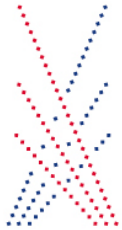

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The role of culture in shaping UGC towards new product design through crowdsourcing ideas

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Abstract: This research will investigate cultural differences in the product-related beliefs within the crowdsourcing ideas of users towards new product development. This will be done through a cross-sectional study designed to interpret users' cognitive responses in terms of product-related beliefs in users' ideas through their preferences and judgments. Culture is considered to be a mediator in this study, and this will allow the researcher to interpret the results in the light of cultural differences.

UGC: is the content available to the public via online, that reflects the creative efforts by a certain amount and which is generated outside of the practices professional routines (Vickery and Wunsch-Vincent, 2006.

Aesthetics of Products: the aesthetics of a product are those attributes which represent the appearance of the product and have the ability to have an impact on the customers and observers (Lawson,1983).

Crowdsourcing idea: is the online idea crowdsourcing for NPD is defined as "the act of taking a job traditionally performed by a designated agent (usually an employee) and outsourcing it to an undefined, generally large group of people in the form of an open call" (Howe, 2006: b).

1. Introduction

1.1 Overview

Recently, there has been a notable trend in marketing studies and management by recognition that users' ideas are the main organisational assets. Faullant et al. (2016) found that crowdsourcing competitions have recently been recognised as robust instruments to integrate users in new product development. Many companies around the world have increasingly made use of crowdsourcing in an attempt to have direct access to the crowd's knowledge in terms of users' needs, in order to generate tangible ideas for new products. Thus, the users' needs and expertise can be employed to solve emerging problems (cf. Bonabeau, 2009; Haller et al., 2011).

An important research efforts have focused on the crowdsourcing ideas of the users and the possibility of the influence of some cultural, technological and social factors on their thinking and opinions. Although that, the main problem for conducting such a research is the observable paucity of existing research drawing comparisons between the online views of users about new product ideas regarding the same product in terms of the aesthetic features of the product. A great deal of research has focused on the effect of product aesthetics characteristics on consumers' ideas as general. However, little research examined the product aesthetics characteristics separately in terms of color, shape and size. According to Birren (1945) A product's aesthetics can essentially influence the consumer cognitive processes.

1.2 The aim of the thesis

The purpose of this study is to investigate cultural differences in the crowdsourcing ideas of UGC in New Product Development, through the interpretation of users' cognitive responses in terms of the product-related beliefs in users' ideas towards the characteristics of a product's aesthetics. The aim in filling the research gap is to investigate whether differences in the characteristics of a product's aesthetics could influence product-related beliefs in the crowdsourcing ideas of UGC. It will also examine the similarities and differences between product-related beliefs in the crowdsourcing ideas of a UGC groups. In addition, this paper will highlight the most influential characteristics of product aesthetics in the product-related beliefs in the crowdsourcing ideas of UGC, and then investigate how culture affects product-related beliefs in the crowdsourcing ideas of UGC. Culture is considered to be a mediator in this study, and this will allow the researcher to interpret the results in the light of cultural differences.

Culture is used as mediator as this variable can mediate the relationship between the independent variable and the dependent variable, and interprets the reason for such a relationship to exist. This means that culture will help to interpret how external physical events affect internal psychological values. Here, the effect of the product's aesthetics

explains the product-related beliefs in the crowdsourcing ideas of the control and experimental users. In the same context, this argument is supported by the consideration that moderators should not be correlated with the independent variable, whereas, statistically, mediators should (Baron & Kenny, 1987). Theoretically, on the individual level, the moderator has more potential in cases examining the trait–culture relationship, while the mediator has more potential when examining it on the national level (Rossberger & Krause, 2013). Thus, this study requires a framework to interpret differences between users' ideas in light of culture.

1.3 The Research Questions

- Does differences the characteristics of a product's aesthetic influence product-related beliefs in crowdsourcing ideas of the control and treatment UGC?
- What are the similarities and differences between product-related beliefs in the crowdsourcing ideas of the UGC?
- Which characteristic of the product has the most influence on the product-related beliefs of the crowdsourcing ideas of UGC?
- How do cultural differences affect product-related beliefs in the crowdsourcing ideas of UGC?

