

Consumers' preferences for visual elements on chocolate packaging

ABSTRACT

Many recent researches focused on packaging elements as two separate groups: visual and informative elements. This study goes deeper into the group of visual elements on food packaging (i.e. strawberry chocolate packaging) in order to investigate their ability to attract attention. The elements tested in the study were: typeface, graphics, pattern and colour. The study included 90 people who participated by filling out an online questionnaire. The participants' task was to choose, among packaging designs with the manipulated visual elements, the one they preferred. According to the results, typeface did not affect participants' preferences. On the contrary, graphics, patterns and colours had a significant impact on the choices. Participants preferred photography over illustration, concrete pattern over abstract and vivid colours over dull. These results can be used as guidelines in marketing and design.

KEY WORDS

packaging, design, typeface, photography, illustration, colour

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Introduction

Marketing activities are geared towards consumption increase in order to gain profit. Understanding the logic of consumer behaviour can significantly contribute to successfully achieving this goal. Many researches point out the fact that impulsive buying is most common, and in those cases packaging design has a significant impact. Consumers will connect the package quality with the product itself, so if a packaging conveys the feeling of low-quality consumers will perceive it as if the product is of low quality as well, even if that is not the case (Underwood et al, 2001). Presentation of higher quality, product improvement, enhancing visual impact on customers, specific presentation of the brand, improvement of the relationship between the brand and consumer- all can contribute to competitive advantage (Ahmad, A. & Ahmad, Q., 2015). Purchase decision also depends on socio-demographic characteristics of consumers, price and quality of the product, type of packaging, labels and brands (Aday & Ugur, 2014). However, the ability of packaging design to attract and keep consumers' attention

is directly linked with a positive opinion of the product (Schormanns & Robben, 1997). Attractive packaging of a product at the point of sale will help consumers make decisions in the store quickly (Silayoi & Speece, 2004). Therefore, understanding the way of how consumers perceive and evaluate packaging during the purchase decision phase can give guidelines for design and communication strategies. Silayoi & Speece (2007) define two categories of elements which potentially have an impact on the purchase decision: visual and informative. Visual elements include graphics, typography, colour, size and shape of the packaging, while the informative elements refer to the information and technology that was used to produce the packaging. Information and visual elements have the most important role in the purchase decision phase in comparison with other phases.

Typography research suggests that consumer preferences vary and that typography, on a conscious level, is not particularly important to them. Also, the importance of typography in purchase decision-making process is still an area that is not yet investigated enough.

Typefaces can be split into two categories, text and display typefaces, which are intended for various purposes as their priorities are different (Harkins, 2011). Ampuero & Vila (2006) concluded that packaging for elegant products usually presents bold, large, roman, upper case letters with expanded characters; in contrast, accessible products of reasonable price are associated with serif and sans serif typefaces. The same authors in a study from 2008 concluded that designers and ordinary consumers have different preferences; therefore, it is hard to distinguish it as a variable. On the other hand, typography can have an impact on flavour perception (Velasco et al, 2014). All these finding indicate that it is important to explore the field of typography (in this case precisely typefaces) more thoroughly as an independent variable which may have an impact on the purchase decision and product perception.

According to Wang & Chou's research (2010) to understand content, it is necessary to have more than two visual elements. Combination of typography and illustration presented itself as the best combination for understanding. In addition, other elements such as brand, product name, packaging shape, photo of the product and colour associations, all contribute to the same understanding and help with the purchase decision. Users ranked packaging technology as the most important attribute when shopping, followed by packaging shape, product information, colour and graphics. Varela et al. (2014) claim that brand, product name and image have the most power of capturing attention while the percentage of consumers who gravitated towards other information such as net weight and claims was low. Rettie & Brewer (2000) researched the positioning of textual elements and graphics, and concluded that consumers have a better recall when the textual information is on the right side and graphics on the left side of the layout. However, it is important to note that they didn't research the vertical positioning when the layout is symmetrical.

A picture of the product can positively affect consumers' evaluation, but the impact of the picture on visual estimation depends on whether the verbal and visual information can be integrated into a single picture (Estiri et al., 2010). Upper class products are often associated with pictures of the product while accessible products are associated with illustrations, often depicting people (Ampuero & Vila, 2006). Using pictures on packaging can be a strategic method of differentiation. In fact, a good quality product picture makes the consumer connect the product with positive associations (Silayoi & Speece, 2007).

