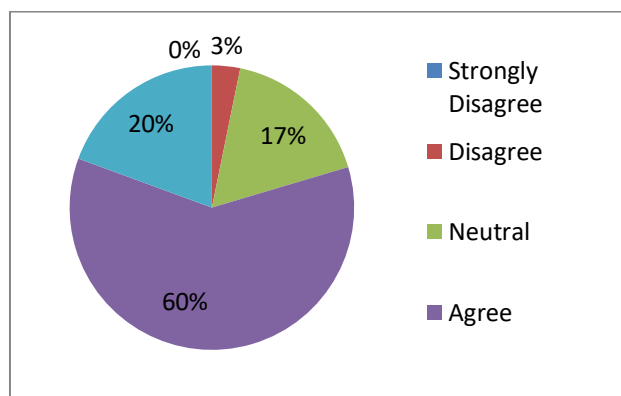


Source: Elaborated by us using Microsoft Excel

Q3: “Consumer's perception of the product's value is affected by the visual packaging elements.”

The pie chart illustrates that the majority of the respondents agreed with the statement above that consumers' perception of the product's value is affected by the visual packaging elements by a rate of 60%, and around 20% of the respondents strongly agreed with it. Meanwhile, 17% of the respondents remained neutral, and only 3% disagreed.

Figure 27: Perception of the value is affected by the visual packaging elements



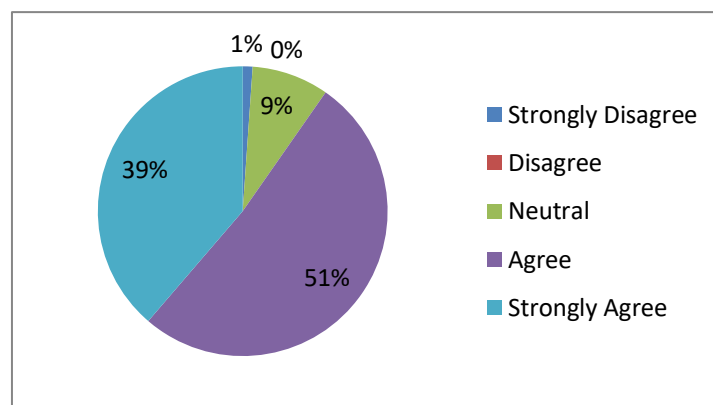
Source: Elaborated by us using Microsoft Excel

1.2.6. Purchase Intention

Q1: “The likelihood of purchasing the product is increased when visual packaging elements effectively convey the intended messages.”

According to the pie chart, the majority of the respondents agreed by a rate of 52% with the statement that the likelihood of purchasing the product is increased when visual packaging elements convey the intended messages, while 39% strongly agreed with it. Meanwhile, 8% remained neutral to the statement and only 1% strongly disagreed.

Figure 28: Purchase Intention is increased when visual elements convey messages

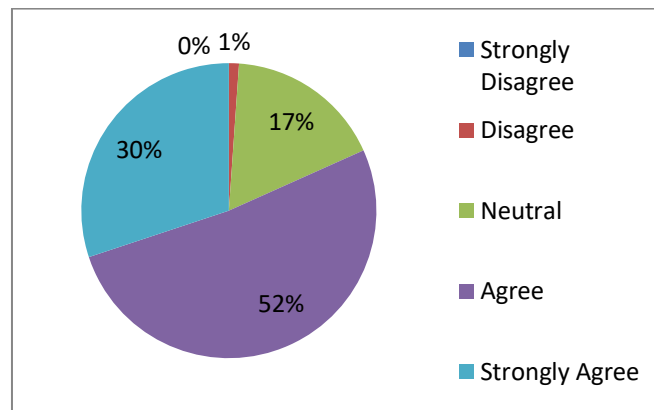


Source: Elaborated by us using Microsoft Excel

Q2: “Intentions to purchase are strengthened when visual packaging elements align with the consumer’s personal values.”

According to the pie chart down below, 52% of the respondents agree that the intentions to purchase increased when visual packaging elements align with the consumer’s personal values, and around 30% of the strongly agree with that statement. Meanwhile, around 17% of the respondents remained neutral, and only 1% disagreed with the statement mentioned above.

Figure 29: Purchase Intention increased when visual elements align with personal values

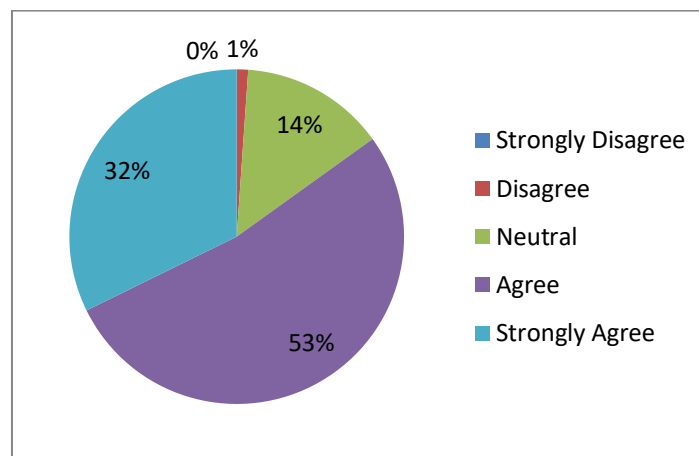


Source: Elaborated by us using Microsoft Excel

Q3: “Purchase intentions are fostered by the memorability of visual packaging elements associated with the product.”

The pie chart showcases that 53% of the respondents agreed with the statement that purchase intentions are fostered by the memorability of the visual packaging elements, and a rate of 32% strongly agreed with it.

Figure 30: Purchase Intention is fostered by the memorability of visual packaging elements



Source: Elaborated by us using Microsoft Excel

But still, 14% of the respondents remained neutral while only 1% disagreed with the statement.

1.3. Preliminary data adequacy analysis for multivariate analysis

Before proceeding with data analysis and testing our hypotheses, we need to verify if our data is suitable for multivariate analysis. This verification involves checking for missing values as well as the quasi-normality of the data.

