

The impact of Colour Psychology on Packaging in the Food Industry: The Case of Chocolate and Yogurt

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Abstract

Purpose: Product packaging has an impact on consumers' perception of the product and their purchasing decisions. In product packaging, colour is an important design factor. Therefore, this research paper will explore the impact of the colour of packaging on consumers' willingness to buy the product, as well as the consumers' perception of the products in the food industry.

Methodology: This study firstly uses literature review to collect and synthesize previous research in terms of colour psychology, packaging colour in marketing, and colour in food packaging. Then the study uses social research methodology by designing a survey to portray the consumer's persona and purchasing preferences. Based on the results of the survey, a focus group was organized to further explore the findings.

Findings: In the research results, packaging is a minor factor influencing consumer's buying decisions. However, consumers' perceptions of the product in terms of brand, price and healthiness are related to the colour of food packaging. One example is black colour, which is proven to be associated to luxury and mysteys colour both in chocolate and yogurt categories, and is highly related to consumers' perceptions of price and quality. Another colour with strong associations is green, which consumers link to less-processed and healthy food.

Original/value: This study further identified colours of packaging that have different effects on consumer's attitudes towards food products. Thus, it will help brand owners to track consumer trends and interests, as well as influence their packaging design accordingly in order to take full advantage of the psychological impact of colours on consumers to enhance brand building and consumer purchase of the product.

Keywords: Colours, psychology, consumer perceptions, food industry

Paper type: Research paper

Introduction

Consumers' purchasing decisions are influenced not only by the intrinsic properties of a product, but also by the extrinsic information provided when purchasing (MDPI, 2021). 70% of consumers make decisions at the point of purchase, and 90% of those purchase decisions are based on direct judgment of the packaging (Clement, 2007; Winer, Ferraro, 2009). Good commodity packaging can guarantee consumers a better understanding of brand positioning and reflect the brand identity, brand values, product features, and enhance its advantage over other competitors (Elkhattat, Medhat, 2022). When the consumers' eyes are on the shelves to browse the goods, the colour of the product packaging will more likely be seen by the consumer than other details on the packaging. In retail, colour conveys meaning related to brand, product, environment, and origin (Sekki, Kylkilahti, 2023). Therefore, a good choice of packaging colour further affects the initial impression of the product and the purchase decision made by consumers.

In the food industry, many products quickly distinguish themselves from the shelves through their unique packaging colours, such as the iconic purple colour of chocolate brand Milka and the dark blue of Barilla on both pasta and canned tomato shelves. Packaging colours for food products are often aligned with taste, health, flavor, and the brand's message. For example, Lindt uses a bright red color to communicate the joy, love and sweetness of its products, while most orange juice packages have an orange color to match.

Most of the current research on food product packaging has focused on studying overall package design or other elements of the package for consumers. Fewer studies have been conducted on product packaging colour alone, and the main research related to it has focused on the influence of packaging colour on taste. No scholars have studied the possibility that package colour may cause consumers to judge other aspects of the product. In this paper, we will analyze the colour of food product packaging and

consumers' perceptions of product quality, price and healthiness. Because there are too many products in the food industry, it is impossible to analyze all of them. Therefore, chocolate and yogurt, two commodities with a high frequency of daily purchases and whose purchasing decisions are highly influenced by product marketing, were selected for analysis in this paper. Meanwhile, the impact of packaging design on food products varies with the characteristics of the target consumers, including gender, age, income, cultural background, education, and religion (Bou-Mitri et al., 2021). Therefore, this study aims to present the following research objectives:

- Determine whether differences in packaging colours have an impact on consumers' purchase decisions;
- Determine whether differences in packaging colour have an impact on consumers' perceptions of the product;
- Determine whether consumer's preferences for different colours in packaging are the same across different food products.

The study aims to help food product marketers make decisions about product packaging and market positioning. In addition, it will help companies better understand the nuances of the market and the opportunities it presents. The next section will summarize the literature review, by drawing on literature on the use of colour in marketing, the importance of colour in packaging, as well as the relationship between colour and psychology. After that, the paper describes the research methodology used in the study, as well as the results of the research analysis and discussions of these findings are proposed. Finally, the practical implications, limitations, and possibilities for further research in the future are presented.

Literature review

The Psychology of Colours

Over the past few years, researchers have become increasingly interested in colours and their impact on psychological functioning (Kumar, 2017). It has been proved that colours directly affect people's subconscious, causing different emotions, behaviours, and moods, and can produce a sense of attraction or rejection (Anika, Silvija, 2017).