Colour, next to brand, is one of the most researched topics in packaging. According to Silayoi & Speece (2007) the change in colour can have a positive effect on consumers and result in the acceptance of packaging regardless of other elements. It's important to match colours

with the expected qualities such as flavour and nutrition. Hurley et al. (2017) investigated if there is a preference of colour harmonies on consumer preferences of packaging design. Employing branding colour schemes, trend colours, promotional colours, and others, was demonstrated not to hinder the preference of consumers so these results indicate the freedom for designers. There is a positive correlation of brand recognition through packaging colour (Adam & Ali, 2014). Upper class consumers prefer cold colours and fewer elements (usually visual), while price sensitive consumers prefer lighter colours (Ampuero & Vila, 2006). Chind and Sahachaisaeree (2012) conclude that using medium colour has the best influence on attractiveness. Hoegg & Alba (2007), Spence et al. (2010), Ares & Deliza (2010) and Piqueras-Fiszman et al. (2012) showed that even a small colour manipulation can have a strong change in consumer taste perception while Becker et al. (2011) did not achieve the same effect when using less saturated colours on yoghurt packaging. It is also important to note that different countries and cultures can perceive colours in their own way, giving them various meanings. (Madden et al., 2010). The effect of colour on willingness to buy was not found in Rebollar et al. research from 2012 while also confirming the effect of colour on taste expectation.

It is possible to influence customers' behaviour in many ways from which psychology of colour was always a strong marketing tool due to the fact that every colour evokes different emotions in people and attracts attention in various ways. Consumers often make subconscious evaluations when deciding whether to purchase a product (Rundh, 2009). In addition to using colour psychology, graphics are also becoming an important marketing tool. They leave a strong impact on consumers, attract and hold their attention, and have the power to stimulate appetite (Cahyorini & Rusfian, 2011). Mentioned visual elements have not been compared as a factor in the process of purchase decision. Therefore, the aim of this study is to establish which visual elements attract the most attention in the case of food products.

Problem statement

Previous studies focused on the relationship and importance of informative and visual elements, but they did not thoroughly investigate each category on their own or addressed each element and its impact. Namely, in packaging design every single visual element affects the consumer on its own, specific way. The same way how people perceive various colours differently, there is a difference in perception of illustrations and photography, text and display typefaces. Different shapes of elements on packaging cause different emotions and associations which consumers directly connect with the product and its quality.

It is necessary to more deeply explore the issues regarding the relationship between certain visual elements and their impact on consumers' decision-making process. These findings could be used to improve design and marketing communication. Therefore, the aim of this study is to establish which visual element attracts the most attention in the case of food packaging, and it's based on hypotheses:

- Participants prefer display typefaces on chocolate packaging.
- Participants prefer concrete pattern on chocolate packaging.
- Participants prefer photography on chocolate packaging.
- Participants prefer vivid colours on chocolate packaging.

Methodology

In this study the independent variables were typeface, graphics, pattern and colour while the dependent variable was participants' preferences.

Participants

90 people participated in this study, from which 74 of them were students. Their average age was 23.46 years (SD=1,9). 68% of participants were women, while the rest were men.

Samples

For the packaging samples the chosen food product was chocolate due to its widely consumption and familiarity. Although chocolate comes in various flavours, we decided to choose only one flavour (i.e. strawberry) across the samples. The reason was to reduce the effect of taste preferences. The chocolate packaging was designed using Adobe Photoshop CS6 and applied onto a mock-up. Additionally, to avoid preferences of a particular brand, a fictional logo of an unnamed company was created. Many researches point out the importance of packaging shapes in purchase decision because shape often differentiates a product from competitive products (Raghubir & Greenleaf, 2006; Chind & Sahachaisaeree, 2012; Westerman et al 2013; Dadras, 2015). However, in this study shape was excluded due to the fact that chocolates usually come in a standard rectangular shape with variations in thickness and dimensions.

This study was conducted on eight packaging samples designed in four pairs, changing main visual elements, while keeping the other intact (Figure 1). The samples were designed as follows:

First pair of samples:

- unchanged elements: product (strawberry chocolate), packaging size, colour saturation, information

- manipulated element: typeface (text typeface vs. display typeface)

Second pair of samples:

- unchanged elements: product (strawberry chocolate), packaging size, colour saturation, information, text typeface
- manipulated element: graphics (photography vs. illustration)

Imaging style like 3D renders were included in the photography category because they have the same level of structure and are commonly used when a product is not suitable for photography.

Third pair of samples:

- unchanged elements: product (strawberry chocolate), packaging size, colour saturation, information, text typeface
- manipulated element: pattern (concrete vs. abstract)

Fourth pair of samples:

- unchanged elements: product (strawberry chocolate), packaging size, information, graphics (photography), text typeface
- manipulated element: colour saturation (vivid vs. dull)

The fourth pair of samples was developed using a photography because this is the most common type of visualisations on chocolate packaging, which was then manipulated in Photoshop by lowering the saturation for 50%.