1.3.1. Missing Values

The missing values will need to be addressed prior to analysis using various methods. In this study, we collected complete questionnaire answers through the online administration mode and the obligatory response function.

1.3.2. The quasi-normality of the data

In order to proceed with our multivariate analysis, we ensured that our data followed a distribution close to normality (quasi-normality) by inspecting the coefficients of skewness and kurtosis, which, according to (Carricano et al., 2010) should respectively vary between $[-2; 2]$ and $[-2; 2]$. The results show a satisfactory univariate quasi-normality of the data.

1.4. Multivariate descriptive analyses

In order to validate or reject hypotheses regarding the impact of visual elements on consumer perception and purchase intention, we are conducting an analysis using the SPSS tool. We chose this method of analysis because it is the most suitable for studying our data; it allows us to identify the visual element that is most discriminating among the visual elements chosen for the study that we derived from our literature review.

In this section, we proceed with the multivariate analysis (Principal Component Analysis and Multiple Regression).

1.4.1. Principal Component Analysis

We conducted PCA to assess the validity and reliability of the quality of our measurement scales. We identified the recommended thresholds in the literature. We followed Kaiser's rule in explained total variance, retaining only the axes with an eigenvalue greater than 1. For correlations, we accepted correlations greater than 0.5 and a KMO greater than 0.3 (Afifi et al., 2019). The Bartlett test, which tests the null hypothesis that all correlations are equal to

zero, should be significant at the alpha level greater than 0.05, although this test is highly sensitive to the number of cases and is almost always significant.

The reliability of the measurement scales is verified by the test of internal consistency, the Cronbach's alpha threshold is 0.7, which is acceptable.

1.4.1.1. Measurement scale of Colors

A principal component analysis was conducted on all five items of the Color element. The results demonstrate a strong correlation (over 0.5) between most of the items used. (See Appendix 2.)

The table of explained total variance indicates one component that explains 50.707% of the initial information. Only one axis is of interest, with a value of 2,535.

The KMO index is equal to 0,749 (See Appendix 2), indicating that all selected items are highly consistent. The partial correlations between variables are therefore good. The Bartlett test in our case is significant, showing that the factorial model is appropriate for all dimensions.

The component matrix indicates that all items have good structural coefficients. Therefore, we proceed with the analysis and retain all items for further analysis.

The reliability test shows that the homogeneity of this scale is satisfactory, with Cronbach's Alpha equal to 0.756. The tables for the rest of the analysis are in (Appendix 2).

1.4.1.2. Measurement scale of Symbols

A principal component analysis was conducted on all five items of the Symbols element. The results demonstrate a strong correlation (over 0.5) between most of the items used. (See Appendix 2.)

The table of explained total variance indicates one component that explains 49,53% of the initial information. Only one axis is of interest, with a value of 2,477.

The KMO index is equal to 0,784 (See Appendix 2), indicating that all selected items are highly consistent. The partial correlations between variables are therefore good. The Bartlett test in our case is significant, showing that the factorial model is appropriate for all dimensions.

The component matrix indicates that all items have good structural coefficients. Therefore, we proceed with the analysis and retain all items for further analysis.

The reliability test shows that the homogeneity of this scale is satisfactory, with Cronbach's Alpha equal to 0.743. The tables for the rest of the analysis are in (Appendix 2).

1.4.1.3. Measurement scale of Packaging

A principal component analysis was conducted on all five items of the Packaging element. The results demonstrate a strong correlation (over 0.5) between most of the items used. (See Appendix 2).

The table of explained total variance indicates one component that explains 46,89% of the initial information. Only one axis is of interest, with a value of 2,345.

The KMO index is equal to 0,705 (See Appendix 2), indicating that all selected items are highly consistent. The partial correlations between variables are therefore good. The Bartlett test in our case is significant, showing that the factorial model is appropriate for all dimensions.

The component matrix indicates that all items have good structural coefficients. Therefore, we proceed with the analysis and retain all items for further analysis.

The reliability test shows that the homogeneity of this scale is satisfactory, with Cronbach's Alpha equal to 0.715. The tables for the rest of the analysis are in (Appendix 2).

1.4.1.4. Measurement scale of Perception

A principal component analysis was conducted on all three items of the Perception element. The results demonstrate a strong correlation (over 0.5) between most of the items used. (See Appendix 2).

The table of explained total variance indicates one component that explains 58,41% of the initial information. Only one axis is of interest, with a value of 1,753.

The KMO index is equal to 0,634 (See Appendix 2), indicating that all selected items are consistent. The partial correlations between variables are therefore good. The Bartlett test in our case is significant, showing that the factorial model is appropriate for all dimensions.

The component matrix indicates that all items have good structural coefficients. Therefore, we proceed with the analysis and retain all items for further analysis.

The reliability test shows that the homogeneity of this scale is satisfactory, with Cronbach's Alpha equal to 0.632. The tables for the rest of the analysis are in (Appendix 2).

1.4.1.5. Measurement scale of Purchase Intention

A principal component analysis was conducted on all three items of the Purchase Intention element. The results demonstrate a strong correlation (over 0.5) between most of the items used. (See Appendix 2)

The table of explained total variance indicates one component that explains 51,13% of the initial information. Only one axis is of interest, with a value of 1,534.

The KMO index is equal to 0,609 (See Appendix 2), indicating that all selected items are consistent. The partial correlations between variables are therefore good. The Bartlett test in our case is significant, showing that the factorial model is appropriate for all dimensions.

The component matrix indicates that all items have good structural coefficients. Therefore, we proceed with the analysis and retain all items for further analysis.

The reliability test shows that the homogeneity of this scale is satisfactory, with Cronbach's Alpha equal to 0.521. The tables for the rest of the analysis are in (Appendix 2).

Down below is a table summarizing all the important values of the PCA analysis of our five studied variables.

Table 5: Table of principal component analysis of the studied variables.

Variable	KMO	SIG	Explained Total Variance	Eigenvalue	Component	Cronbach's Alpha
Colors	0,749	0,000	50,707%	2,535	1	0.756
Symbols	0,784	0,000	49,53%	2,477	1	0.743

Packaging	0,705	0,000	46,89%	2,345	1	0.715
Perception	0,634	0,000	58,41%	1,753	1	0.632
Purchase Intention	0,609	0,000	51,13%	1,534	1	0.521

Source: Elaborated by us using SPSS

Now that we have completed the step of PCA, we may move on to testing our hypotheses through a multiple regression analysis using the SPSS tool.