The meaning of colours has changed for centuries, with some ancient populations using them to describe surrounding elements while others looking at them as a basis for spirituality, and for classification, differentiation, and confrontation purposes (Zjakić, Milković, 2010).

But if it is true that some colours' level of acceptability and desirability depends on different cultures, studies show that, with their hidden meaning, colours communicate a message which is universal and above any racial, religious, or sexual limitation (Zjakić, Milković, 2010; Hunjet, Parac-Osterman, Benšić, 2006).

Colour's three basic properties are Hue, Lightness and Chroma (Fairchild, 2013), among which hue is considered the more salient. When one of these properties changes, it has an effect on cognition and behaviour functioning. According to Labrecque and Milne (2012), colours are in fact aesthetic stimuli able to stimulate and manipulate people's perceptions through embodied and referential meaning. Embodied meaning is intrinsic to the stimulus and represents people's reactions to a specific colour, while referential meaning refers to a network of associations activated when exposed to the stimulus (Zeltner, 1975). Crowley (2013) also provided research support for a two-dimensions framework in terms of colour, claiming that one dimension has the purpose of stimulating arousal and physical responses like increased brain activity and heart rate, while the other one induces attitude change.

Within the wide universe of colours psychology, most studies focus on the creation and activation of colour associations, which can be explained through semantic memory models such as associative learning (Bower, 1981). This concerns the encoding of relationships between two events, two stimuli or a stimulus and a response (Weidemann, McNally, 2012), like a colour and an emotion. According to Schlack and Albright (2007), neuroscience works prove that associative learning connected to visual information, like colours, develops during the early stages of visual processing to speed the decision-making process and survival, and the associations between colour and emotions tend to be consistent across different cultures (D'Andrade, Egan, 1974), e.g. yellow and cheerful (Levy, 1984).

To truly understand associative learning, the three elementary principles of colour (Figure 1) must be defined, since the union of them determines people's colours perception and thus associations. They are:

1. Hue
2. Saturation
3. Value

Hue is a colour's wavelength and determines its label, e.g. orange or green. Saturation refers to the intensity of the colour, and its level of pigmentation. Depending on its saturation, colour can appear washed-out (low saturation) or vivid (high saturation). Value refers to the brightness of a colour, on a scale from black (low brightness) to white (high brightness) (Kumar, 2017).

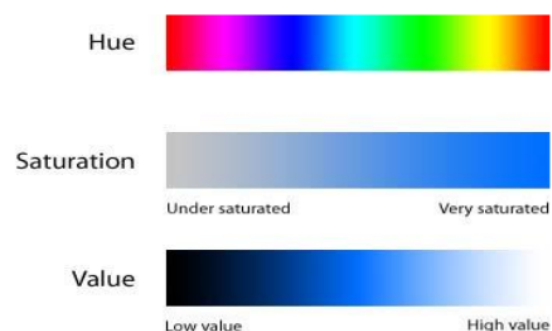


Figure 1. *Three principles of colour.* Kumar (2017)

The Meaning of Colours

As stated before, every hue leads to different associations, and these are also influenced by a colour's grade of saturation and value. Although the association processes are individual, studies prove colour associations' consistency across different cultures and groups, and thus it is possible to create a general theoretical framework for the most common hues, such as black, red, yellow, orange, blue and green.

Black is associated with power (Naz and Epps, 2004), sophistication, luxury, stateliness, and dignity (Wexner, 1954).

Red is associated with love and dominance (Naz and Epps, 2004), activity, strength and stimulation (Fraser and Banks, 2004).

Yellow and orange are linked to cheerful feelings, optimism and friendliness (Fraser and Banks, 2004; Clarke and Costall, 2007).

Blue and green remind of a sensation of peace, relaxation, and calmness (Clarke and Costall, 2007), but blue is also linked to efficiency, intelligence, and trust (Fraser and Banks, 2004). Instead, green is associated with security because of its relationship with nature (Kaya and Epps, 2004).

Then, it must be noticed that some colours have stronger associations than others, for example brown, grey, and purple, for which is difficult to pinpoint shared meaning and associations.

The Relationship between Colours, Marketing and Packaging

Research in colour psychology proves that hues act as a factor in persuading human behaviour. For this reason, the use of colours has been definitively integrated into marketing theory, as marketers consider it as a tool to influence consumers' perceptions towards goods and services, and an instrument to convey emotions, occasions, and moods.