1.4 Developmental Literature Review

On the basis of a literature review, there is a paucity of research on whether cultural factors can affect the ideas that users generate, although several aspects of crowdsourcing have come under close scrutiny. As indicated above, recent literature argues for the assumption that crowdsourcing can constitute a promising method to gather users' ideas, which are then added to those of a firm's professionals at the stage of idea generation in new product development (Poetz &

Schreier, 2012). However, it appears that there is no specific method to ensure a proper implementation of new product design. This is due to a lack of in-depth research in the marketing field investigating the social and cultural differences through users' cognitive response to the development of the aesthetic properties of the product (Crozier, 1994; Hugo, 2002; Lewalski, 1988; Aykin, 2005; Bloch, 1995; Kotro and Pantzar, 2002; Creusen and Schoormans, 2005; Onibere et al., 2001; Crilly et al, 2004). Cultural factors could pave the way to a diversity of design notions that will assist product innovation (Dejean, 1999). It will be fruitful to consider the manifestations of cultural variations that dominate these psychological reactions such as cognitive reaction, and compare these differences; then, interpret how these manifestations affect the cognitive reaction. Therefore, culture is a variable that is responsible for several of the variations in people's choices towards a product's aesthetics. Even popular wisdom says that our food is usually shaped by the culture to which we belong. Also, it seems clear that culture may influence our aesthetic preferences when considering the variety between cultural expressions such as design, fashion and art.

Therefore, this research uses two models: consumer response to product design and Hofstede dimensions. The first model examines users' cognitive responses in terms of product-related beliefs in users' crowdsourcing ideas, and through their preferences categorizes these preferences and judgments using psychophysical properties for product aesthetics as a stimulus, including colour, shape and size. The second model provided a structure to organize, compare and interpret the results in light of the cultural values of societies. It also proved useful in achieving a better understanding, justification and interpretation of the findings, in light of the emerging cultural differences about the effect of a product's aesthetics on users' ideas. Thus, this paper will be able to answer the research question: 'Investigate the cultural differences that affect the online crowdsourcing ideas of the users' UGC in new product development in Saudi Arabia'.

In this case, this study built a framework to compare and interpret differences in product-related beliefs in the control and treatment users' crowdsourcing ideas, in light of culture. Based on this, the Hofstede model regarding cultural differences offers a window to view cross-cultural differences as a mediator (Barkai, 2005). Hofstede and McCrae (2004) mentioned that cultural practices at the national level need to work as a mediator because people's characteristics are

influenced by national orientations. In contrast, on the individual level, cultural practices moderate the relationship between individual factors of character and innovative behaviour, because the individual can hardly impact national cultural practices. Moreover, a single mediator model (individualism / collectivism) provided valuable inspiration for this paper. Individualism / collectivism is the cultural dimension most used to compare the different cultural groups and has been frequently discussed and researched, except in the context of crowdsourcing ideas. Therefore, the current research has decided to examine one of Hofstede's dimensions, individualism vs. collectivism, due to the effectiveness of this dimension in terms of interpreting the cultural differences in crowdsourcing ideas towards new product development. Also, this dimension has generated significant insights into psychological operations (Oyserman, et al., 2002). The research framework is shown in figure 2.5.

The following sub-hypotheses have been developed to interpret the main hypothesis:

H1- A Product aesthetics have a positive effect on the crowdsourcing ideas of control and treatment UGC in new product development.

H1a: Shape has a positive effect on the crowdsourcing ideas of UGC in new product development.

H1b: Size has a positive effect on the crowdsourcing ideas of UGC in new product development.

H1c: Colour has a positive effect on the crowdsourcing ideas of UGC in new product development.

H2. There is a difference between the crowdsourcing ideas of users' UGC in new product development.

H3: Which characteristic of the product has the most positive effect on the product-related beliefs of the crowdsourcing ideas of UGC

H4: A product's aesthetics has a positive effect depending on culture

H5: Culture has a positive effect on the crowdsourcing ideas of users' UGC.

H6: Culture mediates the influence of a product's aesthetics on the crowdsourcing ideas of users' UGC.