1.4.2. Hypotheses Testing

The hypotheses of our research were tested by performing multiple regression analyses. The nature of the variables in the research model allowed us to conduct these analyses. According to (Cornillon & Matzner-Løber, 2007), the recommended threshold for this type of analysis is the adjusted R-squared, which should be above 10% and explains the quality of the model studied by its role. The decision rule for the hypotheses is the significance level of the F value, which should be less than 0.05 (Cornillon & Matzner-Løber, 2007), as we read in the ANOVA table. The VIF should not exceed the value of 10, and the tolerance of collinearity should be greater than 0.20.

1.4.2.1. Test of the effect of Colors, Symbols, Packaging on Consumer Perception

We will perform multiple regression analysis between the independent variables, which are colors, symbols and packaging, and the dependent variable, which is consumer perception. The results are as follows.

We observe in the table down below that the value of R is equal to 0.3, suggesting a moderate linear relationship. The R-squared shows that the variance of the independent variables explains 11% of the dependent variable, which is low.

The adjusted R-squared of our model has a percentage of 10.5%, indicating that the model has a weak explanatory power.

The VIF is less than 10, allowing us to conclude that our model is a linear regression model with no perfect multicollinearity.

Upon reading the ANOVA table, we observe that the F value is 11,747, which is significant (Sig < 0.05), leading us to affirm that Packaging has a positive effect on Consumer Perception. (See Appendix 3).

H1c is validated.

H1a and H1b are not validated.

Down below is a table summarizing the multiple regression analysis between our independent variables and dependent variable.

Table 6: Summary of multiple linear regression 1.

Independent Variables	Dependant Variable	R	R2	Adjusted R2	F	SIG	VIF	Hypotheses
Colors	Consumer Perception	0.338	0.114	0.105	11,747	0.8		H1a rejected
Symbols						0.5		H1b rejected
Packaging						0.001	1,596	H1c validated

Source: Elaborated by us using SPSS

1.4.2.2. Test of the effect of Colors, Symbols, Packaging on Consumer Purchase

Intention

We will perform multiple regression analysis between the independent variables, which are colors, symbols and packaging, and the dependent variable, which is consumer purchase intention.

We observe in the table down below that the value of R is equal to 0.5, suggesting a strong linear relationship. The R-squared shows that the variance of the independent variables explains 29% in model 1 and 35.9% in model 2 of the dependent variable, which is a moderate level.

The adjusted R-squared of our model has a percentage of 28,8% in model 1 and 34.4% in model 2, indicating that the model has a moderate explanatory power.

The VIF is less than 10, allowing us to conclude that our model is a linear regression model with no perfect multicollinearity.

Upon reading the ANOVA table, we observe that the F value is 38,224 in model 1 and 25,162 in model 2, which is significant (Sig < 0.05), leading us to affirm that Colors, and Packaging have a positive effect on Consumer Purchase Intention. (See Appendix 3).

H2a and H2c are validated.

H2b is not validated.

Down below is a table summarizing the multiple regression analysis between our independent variables and dependant variable.

Table 7: Summary of multiple linear regression 2.

Independent Variables	Dependant Variable	R	R2	Adjusted R2	F	SIG	VIF	Hypotheses
			0.29	0.288	38,224	0.000	1,533	H2a

Colors	Consumer Purchase Intention	0.5						validated
Symbols						0.5		H2b rejected
Packaging			0.359	0.344	25,162	0.000	1,596	H2c validated

Source: Elaborated by us using SPSS

A summary of all the results obtained from testing the hypotheses is presented in the following table.

Table 8: Summary of hypotheses tests

Hypotheses	Statements	Confirmations	
H1a	Colors positively impact Consumer perception	No	Rejected
H1b	Symbols positively impact Consumer Perception	No	Rejected
H1c	Packaging positively impacts Consumer Perception	Yes	Validated
H2a	Colors positively impact Consumer Purchase Intention	Yes	Validated
H2b	Symbols positively impact Consumer Purchase Intention	No	Rejected
H2c	Packaging positively impacts Consumer Purchase Intention	Yes	Validated

Source: Elaborated by us

2. Discussion

The analysis of the results of our quantitative research leads us to make some observations regarding the effect of visual elements, comprised of colors, symbols and packaging elements, on consumer perception and purchase intention.

First, through descriptive analysis, we were able to gather general information about the profiles of the respondents. Most of the respondents were females aged between 18 to 35 years old, composed of students and employed. These profiles are characterized by expressing more interest in the product “FLAN NOUARA”, and this could have an effect on their perception and purchase intentions of the product.

Next are the discussions of the hypotheses tests.

2.1. Visual elements positively impact Consumer Perception

Visual elements play an important role in consumer perception, influencing their attitudes and behaviors towards products or brands. This section aims to discuss the hypothesis stated on that part of the study, specifically on the colors, symbols and packaging elements.

H1a: Colors positively impact Consumer perception. (Hypothesis Rejected)

Colors are fundamental elements in visual communication, often associated with emotions, meanings, and brand identities. The hypothesis states that colors have a positive influence on consumer perception. However, the findings of the analysis do not support this hypothesis. It suggests that while colors may contribute to the overall aesthetic appeal, their direct impact on consumer perception may be less significant than previously assumed. This result contradicted the findings of the study by (Hassan, 2018), where they claimed colors had a direct influence on consumer perception.

Our results also contradicted the results of the study by (Casas & Chinoperekweyi, 2019) which delved into a lot of detail about the impact of every color on consumer perception, and came to the conclusion that color does indeed play a significant role in impacting consumer psychology and perception and even went as far as to claim that color is one of the main components in the product’s 4P from the Marketing Mix.