There are no clear guidelines about colour usage, therefore marketers need to adopt a practical approach and take into consideration three different elements: the audience, the message they seek to convey, and the context (Jain, Thilaka, Nikita, 2021). Then, knowledge of consumer behaviour is needed to understand what can influence consumers' buying decisions. According to a recent study by Nielsen (2018), 60% of consumers' decision-making process regarding fast-moving consumer goods (FMCG) is made on the shelf; therefore, colour is the most important element in the design of multisensory product packaging, because it helps to capture the attention of customers inside the store and plays an essential role in a consumer's product experience (Spence, Velasco, 2018). Product packaging itself is a key strategy in any kind of organization to increase sales, and that is because, according to Rambabu and Porika (2020), consumers acquire and condemn products by their packaging before buying.

But strategic use of colours in packaging is not only limited to improving sales and capturing attention, since its power to influence customers' minds is useful to create and support brand identity, brand awareness (Grimes, Doodles, 2010), and brand value (Jauffret, 2018). Ultimately, other researchers have found that there is a connection between the use of colours in packaging and customers' perceptions of brand personality (Karthikeyan, Joy, 2018), which means that ultimately colours have an impact on brand personality dimensions theorized by Aaker (1997): sincerity and competence (blue and green), excitement (red), sophistication (black, purple) and ruggedness (brown). However, academic studies state that it is far more important to choose the right colours to support the personality you want to portray, instead of trying to align it with stereotypical colour associations, which are not always reliable (Karthikeyan, Joy, 2018).

Concretely, colours achieve this since they impact the way consumers perceive the tangible and intangible attributes of products, and throughout this they contribute to building the main brand dimensions and how it's perceived in society.

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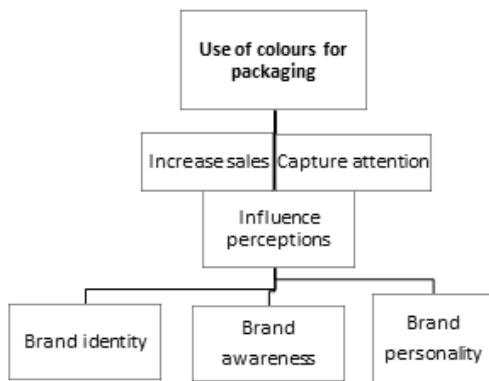


Figure 2. *The impact of colours use in packaging*

Colours Use for Food Packaging

Originally conceived to preserve food from the external environment, food packaging has now a double aim: to protect the food, and to communicate. The communication does not concern the product's type and properties only, but also its company and corporate strategy. To do that, the package needs to attract the eye of the consumer and convey specific multisensorial messages that not only satisfy his primary needs (hunger and thirst) but also evoke emotions, beneficial and pleasurable feelings during food consumption (Mastropietro von Rautenkrantz, 2016).

Together with its design, colour is the best tool marketers can use for food packaging since it is a silent messenger speaking a ubiquitous language and acting as a "silent salesman" at the shelf, able to transmit immediate messages and create a strong brand identity (Luzzatto, Pompas, 2001). Thus,

colours are used not only to differentiate the product (Mastropietro, Dioguardi, 2009), but also to differentiate among variations of the same product, making them more recognizable (Mastropietro, 2016). It must be noticed, though, that the colour alone cannot meet all the needs, and the chromatic effect on the final package depends on many factors, such as degree of saturation, brilliance, the material of the package, its nature, and texture (Mancini, 2007).

According to Mastropietro's research (2016), assuming a situation where any kind of colour can be used, marketers can follow two rules for choosing packaging hues:

- (1) Rule of coherence
- (2) Rule of colour induced messaging

The rule of coherence is based on common sense, and strengthens the food or beverage's colour to immediately inform consumers of the food content. It is now considered to be a good starting point, but not enough (Mastropietro, 2011).

The rule of colour-induced messaging is followed when marketers also want to stimulate perceptions and include emotions. According to this rule, every hue can convey a specific set of messages and recall specific adjectives, which can have an impact on the food product or product category.

Prior research proves that using certain colours on food packaging leads to biased judgments regarding food's characteristics. For example, food in red-coloured packaging is perceived as sweeter and less healthful (Huang and Lu, 2015; Levy et al., 2012), while food in green or blue packaging is perceived as healthier and less sweet (Huang and Lu, 2016; Temple et al., 2011). Then, consumers associate dark-coloured packaging with calorically heavy and tastier food (Mai et al., 2016).

Moreover, research done by Mead and Richerson (2018) demonstrates that

consumers consider food less healthful when its packaging is vivid and highly colour-saturated.

One example of successful colours use in food packaging is Barilla. The Italian company went through different restyling processes during the years to “appetize the box”, which was perceived as industrial, masculine, and dull (Mastropietro, 2016), but it always kept the colour blue that was chosen by its founder in 1877. Blue, together with the red and white of its logo, became part of Barilla’s brand and now Barilla owns the colour code. This colour palette represents Barilla’s passion, love, and professionalism, and embodies its values of making customers feel good and happy.