» **Figure 1:** *Chocolate packaging samples:*
 1) *Typeface variants;* 2) *Graphics variants;*
 3) *Pattern variants;* 4) *Colour saturation variants*

Procedure

Data was collected using an online questionnaire. It was chosen due to the fact that the target audience of this study is quite dynamic and constantly moving, therefore this way of collecting data gives them the choice to participate when they have free time and when they want it. Link to the questionnaire was sent through e-mail. In the questionnaire, participants were asked to choose one packaging in each pair that they prefer.

Results

Chi-square tests were used to examine for statistically significant differences in participants' responses across the experimental comparisons. Differences with p values less than 0.05 were considered as statistically significant (Table 1).

Table 1

Collected data

factor	level	n (%)	χ^2	p
typeface	display	47	0.8	0.37
	text	53		
graphic	photography	94	142.22	< 0.001
	illustration	6		
pattern	concrete	62	10.75	< 0.005
	abstract	38		
colour	vivid	90	115.20	< 0.001
	dull	10		

Although slightly more participants chose the packaging with text typeface (48 participants) over display typeface (42 participants), the performed Chi-square test revealed no significant difference between these packaging samples ($\chi^2 = 0.8$, $df = 1$, $p = 0.37$). The analysis of differences between the packaging samples with photography and illustration yielded a significant effect of graphic ($\chi^2 = 142.22$, $df = 1$, $p < 0.001$), indicating that participants preferred photo (85 participants) over illustrated (5 participants) graphic of chocolate ingredient. Furthermore, the participants were more inclined to choose packaging with concrete pattern (56 participants) over packaging with abstract pattern (34 participants), suggesting that type of pattern affected participants' responses ($\chi^2 = 10.75$, $df = 1$, $p < 0.005$). When it comes to colour, the results showed significant difference in participants' choices ($\chi^2 = 115.20$, $df = 1$, $p < 0.001$), indicating that vivid colour (81 participants) was preferred over dull colour (9 participants).

Discussion

There are many researches that investigate the connection of colours and shapes with certain flavours. Rounded shapes of typography are often connected with sweet

flavours and technical with sour (Velasco et al., 2014). However, the results of our study showed that the sweet flavour of the product (i.e. strawberry chocolate) did not affect the preferences for display typeface, so our first hypothesis was not confirmed. There is a possibility that when a chocolate is presented using purely typography the perception of sweetness could be lost. Another reason for it can be the fact that both typefaces come from the same sans-serif family, making it an insignificant factor. Although the typeface did not have an impact, the pattern did. According to participants, better attractiveness had the concrete pattern rather than abstract, confirming the second hypothesis. This was expected since concrete representations on food packaging often transfer information about the product and its contents so people are quite familiar with this concept. The concrete pattern in this example is a stylized image giving it a better connection with the product because of its recognisability in comparison with an abstract pattern. Furthermore, the abstract pattern is quite noticeable which may have decreased the hierarchy of textual information while not giving any information about the ingredients. Also, when comparing graphics, participants preferred photography over illustration, which confirmed the third hypothesis. One possible reason for that could be that photography (even when it is digitally manipulated or a 3D render) still shows the product more realistically than illustrations, giving consumers a feeling of reliability, which is very important in food packaging (Pensatorn, 2015). Equally important, participants preferred vivid colours (confirming the fourth hypothesis) which was expected, especially in the case of the examined product (strawberry chocolate) where exactly these colours people connect with sweetness, but also the natural colour of the components (strawberry fill) (Clydesdale, 1993).

Conclusions

In conclusion, this study showed that different typefaces do not affect participants' preferences. In contrast, concrete patterns, photography and vivid colours are more attractive elements than abstract patterns, illustration and dull colours. These findings can be used as guidelines when designing food packaging. To make the product more attractive to customers it is possible to use vivid colours, as well as colours which in some way give associations of the product ingredients. It is also important to keep this in mind during the printing process of food packaging and use pantone colour scales since they give more saturated results than those printed in CMYK. When comparing photography and illustrations, photography should be the first choice on food packaging designs because as it was previously mentioned it has the power to attract attention and even stimulate appetite, a feeling that often causes impulsive buying. However, this study was conducted on a limited age group ranging from 20 to 30 years old, from which

most of them were women, and also on samples of one type of product (chocolate) which were tested using an online questionnaire. The online questionnaire may be a limitation when testing, especially colour, as various screens may display them differently. There is a possibility that the results may vary with other food products and age groups, so future researches should examine the noticeability of visual elements on different products and age groups.

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