H1b: Symbols positively impact Consumer Perception. (Hypothesis Rejected)

Symbols serve as visual cues that convey meanings, values, and associations related to the product or the brand. This hypothesis proposes that symbols have a positive influence on consumer perception. However, the result of the analysis does not support this hypothesis. It implies that while symbols may enhance brand recognition and differentiation, their direct impact on consumer perception may be limited. This result also goes against the findings of the study on visual cues done by (Hassan, 2018) which confirmed the impact of symbols on consumer perception and presented solid proof of his results.

Our results also contradict the findings of (Muttaqin et al., 2023) where they claimed that symbols play a crucial role in ensuring visual consistency within a brand, reinforce the broader messaging and positioning established through branding, and the significant role symbols play in shaping how consumers perceive and interact with a brand and products.

Future studies could delve into the types of symbols and their effectiveness in eliciting desired consumer responses in order to gain more insight into the vast world of symbols.

H1c: Packaging positively impacts Consumer Perception. (Hypothesis Validated)

Packaging encompasses various visual elements, including practicality, graphics, and typography, which contribute to the overall presentation of a product. The hypothesis suggests that packaging has a positive influence on consumer perception. The findings of this study confirm this hypothesis, indicating that packaging plays a significant role in shaping consumer attitudes and preferences. Effective packaging design can enhance product appeal, communicate brand values, and influence purchase decisions. This result goes hand-in-hand with the results of the studies by (Hassan, 2018) and (Hussain, 2015) where they claim packaging does indeed have a positive influence on consumer perception.

It also resonates with the study by (Wyrwa & Barska, 2017) who not only came to the result that packaging does indeed play a role in impacting consumer behavior and determining their interest in the product, but that it also highlights the role of packaging as a source of reliable information and security.

To summarize this section, we can say that while colors and symbols may not directly influence consumer perception as hypothesized, packaging emerges as a critical factor in shaping consumer attitudes and behaviors.

2. Visual elements positively impact Consumer Purchase Intention

H2a: Colors positively impact Consumer Purchase Intention. (Hypothesis Validated)

As stated previously, colors serve as powerful stimuli that evoke emotions, convey meanings, and elicit responses from consumers. The hypothesis proposes that colors have a positive influence on consumer purchase intention. Unlike its impact on consumer perception, the findings of the results analysis support this hypothesis, indicating that colors play a significant role in stimulating purchase interest. Different colors may evoke distinct psychological associations, thereby influencing consumers' tendency to purchase. This result resonates harmoniously with the findings of the study conducted by (Hassan, 2018).

We also came to similar results with the study done by (Aghdaie & Honari, 2014) confirming that colors do indeed play a role in consumer shopping behavior of all ages and their purchase intentions.

Although we find it interesting that colors do not impact perception, yet they do have an impact on consumer purchase intention, we may suggest some possible explanations as to why that is the case. Colors can influence purchase intention through subconscious emotional cues, attention-grabbing effects, brand alignment, and contextual influences, even if they do not significantly alter consumers' overall perception of the product or brand. This understanding highlights the complexity of consumer behavior and the multifaceted role that visual elements play in shaping purchasing decisions.

H2b: Symbols positively impact Consumer Purchase Intention. (Hypothesis Rejected)

As stated previously, symbols are visual representations that convey meanings, values, and identities associated with products or brands. This hypothesis suggests that symbols have a positive impact on consumer purchase intention. However, the results collected from the analysis do not support this hypothesis. It suggests that while symbols may contribute to brand recognition and differentiation, their direct influence on consumer purchase intention may be limited.

This also contradicts the results of (Hassan, 2018) on the study about the visuals of the “Chocapic Nestlé” cereal brand. In our case, the result of the analysis could mean that the image on the product of “FLAN NOUARA” has no impact on the purchase decision of the consumers, even with cultural context.

Our results also went against the findings of (Muttaqin et al., 2023) where they claimed that symbols play a crucial role in ensuring visual consistency within a brand, reinforce the broader messaging and positioning established through branding, and the significant role symbols play in shaping how consumers perceive and interact with a brand and products.

H2c: Packaging positively impacts Consumer Purchase Intention

Packaging serves as a tangible interface between consumers and products, influencing purchase decisions through its design, functionality, and aesthetic appeal. The hypothesis states that packaging has a positive impact on consumer purchase intention. The findings of this study through analysis of the results validate this hypothesis, indicating that packaging design significantly influences consumers' likelihood to purchase a product. This also resonates with the findings of (Hussain, 2015) and (Hassan, 2018) where they also came to results that packaging does indeed positively influence consumers' purchase intentions.

Along with the previously mentioned researches, our results also resonated with the findings of (Benachenhou et al., 2018) where they came to the conclusion that packaging plays a vital role as an integral part in consumers purchase intention and their behavior.

To us, effective packaging communicates product benefits, enhances brand perception, and differentiates products from competitors, thereby increasing purchase intention. Marketers should prioritize packaging design as a strategic tool for driving consumer engagement and conversion.

To summarize this section, we can say that while colors and packaging emerge as significant drivers of purchase interest, the role of symbols in influencing consumer behavior requires further investigation.

And to conclude the discussion, we can say that packaging mainly plays a primary role in positively impacting consumers' perceptions and their purchase intentions of the brand SPA SIPADES "NOUARA", more than the other visual elements of the products, which were colors and symbols in our case.

CONCLUSION

Our study aims to verify our initial hypotheses and address our research question as follows: "What is the impact of Colors, Symbols and Packaging Elements on Consumer Perception and Purchase Intention?"

We conclude our work by recalling the objectives, the results obtained, and the suggestions formulated. We will also present the limitations as well as future research directions.

The primary objective of this study was to examine the impact of visual design elements (colors, symbols, packaging) on consumer behavior, considering two dimensions of the vast world of consumer behavior (perception and purchase intention). Indeed, we addressed the case of the Algerian company SPA SIPADES "NOUARA", particularly their product "Flan Nouara".

From our literature review, we derived a total of six hypotheses, the first three stating that colors, symbols and packaging positively impact consumer perception, and the last three stating that colors, symbols and packaging positively impact consumer purchase intention. This was followed by a quantitative approach with a survey questionnaire; we first conducted a descriptive analysis. The objective of this analysis was to understand the composition of our sample. The results showed that the majority of respondents already knew about the brand and the studied product.

