The role of background color, interletter spacing, and font size on preferences in the digital presentation of a product

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ABSTRACT

The main goal of this research was the analysis of persons' attitudes toward digital graphical information regarding various types of smartphone's virtual package designs. Sixty students from two different faculties were involved in the study. Both the faculty and gender effects were controlled. The packages were electronically presented to the subjects on the computer screen. A binary pairwise procedure within the framework of the conjoint analysis was employed to assess the examinees' preferences. The experimental stimuli differed in the brand name location in relation to the product image (left and right hand side), background colors used (grey and pink), and the typography applied to the brand name (big and compact text versus small with the increased interletter spacing). The main results showed significant effects of brand name location and typography along with significant interactions concerned with the background package color. Generally, males preferred grey variants while females – pink. These results analyzed along with the conjoint analysis outcomes surprisingly show that the background color was the main factor influencing males' preferences while for women it was the least important issue. The cluster analysis results demonstrated significant interpersonal discrepancies and identified three, similar in number, groups sharing common preference structures.

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1. Introduction

Packaging concerns almost all goods in a contemporary world. Classically, the main product package functions (Robertson, 2006) include the: containment, protection, convenience, and communication. While, generally, all these uses are important sometimes they have no application as there are packages for products that physically do not exist such as computer software or a piece of music. Both in real and virtual environments one may also find packages used for selling various kinds of services, or services accompanying a product. Thus, quite frequently there exists only a digital version of the package used for informative and marketing purposes and available in electronic shops, auction portals, displayed on billboards or used as a part of digital signage messages.

It has already been proved that the visual appearance both of real packages as well as their virtual counterparts may have influence on purchasing decisions, therefore, the recommendations based on scientific investigations are of great interests for marketing researchers and practitioners. Many studies dealing with static visual marketing message conveyance were and still are inspired by knowledge derived from various fields such as psychology, vision physiology or anthropology. The general idea of this type of investigations very often comes down to verifying to what extent those general theories apply in practical situations, what the limitations are, and how they can be transformed to practical design rules. In the current study we continue research in this trend and investigate components existing in almost any packaging that is the background color, brand name, and product image.

The remainder of this work at first review the research related to examined factors which ends with specifying detailed goals of the research. Then, the description of the conducted experiment is presented. The obtained data are next demonstrated and analyzed. Finally, the discussion of the findings is provided along with the conclusions.

2. Related research

Generally, the package design issue has been subject to many investigations concerned with a great variety of problems. Lately, a comprehensive review and classification of articles from

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academic journals in English published between 1990 and 2011 and dealing with the broadly understood packaging design has been provided by Azzi, Battini, Persona, and Sgarbossa (2012). The authors list five fields of high importance for packaging design including: (1) safety, (2) ergonomics, (3) sustainability, (4) logistics, and (5) marketing and communication. The current study is mostly focused on last area, though it can also be treated as an attempt to determine how to fit the message to a human being which is, in turn, the domain of the ergonomics.

The importance of packaging informative and marketing functions was noticed many decades ago. Dichter in 1957 called the package a *silent salesman* whereas Lewis (1991) went even further treating the packaging as a *flag of recognition* and a *symbol of values* and recognizing the considerable influence of the pack design on relationships between the brand and the consumer. The magnitude of package design significance is also acknowledged in recent studies (e.g. Wells, Farley, & Armstrong, 2007). It is commonly believed that the packaging plays an important role in attracting attention, providing information and shaping customers' perception about a product (Orth & Malkewitz, 2008 and Clement, Kristensen, & Grønhaug, 2013; Littel & Orth, 2013; Orth & Malkewitz, 2012). Many studies have proved that final purchase decisions and price expectations may be strongly influenced by the packaging design (Bloch, 1995; Orth, Campana, & Malkewitz, 2010; Reimann, Zaichkowsky, Neuhaus, Bender, & Weber, 2010). Therefore, there are a number of various studies aimed at seeking the ideal form of the package in diverse contexts (e.g. Crilly, Moultrie, & Clarkson, 2004 and Chou & Wang, 2012; Crilly, Moultrie, & Clarkson, 2009; Garber, Hyatt, & Boya, 2009; Hoegg, Alba, & Dahl, 2010) and exploring factors that influence the users' preferences (e.g. Gofman, Moskowitz, & Mets, 2010; Holmes & Paswan, 2012; Limon, Kahle, & Orth, 2009). A great body of literature in this regard has been devoted to the so called low involvement products (e.g. Ryynänen & Hakatie, 2013).