Recently, the packaging’s blue hue switched from its traditional shade to a lighter shade that recalled the Italian sky during a sunny day; in this way, Barilla created new associations and reinforced the link between the brand and Italian culture, but remained faithful to its colour heritage.

Methodology

For this paper, both theoretical and empirical research has been conducted. Existing literature has been reviewed, and the main theories regarding colour psychology and its relevance to packaging in the food industry have been explained. A framework was also used to explain the chain of stimuli a proper colour use in packaging can produce, ultimately impacting the brand itself (Figure 2). While the literature review also describes colours effect on brand’s dimensions, this paper’s research topic is focused on the step right before, which is the influence of colours on consumers’ perceptions. Only passing through this step, indeed, is possible to fully understand the subsequent implications on the brand. The relationship between colours and brands has been briefly discussed during the focus group, but it would need further research.

For empirical data collection, two different empirical methods have been used. Firstly, a

survey was conducted by using a questionnaire to collect information about the colour psychology in yogurt and chocolate products. Then, the data results from the questionnaire were further explored through focus group interviews.

Survey

The 21-items survey was divided into four sections: basic information, chocolate products, yogurt products, and common questions. The research methods used in this study are described below. Specifically, it will cover attribute selection, visual aids, questionnaire design, data collection and analysis.

Assessing the factors that consumers consider first when purchasing chocolate and yogurt is critical to this survey and subsequent analysis. Through literature research and market research, the survey selected five key factors (price, packaging, quality, flavour, and healthiness) that mainly influence consumers to purchase chocolate and yogurt products. Therefore, the survey investigates consumers' purchasing preferences among the five factors.

Since colours can be divided into cold and warm colours, the selection of packaging colours considered both cold and warm hues. Therefore, four common packaging colours were chosen as variables: red (warm), yellow (warm), green (cold) and blue (cold). In addition, a special colour was added, black, as a variable to investigate its impact as a food packaging colour. The selected variables were used to analyze the influence of packaging colour on key factors in the consumer purchase process. Among all the five key factors, the research focused on the relationship between packaging colour and price, quality, and healthiness. This survey excludes flavour, because the colour of the packaging is generally highly related to it.

This study utilized visual aids for the experiment. Generic versions of chocolate bars and yogurt jars with each colour set were created. The shape of the packaging was standardized for all colour options in order to

reduce the influence of other factors. No brand names were shown, because their influence on the consumer purchasing decision (Assali, 2016) could have impacted people's judgment and perceptions. The pictures presented in the survey can be found in the Appendix.

In the basic information part, the survey examines the consumer's persona by collecting information including gender, age, education, income, frequency of purchasing, and for whom they usually buy.

Sex	Male	36.7%	22
	Female	63.3%	38
Age	18	6.7%	4
	19	10%	6
	20	8.3%	5
	21	8.3%	5
	22	13.3%	8
	23	28.3%	17
	24	13.3%	8
Education	High school diploma	23.3%	14
	Bachelor's degree	53.3%	32
	Master's degree	23.3%	14
Monthly income	0 - 499€	61.7%	37
	500 - 999€	16.7%	10
	1000 - 1499€	11.7%	7
	1500 - 1999€	5%	3
	2000 - 2499€	1.7%	1
Frequency of buying chocolate	more than 2500€	3.3%	2
	Every day	1.7%	1
	Once a week	10%	6
	Once in 2 weeks	25%	15
	Once in a month	25%	15
Frequency of buying yogurt	Less than once in a month	38.3%	23
	Every day	10%	6
	Once a week	46.7%	28
	Once in 2 weeks	20%	12
	Once in a month	10%	6
For whom they usually buy	Less than once in a month	13.3%	8
	Yourself	75%	45
	Family members	6.7%	4
	Friends	15%	9
	Others	3.3%	2

Figure 2. Survey personal data collection

Considering that consumers may have different focuses in different purchase scenarios, the importance of key factors was discussed separately to imitate the real decision-making process in consumers' daily life. To ensure the validity of the data, the survey asked respondents about their allergies to dairy and chocolate-related foods. Invalid responses were excluded from that portion of the survey data. The questionnaire was also pre-tested to determine whether respondents clearly understood the questions, and was

then refined accordingly to that. After excluding invalid responses, 60 valid responses were retained for this survey. The study period was from October 9, 2023 to October 13, 2023.