Secondly, to verify our six hypotheses, we conducted a multiple regression analysis. The results of the analysis indicated a significant and positive effect first of packaging on consumer perception, and then of colors and packaging on consumer purchase intention, leading us also to the deduction that symbols do not have a significant role in impacting the consumers of "Flan Nouara".

From an academic point of view, the impact of visual design elements on consumer behavior is a topic that has been little discussed in Algeria, despite it being a classic subject.

Consequently, and based on what has just been said from a managerial perspective, our results appear interesting to us. On the side of SPA SIPADES "NOUARA", the results seem promising to further enhance their visual design elements in order to further impact their consumers' perception and purchases.

Therefore, we suggest to the company to communicate effectively through design to ensure the success of getting their message to the consumers and to strengthen their presence. Although, some may think Nouara's packaging may be outdated but in a way, it still speaks to the nostalgic Algerian consumers and their culture, like Nouara's signature jingle did back then. So we suppose that a full rebranding could have a less positive effect since it is already a very well known brand, but upgrading the packaging and logo is a must in modern age, especially with the results we came to with symbols.

It should be stated that we encountered a number of obstacles that hindered us from achieving the expected results. We will mention:

- The lack of literature on this topic, especially Algerian studies. Along with the difficulty of finding relevant literature.
- Previous studies addressing our topic in general and not with the specific details we required for our study.
- The difficulty of collecting responses to the questionnaire.

In order to further complement research on visual design elements and their role in consumer behavior, additional studies can be conducted on other types of design elements, or to focus on other dimensions of consumer behavior.

Additionally, integrating sales data from the company to observe the influence of visual design elements on sales could be valuable. Finally, further research could focus mainly on the vast world of symbols in product design elements.

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APPENDICES

APPENDIX 1: QUESTIONNAIRE

Greetings, I am a second year Marketing Management master student at ENSM. As part of a final dissertation, I am conducting a survey about visual packaging elements on individually packaged flan powder from the NOUARA brand. Kindly spare us a few minutes of your time to respond to this questionnaire for academic purposes, ensuring complete confidentiality.

Thank you in advance for your contribution.

Eligibility

1. Do you usually buy or consume Flan / Flan Powder?
 - Yes
 - No

If yes (continue), if no end of questionnaire.

Notoriety

1. When going to buy flan powder, what is the first brand that comes to mind?

.....

2. Name another brand of flan powder that you know.

.....

3. From the following flan powder brands, which ones are you familiar with?

- Nouara
- Ideal
- Krima
- Rabha
- Delicia
- Flan Dhifa
- Alsa

4. Are you familiar with this product?

- Yes
- No

If yes (continue), if no go to Respondent Data Sheet

SECTION 1: COLORS

For each of the following items, indicate your degree of how much you agree:

[1] Strongly Disagree

[2] Disagree

[3] Neutral

[4] Agree

[5] Strongly Agree

1	Color noticeability and attractiveness contributes to the consumer's perception of the overall product.	.....
2	Color reflects and conveys the product's intended messages to the consumer.	.....
3	Color memorability impacts consumer behavior during purchase process.	.....
4	Color likeability impacts consumer behavior during purchase process.	.....
5	Color meaningfulness impacts consumer behavior during purchase process.	.....

SECTION 2: SYMBOLS

Symbols are an external factor that influences consumer behavior. Symbols could be: signs, forms, objects, images, words, characters, people, logos, etc.

For each of the following items, indicate your degree of how much you agree:

[1] Strongly Disagree

[2] Disagree

[3] Neutral

[4] Agree

[5] Strongly Agree

1	Symbols noticeability and attractiveness contributes to the consumer's perception of the overall product.	.....
2	Symbols reflect and convey the product's intended messages to the consumer.	.....
3	Symbol memorability impacts consumer behavior during purchase process.	.....
4	Symbol likeability impacts consumer behavior during purchase process.	.....
5	Symbol meaningfulness impacts consumer behavior during purchase process.	.....

SECTION 3: PACKAGING ELEMENTS

For each of the following items, indicate your degree of how much you agree:

[1] Strongly Disagree

[2] Disagree

[3] Neutral

[4] Agree

[5] Strongly Agree

1	Packaging noticeability and attractiveness contributes to the consumer's perception of the overall product.	.....
2	Packaging reflects and conveys the product's intended messages to the consumer.	.....
3	Packaging memorability impacts consumer behavior during purchase process.	.....
4	Packaging likeability impacts consumer behavior during	.....

	purchase process.	
5	Packaging meaningfulness impacts consumer behavior during purchase process.	.....

SECTION 4: CONSUMER PERCEPTION

For each of the following items, indicate your degree of how much you agree:

[1] Strongly Disagree

[2] Disagree

[3] Neutral

[4] Agree

[5] Strongly Agree

1	The perceived quality of the product is influenced by its visual packaging elements.	.....
2	The perceived uniqueness of the product is influenced by the visual packaging elements.	.....
3	Consumer's perception of the product's value is affected by the visual packaging elements.	.....

SECTION 5: CONSUMER PURCHASE INTENTION

For each of the following items, indicate your degree of how much you agree:

[1] Strongly Disagree

[2] Disagree

[3] Neutral

[4] Agree

[5] Strongly Agree

1	The likelihood of purchasing the product is increased when visual packaging elements effectively convey the intended messages.	.....
2	Intentions to purchase are strengthened when visual packaging elements align with the consumer's personal values.	.....
3	Purchase intentions are fostered by the memorability of visual packaging elements associated with the product.	.....

RESPONDANT DATA SHEET

1. Gender:

- Male
- Female

2. Age:

- Less than 18 years old
- 18-35 years old
- 36-49 years old
- 50-59 years old
- More than 60 years old

3. Socio-professional category

- Student
- Employed
- Self-employed
- Unemployed
- Retired

4. Do you have any recommendations or suggestions regarding the packaging elements of Nouara's flan powder boxes?

.....