2.1. Package background

Visual appearance of the package depends on different factors (Silayoi & Speece, 2007) including the way the background is designed. There is little research related specifically to this issue, though this effect seems to be an important factor. Among the studies related to the pattern used there is a paper presented by Krugman (1966) which revealed that beer can designs were differently perceived by White and Negros. The more colorful or gaudy the design was, the more inexpensive it seemed to be to the White customers. In the Grobelny and Michalski (2011) study the digital signage background pattern factor also significantly influenced the subjects' preferences. The gaudy type of the background was considered better than the subtle and uniform ones. The difference between the subtle and uniform color was not meaningful. Further analyses, however, showed that the preference structure was not straightforward and seemed to be considerably influenced by other design factors.

There exists a significant body of research concerned with perceiving colors in general. Early study of Granger (1955) and Guilford and Smith (1959) provides the following hierarchy of color preferences blue > green > purple > red > yellow. In the work of Helson and Lansford (1970) similar order was obtained: blue > green > red > purple > yellow. Some colors may induce more arousal than others which was shown for red and green colors examined by Wilson (1966). According to this study red seems to be more stimulating than green. Excitement induced by the red color has been also noticed in research from the marketing domain. Lately, Puccinelli, Chandrashekaran, Grewal, and Suri (2013), in turn, explored the effect of red versus black prices' labels included in advertisements of toasters and microwave ovens. It occurred

that males perceived red prices as less expensive than the black ones. This effect was not observed for women and was markedly abated for males when the experimental task required more involvement.

A very comprehensive research pertaining to the usage of color in marketing was presented by Labrecque and Milne (2012). Among other things they explored the effects of various color hues, saturations and lightness level values on perceived brand personality dimensions. The brand was represented by fictitious logos that were demonstrated on a computer screen. The obtained results showed positive correlations for pink and white with sincerity, red with excitement, blue with competence, black with sophistication and ruggedness with brown. Additionally, saturation had a positive relationship with excitement but lightness did not influence this dimension. Saturation had a positive whereas lightness negative relationship with ruggedness. Authors took advantage of the obtained results to design a target brand personality for condoms by changing only the package color. They not only managed to replicate the previously obtained results but also showed that the manipulated color factors can affect purchase intensions. An interesting discussion of the color role in marketing is presented in Grossman and Wisenblit (1999) and extensive review related to various aspects of colors usage in marketing is provided in the paper of Labrecque, Patrick, and Milne (2013).

Studies also showed that the color preferences may be influenced by the object to which the color is applied (Schloss, Strauss, & Palmer, 2012; Taft, 1997). In the marketing science domain, a number of studies supported this point of view. For instance, Holmes and Buchanan (1984) compared College students generally preferred colors with favorite colors for diverse objects such as cars, clothing and furniture. The results showed that color preferences depend on the type of object and are independent of the general color preferences. Middlestandt (1990) examined the effect of two background colors (red and blues) on three products attitudes: a bottle of perfume, a gold and silver pen and a bottle of mineral water. The results show that pen presented on a blue background was more preferred that pen on a red background. The effect of background color was not meaningful for the remaining two objects. In other study Kauppinen-Räisänen (2010) using the conjoint analysis showed that even for similar products from the same general category (painkillers and sore throat medicine) the customers' color preferences toward package background may differ. A complementary qualitative investigation, involving the same packages and background color factor levels, was performed by Kauppinen-Räisänen and Luomala (2010). They provided some more insights into the interaction between the color and a product type in the context of attention, aesthetics and communication.

There are also studies showing that the colors may be perceived differently by specific groups of people. Some scientists showed that color preferences might result from culture differences (e.g. Saito, 1996). In marketing, cultural differences were explored, for instance, by Clarke and Honeycutt (2000) who analyzed print advertising colors usage in France, the United States, and Venezuela. The results show preference of red, orange, and green colors in Venezuelan ads whereas in France and the U.S. significantly higher proportions of black and brown colors are used. Kauppinen-Räisänen, Owusu, and Bamfo (2012) employed an exploratory conjoint analysis to investigate factors of package design including various background colors in Finland, the USA, and Ghana. The results generally confirm different attitudes expressed toward product packages by people from the examined countries. In some cases, however, the cross-cultural effects were not meaningful (e.g. Labrecque & Milne, 2012).

The studies of a mediating effect of gender on color preferences are not consistent. Although general studies of Granger (1955),