Focus group

As the second step of our data collection process we decided to conduct a focus group. Focus groups have proven to be a valuable tool in qualitative research, facilitating the exploration of various perspectives on a chosen topic. By exploring and supporting the participants' collective insights and feelings, focus groups can enhance the researchers' understanding beyond individual imagination, making them particularly useful for uncovering dimensions not initially apparent (Gundumogula, 2020). As suggested by Kitzinger (1994), focus groups can also be great sources for bridging the gaps from previous research.

Multiple advantages of the usage of focus groups have been discovered. To mention some of them – first, the focus group method offers a qualitative approach to understand the participants' perceptions and beliefs in a broader context. Second, the focus groups are easily adaptable, which makes it easier for the researcher to explore various topics and further develop them into depth. Third, the focus group can help with identifying local needs and problems by leveraging the local knowledge of the participants (Swartling, 2007). Fourth, since the focus groups allow the participants to further develop their conversation and react to each other, it also gives the researched insights on the communication style of the participants and group norms. In this setup, valuable insights, that could not be obtained via a one-on-one interview, might be discovered. Fifth, the participants are encouraged to react to each other and even generate their own questions, which fosters open conversations about topics (Kitzinger, 1994 & 1995).

In terms of participants selection, a non-probability convenient sampling has been used. Non-probability samples involve an uncertain likelihood of selecting a subject,

leading to potential selection bias in the study (Acharya *et al.*,2013). Our selection of participants was limited to people living in close proximity, so it would be possible to meet in person. We selected six participants out of which three were males and three were females. Half of our participants were twenty-three years old and half were twenty-four years old. All six participants were students.

Participant number	Sex	Age	Occupation
1	F	23	Student
2	F	23	Student
3	M	23	Student
4	F	24	Student
5	M	24	Student
6	M	24	Student

Figure 3. *Focus group personal data collection*

The moderator selected a list of questions/topics to be discussed, based on the results of the survey (See in appendix). The participants and the moderator met at a designated place and time. At the beginning, the moderator explained the purpose of the focus group and all the participants shortly introduced themselves. All the participants gave consent to collect their demographic data (sex, age, occupation) and to record the audio from the meeting. Then the moderator proceeded with the questions and the participants are freely engaged in the discussion, guided by the moderator. During the discussion, pictures showing the same products (chocolate and yogurt), but displayed in different colours – red, blue, green, yellow, black – were shown to the participants, who analyzed what associations do the colours of packaging come to their minds.

Empirical results and analysis

In this part of the paper, the results obtained from both the used research approaches will be discussed. The analysis of the collected primary data aims to investigate the impact colours can have on consumers' mind and buying behaviour. The main objective was to

understand if colour psychology theory, which was previously presented in the literature review, could apply to the food industry through the marketing tool of packaging. In particular, the research question concerned the potential power of colours in packaging to impact three of the identified five key factors that influence consumers' purchasing decisions of chocolate and yogurt products.

The results will be presented separately for the conducted survey and focus group, since they report different types of data, such as quantitative and qualitative.

Results of the survey

Before introducing the five key factors, few general questions about their purchasing attitude and curiosity about food products have been asked to the respondents. In particular, the majority of them (68,3%) declare they tend to always buy the same brand of food products, showing a certain degree of brand loyalty. At the same time, 81,7% (49) of respondents say they appreciate trying new food products.

Respondents have also been asked about the relevance they ascribe to packaging when it comes to buying food, and while 55% (33) of them state they consider packaging to be important, 45% (27) of them deny it. The importance of packaging has also been investigated in relation to the five key factors – such as price, quality, flavour, and healthiness - and different purchasing scenarios, narrowing the study to chocolate and yogurt only. On a scale from 1 (least important) to 5 (most important), when buying chocolate for themselves, packaging proved to be not the most important factor to consider, with the attention of the consumers being focused way more on flavour, price, and quality. Similar results are found about yogurt, whose packaging is found to be rather irrelevant to the buying decision. When it comes to buying chocolate for others, for example as a gift, results change, and packaging becomes the second most important factor to consider when choosing a product, after quality.

The collected data partly minimize the relevance of packaging as a driving factor for chocolate and yogurt purchasing decisions. In fact, these products are part of the Fast-Moving Consumer Goods (FMCG) category, which includes goods with a short useful lifetime and that are designed for single or limited uses (Bocken et al., 2022). FMCG's purchasing frequency is high, with consumers selecting them at the shelf after considering more practical attributes like the taste or a convenient price. At first, this could represent a threat to this research's aim, before packaging is the most powerful to implement colours psychology in marketing. Previous research, though, demonstrates that marketing, commerce and communication not only influence consumers' rational perceptions and decisions, but also subconscious and unconscious ones (Bayle-Tourtoulou, Badoc, 2020), and so do colours (Anika, Silvija, 2017). According to this, it's possible to hypothesize that different packaging designs and hues influence consumers not only when they are conscious of that – like when they are searching for a good-quality but also a good-looking chocolate bar for a present – but even when they are unaware and think they are not paying attention to the pack.