APPENDIX 2: TABLES OF PCA ANALYSIS

Matrice de corrélation		Color noticeability and attractiveness contributes to the consumer's perception of the overall product.	Color reflects and conveys the product's intended messages to the consumer.	Color memorability impacts consumer behavior during purchase process.	Color likeability impacts consumer behavior during purchase process.	Color meaningfulness impacts consumer behavior during purchase process.
Corrélation	Color noticeability and attractiveness contributes to the consumer's perception of the overall product.	1,000	,401	,430	,223	,298
	Color reflects and conveys the product's intended messages to the consumer.	,401	1,000	,412	,344	,458
	Color memorability impacts consumer behavior during purchase process.	,430	,412	1,000	,387	,335
	Color likeability impacts consumer behavior during purchase process.	,223	,344	,387	1,000	,538
	Color meaningfulness impacts consumer behavior during purchase process.	,298	,458	,335	,538	1,000
Signification (unilatéral)	Color noticeability and attractiveness contributes to the consumer's perception of the overall product.		,000	,000	,016	,002
	Color reflects and conveys the product's intended messages to the consumer.	,000		,000	,000	,000
	Color memorability impacts consumer behavior during purchase process.	,000	,000		,000	,001
	Color likeability impacts consumer behavior during purchase process.	,016	,000	,000		,000
	Color meaningfulness impacts consumer behavior during purchase process.	,002	,000	,001	,000	

Table: Correlation Matrix - Measurement Scale of Colors

Source : SPSS

Indice KMO et test de Bartlett		
Indice de Kaiser-Meyer-Olkin pour la mesure de la qualité d'échantillonnage.		,749
Test de sphéricité de Bartlett	Khi-carré approx.	103,820
	ddl	10
	Signification	,000

Table: KMO Index and Bartlett's Test - Measurement Scale of Colors

Source : SPSS

Matrice des composantes^a	
	Composante 1
Color noticeability and attractiveness contributes to the consumer's perception of the overall product.	,642
Color reflects and conveys the product's intended messages to the consumer.	,741
Color memorability impacts consumer behavior during purchase process.	,719
Color likeability impacts consumer behavior during purchase process.	,703
Color meaningfulness impacts consumer behavior during purchase process.	,749

Méthode d'extraction : Analyse en composantes principales.

a. 1 composantes extraites.

Table: Component Matrix - Measurement Scale of Colors

Source: SPSS

Statistiques de fiabilité		
Alpha de Cronbach	Alpha de Cronbach basé sur des éléments standardisés	Nombre d'éléments
,756	,756	5

Table: Reliability Test - Measurement Scale of Colors

Source: SPSS

Matrice de corrélation

		Symbols noticeability and attractiveness contributes to the consumer's perception of the overall product.	Symbols reflect and convey the product's intended messages to the consumer.	Symbol memorability impacts consumer behavior during purchase process.	Symbol likeability impacts consumer behavior during purchase process.	Symbol meaningfulness impacts consumer behavior during purchase process.
Corrélation	Symbols noticeability and attractiveness contributes to the consumer's perception of the overall product.	1,000	,392	,319	,322	,374
	Symbols reflect and convey the product's intended messages to the consumer.	,392	1,000	,396	,461	,330
	Symbol memorability impacts consumer behavior during purchase process.	,319	,396	1,000	,451	,253
	Symbol likeability impacts consumer behavior during purchase process.	,322	,461	,451	1,000	,380
	Symbol meaningfulness impacts consumer behavior during purchase process.	,374	,330	,253	,380	1,000
Signification (unilatéral)	Symbols noticeability and attractiveness contributes to the consumer's perception of the overall product.		,000	,001	,001	,000
	Symbols reflect and convey the product's intended messages to the consumer.	,000		,000	,000	,001
	Symbol memorability impacts consumer behavior during purchase process.	,001	,000		,000	,007
	Symbol likeability impacts consumer behavior during purchase process.	,001	,000	,000		,000
	Symbol meaningfulness impacts consumer behavior during purchase process.	,000	,001	,007	,000	

Table: Correlation Matrix - Measurement Scale of Symbols**Source : SPSS****Indice KMO et test de Bartlett**

Indice de Kaiser-Meyer-Olkin pour la mesure de la qualité d'échantillonnage.		,784
Test de sphéricité de Bartlett	Khi-carré approx.	89,377
	ddl	10
	Signification	,000

Table: KMO Index and Bartlett's Test - Measurement Scale of Symbols**Source : SPSS**

Matrice des composantes^a

	Composante 1
Symbols noticeability and attractiveness contributes to the consumer's perception of the overall product.	,675
Symbols reflect and convey the product's intended messages to the consumer.	,744
Symbol memorability impacts consumer behavior during purchase process.	,687
Symbol likeability impacts consumer behavior during purchase process.	,757
Symbol meaningfulness impacts consumer behavior during purchase process.	,650

Méthode d'extraction : Analyse en composantes principales.

a. 1 composantes extraites.

Table: Component Matrix - Measurement Scale of Symbols

Source: SPSS

Statistiques de fiabilité

Alpha de Cronbach	Alpha de Cronbach basé sur des éléments standardisés	Nombre d'éléments
,743	,744	5

Table: Reliability Test - Measurement Scale of Symbols

Source: SPSS

Matrice de corrélation

		Packaging noticeability and attractiveness contributes to the consumer's perception of the overall product.	Packaging reflects and conveys the product's intended messages to the consumer.	Packaging memorability impacts consumer behavior during purchase process.	Packaging likeability impacts consumer behavior during purchase process.	Packaging meaningfulness impacts consumer behavior during purchase process.
Corrélation	Packaging noticeability and attractiveness contributes to the consumer's perception of the overall product.	1,000	,221	,314	,320	,271
	Packaging reflects and conveys the product's intended messages to the consumer.	,221	1,000	,206	,303	,430
	Packaging memorability impacts consumer behavior during purchase process.	,314	,206	1,000	,489	,240
	Packaging likeability impacts consumer behavior during purchase process.	,320	,303	,489	1,000	,514
	Packaging meaningfulness impacts consumer behavior during purchase process.	,271	,430	,240	,514	1,000
Signification (unilatéral)	Packaging noticeability and attractiveness contributes to the consumer's perception of the overall product.		,016	,001	,001	,004
	Packaging reflects and conveys the product's intended messages to the consumer.	,016		,024	,002	,000
	Packaging memorability impacts consumer behavior during purchase process.	,001	,024		,000	,010
	Packaging likeability impacts consumer behavior during purchase process.	,001	,002	,000		,000
	Packaging meaningfulness impacts consumer behavior during purchase process.	,004	,000	,010	,000	

Table: Correlation Matrix - Measurement Scale of Packaging

Source : SPSS

Indice KMO et test de Bartlett

Indice de Kaiser-Meyer-Olkin pour la mesure de la qualité d'échantillonnage.		,705
Test de sphéricité de Bartlett	Khi-carré approx.	87,165
	ddl	10
	Signification	,000

Table: KMO Index and Bartlett's Test - Measurement Scale of Packaging

Source : SPSS

Matrice des composantes^a

	Composante 1
Packaging noticeability and attractiveness contributes to the consumer's perception of the overall product.	,593
Packaging reflects and conveys the product's intended messages to the consumer.	,614
Packaging memorability impacts consumer behavior during purchase process.	,655
Packaging likeability impacts consumer behavior during purchase process.	,800
Packaging meaningfulness impacts consumer behavior during purchase process.	,739

Méthode d'extraction : Analyse en composantes principales.

a. 1 composantes extraites.

Table: Component Matrix - Measurement Scale of Packaging

Source: SPSS

Statistiques de fiabilité

Alpha de Cronbach	Alpha de Cronbach basé sur des éléments standardisés	Nombre d'éléments
,715	,712	5

Table: Reliability Test - Measurement Scale of Packaging

Source: SPSS

Matrice de corrélation

		The perceived quality of the product is influenced by its visual packaging elements.	The perceived uniqueness of the product is influenced by the visual packaging elements.	Consumer's perception of the product's value is affected by the visual packaging elements.
Corrélation	The perceived quality of the product is influenced by its visual packaging elements.	1,000	,302	,366
	The perceived uniqueness of the product is influenced by the visual packaging elements.	,302	1,000	,455
	Consumer's perception of the product's value is affected by the visual packaging elements.	,366	,455	1,000
Signification (unilatéral)	The perceived quality of the product is influenced by its visual packaging elements.		,002	,000
	The perceived uniqueness of the product is influenced by the visual packaging elements.	,002		,000
	Consumer's perception of the product's value is affected by the visual packaging elements.	,000	,000	

Table: Correlation Matrix - Measurement Scale of Consumer Perception

Source : SPSS

Indice KMO et test de Bartlett

Indice de Kaiser-Meyer-Olkin pour la mesure de la qualité d'échantillonnage.		,634
Test de sphéricité de Bartlett	Khi-carré approx.	36,345
	ddl	3
	Signification	,000

Table: KMO Index and Bartlett's Test - Measurement Scale of Consumer Perception

Source : SPSS

Matrice des composantes^a

	Composante 1
The perceived quality of the product is influenced by its visual packaging elements.	,705
The perceived uniqueness of the product is influenced by the visual packaging elements.	,773
Consumer's perception of the product's value is affected by the visual packaging elements.	,811

Méthode d'extraction : Analyse en composantes principales.

a. 1 composantes extraites.

Table: Component Matrix - Measurement Scale of Consumer Perception

Source: SPSS

Statistiques de fiabilité

Alpha de Cronbach	Alpha de Cronbach basé sur des éléments standardisés	Nombre d'éléments
,632	,642	3

Table: Reliability Test - Measurement Scale of Consumer Perception

Source: SPSS

Matrice de corrélation		The likelihood of purchasing the product is increased when visual packaging elements effectively convey the intended messages.	Intentions to purchase are strengthened when visual packaging elements align with the consumer's personal values.	Purchase intentions are fostered by the memorability of visual packaging elements associated with the product.
Corrélation	The likelihood of purchasing the product is increased when visual packaging elements effectively convey the intended messages.	1,000	,264	,308
	Intentions to purchase are strengthened when visual packaging elements align with the consumer's personal values.	,264	1,000	,227
	Purchase intentions are fostered by the memorability of visual packaging elements associated with the product.	,308	,227	1,000
Signification (unilatéral)	The likelihood of purchasing the product is increased when visual packaging elements effectively convey the intended messages.		,005	,001
	Intentions to purchase are strengthened when visual packaging elements align with the consumer's personal values.	,005		,014
	Purchase intentions are fostered by the memorability of visual packaging elements associated with the product.	,001	,014	

Table: Correlation Matrix - Measurement Scale of Consumer Purchase Intention

Source : SPSS

Indice KMO et test de Bartlett

Indice de Kaiser-Meyer-Olkin pour la mesure de la qualité d'échantillonnage.		,609
Test de sphéricité de Bartlett	Khi-carré approx.	17,788
	ddl	3
	Signification	,000

Table: KMO Index and Bartlett's Test - Measurement Scale of Consumer Purchase Intention

Source : SPSS

Matrice des composantes^a

	Composante 1
The likelihood of purchasing the product is increased when visual packaging elements effectively convey the intended messages.	,749
Intentions to purchase are strengthened when visual packaging elements align with the consumer's personal values.	,676
Purchase intentions are fostered by the memorability of visual packaging elements associated with the product.	,719

Méthode d'extraction : Analyse en composantes principales.

a. 1 composantes extraites.