At this point, the five selected colours (red, blue, green, yellow and black) were presented to the respondents, together with three of the five identified key factors: price, quality and healthiness. A picture of generic differently-coloured chocolate bars and yogurt jars was displayed, and people were asked to rank them from 1 (the least) to 5 (the most) expensive, high-quality, and healthy, based on how they perceived them by only looking at their pack. The emerging results have been summarized in the following table.

	Ranking (decreasing)	Price	Quality	Healthiness
Chocolate	5	Black	Black	Green
	4	Blue	Red, Blue	Blue
	3	Red	Red	Blue
	2	Green	Green	Red
	1	Yellow	Yellow	Yellow
Yogurt	5	Black	Blue	Green
	4	Red	Black	Blue
	3	Red	Red, Blue	Black
	2	Green	Yellow	Red
	1	Yellow	Yellow	Yellow

Figure 4. Relationship between colours and perceptions of price, quality and healthiness for chocolate and yogurt

The majority of respondents associate black-coloured packaging with more expensive products, and this is valid for both chocolate and yogurt. This is coherent with Wexner's studies (1954), which discussed the relationship between black and the idea of luxury and sophistication that seems to endure also in the FMCG category. On the other hand, yellow-coloured packaging is associated with cheaper kinds of chocolate and yogurt, and the colour's association with feelings of joy and happiness (Fraser and Banks, 2004) leads to a reaction in consumers' minds which is opposite to that of black. While black is perceived as sophisticated, yellow is a more down-to-earth colour, suitable for all, and whose price is expected to be more attainable. Green-coloured packaging is perceived in a very similar way to yellow, while results state consumers think the price will be higher when they see a blue-coloured chocolate packaging, or a red-coloured yogurt packaging. Blue, then, doesn't seem to have any impact on yogurt consumers' perceptions.

Respondents also connect black-coloured packaging to higher-quality chocolate, and this could depend on different reasons. On one hand, previous research (Mai et al., 2016) proved dark-coloured packaging is commonly associated with tastier food, an attribute that could be related to its quality (this is also valid for bright colours like red). On the other hand, consumers could be subdued by a cognitive bias: since they associate black with

higher-priced chocolate, they may assume the quality to be higher too. Yogurt, instead, is considered to have better quality when its packaging is blue. According to Wang et al. (2022), indeed, the use of blue for yogurt packaging can enhance the fresh-keeping sense of the product, boosting the quality perceptions in the minds of consumers. Yellow, instead, is associated with a lower quality level, for reasons similar to those explained before.

At last, the relationship between colours and healthiness perception was investigated. For both chocolate and yogurt, the majority of the respondents declares to associate green-coloured packaging with healthier products, but blue-coloured packaging is perceived as healthier too. Reviewed literature can widely explain these results, since green is the colour of nature and linked to natural, biological and little-processed food; at the same time, the sensation of calmness and relaxation green and blue hues transmit to consumers (Clarke and Costall, 2007) reminds of a general feeling of wellbeing that healthy food can produce. On the other hand, vivid-coloured packaging like red and yellow seem to stimulate completely different perceptions, as they are associated to less healthful, more caloric, and sweeter products, confirming Levy et al. (2012) and Mead and Richerson (2018)'s theories.

Results of the focus group

After conducting the focus group and later analysing the collected data, five major topics of discussion were identified. These were named "General Colour Associations", "Flavour Associations", "Brand Associations", "Personal vs Gift Shopping", and "Black – luxury or mystery?". These will be now explained one by one into more depth.

1. General Colour Associations

The first topic that we identified during our focus group are the general associations with different colours. We asked our respondents, what associations they evoke with the colours of our study – black, blue, red, green, and yellow. Black is an exceptional case, with many connotations, including high quality and

luxury. However, the case of black will be discussed in depth in the fifth topic of our results. The red colour evokes a feeling of childishness in our participants. Two of our participants agreed that it can motivate them to buy the product and thus to feel a sense of nostalgia for their childhood. However, the rest of the participants tend to agree that they would rather not buy a red product (chocolate/yogurt), as they appear to them as products for children, which for example may also contain more sweeteners and colourings to attract children. The associations with blue and yellow were not significant, they did not remind our participants of anything specific that they could recall at the time. The association with the colour green was unanimously agreed upon by our participants. It evokes in them a feeling of nature, health, and organic quality.