Table: Component Matrix - Measurement Scale of Consumer Purchase Intention

Source: SPSS

Statistiques de fiabilité

Alpha de Cronbach	Alpha de Cronbach basé sur des éléments standardisés	Nombre d'éléments
,521	,521	3

Table: Reliability Test - Measurement Scale of Consumer Purchase Intention

Source: SPSS

APPENDIX 3: TABLES OF MULTIPLE REGRESSION ANALYSIS

Corrélations

		PERCEPTIO N	COLOR	SYMBOL	PACKAGING
Corrélation de Pearson	PERCEPTION	1,000	,202	,219	,338
	COLOR	,202	1,000	,454	,550
	SYMBOL	,219	,454	1,000	,487
	PACKAGING	,338	,550	,487	1,000
Sig. (unilatéral)	PERCEPTION	.	,026	,017	,000
	COLOR	,026	.	,000	,000
	SYMBOL	,017	,000	.	,000
	PACKAGING	,000	,000	,000	.
N	PERCEPTION	93	93	93	93
	COLOR	93	93	93	93
	SYMBOL	93	93	93	93
	PACKAGING	93	93	93	93

Variables introduites/éliminées^a

Modèle	Variables introduites	Variables éliminées	Méthode
1	PACKAGING	.	Ascendant (Critère : Probabilité de F pour introduire <= , 050)

a. Variable dépendante : PERCEPTION

Table: Correlation - Multiple Linear Regression 1 (H1)

Source : SPSS

Récapitulatif des modèles

Modèle	R	R-deux	R-deux ajusté	Erreur standard de l'estimation	Variation de R-deux	Modifier les statistiques			Sig. Variation de F
						Variation de F	ddl1	ddl2	
1	,338 ^a	,114	,105	,94625844	,114	11,747	1	91	,001

a. Prédicteurs : (Constante), PACKAGING

Table: Summary of Models - Multiple Linear Regression 1 (H1)

Source: SPSS

ANOVA^a

Modèle		Somme des carrés	ddl	Carré moyen	F	Sig.
1	Régression	10,518	1	10,518	11,747	,001 ^b
	de Student	81,482	91	,895		
	Total	92,000	92			

a. Variable dépendante : PERCEPTION

b. Prédicteurs : (Constante), PACKAGING

Table: ANOVA - Multiple Linear Regression 1 (H1)

Source: SPSS

Corrélations

		PURCHASE INTENTION	COLOR	SYMBOL	PACKAGING
Corrélation de Pearson	PURCHASE INTENTION	1,000	,544	,454	,508
	COLOR	,544	1,000	,454	,550
	SYMBOL	,454	,454	1,000	,487
	PACKAGING	,508	,550	,487	1,000
Sig. (unilatéral)	PURCHASE INTENTION	.	,000	,000	,000
	COLOR	,000	.	,000	,000
	SYMBOL	,000	,000	.	,000
	PACKAGING	,000	,000	,000	.
N	PURCHASE INTENTION	93	93	93	93
	COLOR	93	93	93	93
	SYMBOL	93	93	93	93
	PACKAGING	93	93	93	93

Variables introduites/éliminées^a

Modèle	Variables introduites	Variables éliminées	Méthode
1	COLOR	.	Ascendant (Critère : Probabilité de F pour introduire <= , 050)
2	PACKAGING	.	Ascendant (Critère : Probabilité de F pour introduire <= , 050)

a. Variable dépendante : PURCHASE INTENTION

Table: Correlation - Multiple Linear Regression 2 (H2)

Source : SPSS

Récapitulatif des modèles

Modèle	R	R-deux	R-deux ajusté	Erreur standard de l'estimation	Variation de R-deux	Modifier les statistiques			Sig. Variation de F
						Variation de F	ddl1	ddl2	
1	,544 ^a	,296	,288	,84376707	,296	38,224	1	91	,000
2	,599 ^b	,359	,344	,80970621	,063	8,817	1	90	,004

a. Prédicteurs : (Constante), COLOR

b. Prédicteurs : (Constante), COLOR, PACKAGING

Table: Summary of Models - Multiple Linear Regression 2 (H2)

Source: SPSS

ANOVA^a

Modèle		Somme des carrés	ddl	Carré moyen	F	Sig.
1	Régression	27,213	1	27,213	38,224	,000 ^b
	de Student	64,787	91	,712		
	Total	92,000	92			
2	Régression	32,994	2	16,497	25,162	,000 ^c
	de Student	59,006	90	,656		
	Total	92,000	92			

a. Variable dépendante : PURCHASE INTENTION

b. Prédicteurs : (Constante), COLOR

c. Prédicteurs : (Constante), COLOR, PACKAGING

Table: ANOVA - Multiple Linear Regression 2 (H2)

Source: SPSS

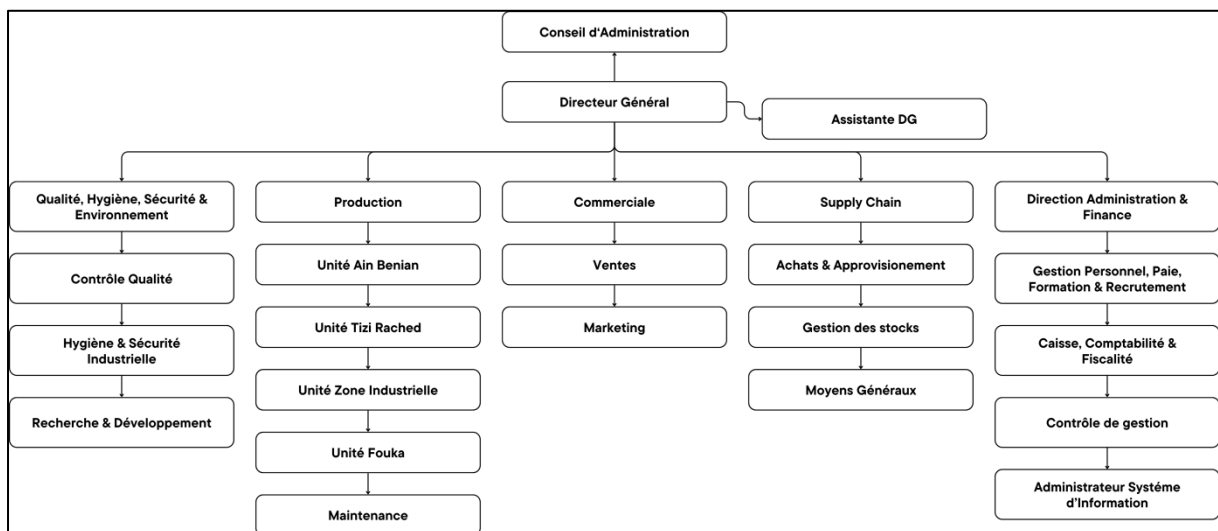
**APPENDIX 4: SPA SIPADES “NOUARA”
INFORMATION**

Figure : Logo NOUARA



Source: Provided by the host organism

Figure: “NOUARA” Organizational Structure



Source: Provided by host organism