2. Flavour Associations

The next topic that came up as we discussed the general associations of colours in the packaging of chocolate and yogurt products was that of flavours. One of our participants (male, 23) was the first to mention that when it comes to chocolate, the yellow colour reminds him of white chocolate (as a type of chocolate). Following this statement, a debate about flavours and colours developed. Participants agreed that with chocolate, colours generally do not remind them of flavours, except for the colour yellow in association with white chocolate. However, for yogurt, the majority agreed that the colour of the packaging clearly suggests the flavour of the yogurt to them. Examples given were red for strawberry or raspberry flavour, yellow for banana or tropical fruit flavour such as pineapple, blue for berries such as blueberry. The green colour evokes an apple flavour for some, but for most the impression of "something healthy" prevails, and the black colour evokes a chocolate flavour for one participant (female, 24), but for the others no flavour is evoked.

3. Brand Associations

An important topic we identified in the discussion is the association of product packaging colours with specific brands. On

this topic, our participants uniformly agreed that certain packaging colours are strongly associated with particular brands. Two of our participants (female, 24 and female, 23) even highlighted the fact that, especially when traveling to countries with other spoken languages, they often find themselves buying a product of a colour that reminds them of a brand they are buying at home, despite the fact that in that country the given colour is associated with a completely different brand. In this case, colour serves as an important brand recognition factor. Our participants also agreed that this factor is slightly stronger for chocolate packaging, compared to yogurt, but even there the colour-brand association is not negligible. Our participants also mentioned that they consider it important for brands to keep a consistent colour on their packaging to avoid customer confusion. They believe that frequent product colour changes can hinder a brand's efforts to gain customer loyalty, as customers may not realize that they are buying the same brand as it appears different.

4. Personal vs Gift Shopping

When we asked our participants if they buy chocolate and yogurt, the answer was an unequivocal yes. The frequencies of purchase naturally varied, but what differed significantly were the occasions on which they bought these products and the preferences when buying for the occasion. For yogurt purchases, it is easier: all of our participants unanimously responded that they mostly purchase yogurt for their own consumption. Their main decision factors for choice include quality, flavour, nutritional value, and price. However, when it came to chocolate, the answers were diverse, and a very rich discussion ensued. Participants agreed that when they buy chocolate for themselves and hence for their own consumption, they tend to spend less money and the packaging of the product does not play such a big role for them. In this case, they focus more on the flavours and their own preferences. One of our participants (female, 23) commented that it also makes a difference to her for what purpose she buys chocolate. For example, if it is for cooking or baking,

she looks for cheaper chocolate because there the taste does not matter as much. However, if she is buying chocolate as a dessert, she looks for a high cocoa percentage and quality, for which she is willing to spend more money. The majority of participants agreed that if they were buying chocolate as a gift for someone else, the packaging of the product as well as its quality were the most important selection factors. It is very important to them that the gifted chocolate looks presentable and luxurious. All participants confirmed that this impression is mostly given by the black packaging of the product. They expect a higher price for this type of chocolate, which they are willing to pay if they know and trust the brand, or if they do not know the brand, the packaging gives them a feeling of quality and luxury.

5. Black – luxury or mystery

A surprising topic of our conducted focus group was the black colour. It was perhaps the most discussed and controversial colour of all. While the other colours evoke clear associations in most of our participants, black can appear confusing. With chocolate, black evokes dark chocolate and a high percentage of cocoa, and thus a certain luxury and high-quality product. Our participants confirmed that if they were looking for high-quality chocolate, they would most likely buy one with black packaging. However, for yogurt, participants were not sure what to associate the black colour with. Half of our participants stated that they associated the black packaging of yogurt with a high protein content and thus a more balanced nutritional value of the yogurt. Three participants also stated that they imagined "something special" with the black packaging and so were likely to buy and try the product. However, the other three participants would be afraid of the black packaging of the yogurt as they do not associate it with anything in particular and would rather buy a yogurt with a different colour packaging where they have more certainty.

Conclusion and implications

This paper aimed to study the influence the use of colours in packaging can have on consumers' perceptions, and resulting purchasing behaviour in the food industry. In the first part of the paper, a literature review has been done to theoretically support our thesis; basic concepts of colour psychology have been explained, as well as colour's properties and the meaning scholars have previously associated with the most popular hues. Then, the implications of colours in packaging and branding have been depicted, and the interest was narrowed into the food industry only.

To sustain our thesis, empirical research was conducted in the form of a questionnaire survey which involved 60 respondents and a focus group with 6 participants to further investigate what was found with the survey. The considered food products were chocolate and yogurt. The results of the research showed a medium level of interest towards food packaging, which is slightly higher if the product is bought for other people. Further, it highlighted how the different colours used by marketers impact what consumers think about the product's attributes, in particular considering the three factors of price, quality and healthiness. Specifically, it was found that colours can create associations that are shared among the majority of consumers. At the same time, it was also found that in some cases, people mainly relate the packaging colour to the possible flavour of the product, and all the other associations (such as price, quality and healthiness) become less important. Black was proved to be one of the most powerful colours speaking of associations, able to link people's perceptions to different sensations and expectations and, if carefully used, generate a feeling of curiosity. The research also underlined that the colour of food packaging is also an important brand recognition factor for consumers, and can help companies to increase brand loyalty and reduce consumers' disorientation at the shelf.

The research has different implications for branding and marketing. A deep

understanding of how colours can impact people's minds and perceptions could help food companies to strengthen their brands, by extending the positive perceptions from the single product to the brand itself, increasing awareness and positively impacting its personality and identity. Then, knowing what colours are associated with could help to reach the targeted consumers, and to implement a good positioning strategy.

Limitations and further research

This study also presents some limitations. Firstly, the age group involved in the research was limited to people from 18 to 25 years old, so the results may not be applied to the whole population. Then, the research was only focused on two specific products, and further studies would be needed to discover if the presented colours associations are valid for other food products too. Ultimately, the ability of colours to impact the brand itself starting from influencing consumers' perceptions occurs through packaging, so for the implications to be valid food companies need to put more effort in increasing the relevance of their packaging as a purchasing factor for consumers.

Appendix

Appendix 1 - Survey questions

1. What is your age?
2. What is your sex?
3. What is your highest reached education level?
4. What is your own approximate monthly income (after taxes)?
5. Please mark if you are allergic to any of the following:
 - milk
 - peanuts
 - gluten
 - nuts
 - sulfites
6. Do you have any other dietary requirements, that would influence your consumption of chocolate or yogurts?
7. How often do you buy chocolate?
 - every day
 - once a week
 - once in 2 weeks
 - once in a month
 - less than once in a month
8. For whom do you usually buy chocolate?
 - yourself
 - family members
 - friends
 - others
9. Please rank the importance of the following factors for you when buying chocolate for yourself: price, packaging, quality, flavour, healthiness. (5 = most important; 1 = least important)
10. Please rank the importance of the following factors for you when buying chocolate for others: price, packaging, quality, flavour, healthiness. (5 = most important; 1 = least important)
11. Look at the pictures below and rank the chocolate bars based on their price. (5 = most expensive; 1 = least expensive)
12. Look at the pictures below and rank the chocolate bars based on their

quality. (5 = best quality; 1 = worst quality)

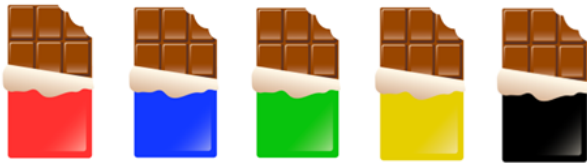
13. Look at the pictures below and rank the chocolate bars, based on what you perceive as the healthiest. (5 = most healthy-looking; 1 = least healthy-looking)
14. How often do you buy yogurt?
15. Please rank the importance of the following factors for you when buying yogurt: price, packaging, quality, flavour, healthiness. (5 = most important; 1 = least important)
16. Look at the pictures below and rank the yogurt based on their price. (5 = most expensive; 1 = least expensive)
17. Look at the pictures below and rank the yogurt based on their quality. (5 = best quality; 1 = worst quality)
18. Look at the pictures below and rank the yogurt, based on what you perceive as the healthiest. (5 = most healthy-looking; 1 = least healthy looking)
19. Is the packaging of a product important to you?
20. Do you tend to buy always the same brand of products?
21. Do you like to try new products? (food-related)

Appendix 2 - Focus group questions

1. Do you usually buy chocolate/yogurt? If yes, mainly for what occasions?
2. What factors are important for you when buying chocolate/yogurt?
3. Are the factors different when you are buying products for yourself and for others? If yes, why do you think this is the case?
4. When looking at the pictures, what associations do you have with the shown products? Do you consider any of them to look particularly expensive, high-quality, or healthy?
5. Do your preferences about the packaging colour differ when it comes to chocolate and yogurt?
6. How much do you think the colours influence you when buying (these) products?

Appendix 3 - Pictures shown in the survey and during the focus group

1. Chocolate



2. Yogurt



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