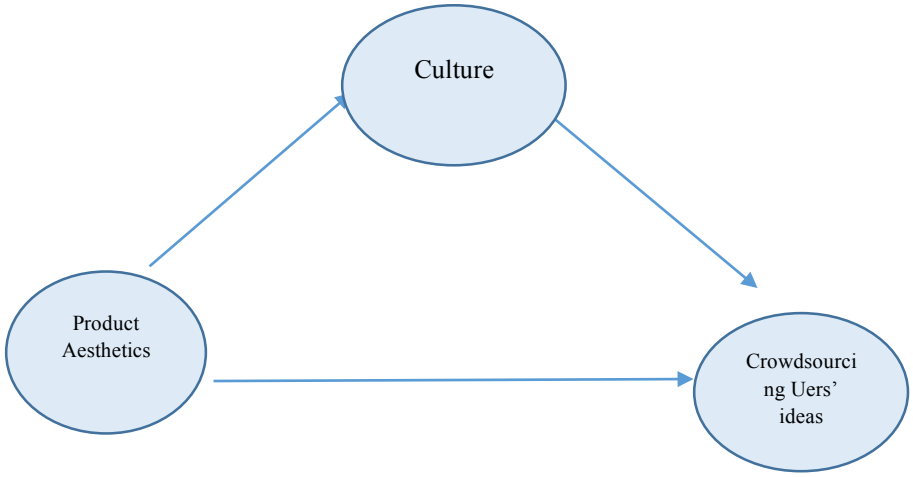

Figure 2.3: The Research Framework.

Moreover, the main motivation for conducting such a research is the observable paucity of existing research drawing comparisons between the views of users about new product ideas regarding the same product, in terms of the aesthetic features of the product. Also a little research examined the product aesthetics characteristics separately and systematically in terms of colour, shape and size. In addition, there is no study has indicated culture should be merged with crowdsourcing when developing the product. According to Tripathi, Tahmasbi and de Vreede (2017) the concept of crowdsourcing does not use the national culture theory and product quality theory. Also there is a lack of research to help companies to integrate culture with product design (Aula et al., 2003). Also the most of the current studies which have examined the relationship between culture and product design have been undertaken in Asia, America and Europe. There is a lack of in-depth research about multicultural countries (Moalosi et al., 2005a), such as the United Arab Emirates (UAE) and the UK. As indicated by Schoormans and Creusen (2005), different product design characteristics, such as colour, shape, taste and size could be explained across cultures differently. Such studies would be fruitful because the potential factors that affect

users might be different. For example, culture, religion, technological development, habits, race and cost. Accordingly, this research provides a promising way to explore the extent to which such factors influence new attractive product ideas.

1.5 The contribution of the current research

This research contributes to the existing research on new product development in Saudi Arabia by shedding light on the way in which ideas generated by local users are grounded in cultural differences with international users. Also, this research will enable a more comprehensive understanding of how new product development in multicultural countries, especially in Saudi Arabia, can be improved. The research will contribute to the wider literature on the impact of cultural difference on generating ideas. In addition, this research will suggest a new approach to design the product by examining the product related-beliefs systematically in the users' cognitive reactions, while the previous research investigated the product related-beliefs using the product design dimensions separately. Additionally, it will help companies to understand users' ideas when developing a product to meet the users' needs. Once these issues are settled, companies can take into consideration any cultural issues when generating new products.

2. Methodology and Research Design

This paper uses of the positivist philosophy and quantitative methods and experiment strategy, this study also use the deductive approach for this research. The deductive approach was a logical choice, because this study is based on two existing theories: consumer response to product aesthetics and Hofstede's theory. However, Bell (2010) indicated that the deductive approach should be used to develop the research hypothesis from existing theories, and to test the hypothesis via data collection. This study's problem started from the existing theories and use quantitative methods and experiment to answer the research questions. In this situation, the sampling frame is the population within Saudi Arabia. Thus, the sample recruited from students and academics of different people above the age of 18 chosen from the above population.

However, this study use the random sampling technique. A simple random sample was then chosen for this study. Subsequently, the experimental survey for these strata in this study is distributed via open call (one type of the crowdsourcing initiative). Open call is suitable for this thesis because it did not present any particular problem or task and is available for use at any time. However, none of the users were closely linked with the design, and this technique is use in order to find explanations of the cultural differences without bias. As a result, 1000 experimental questionnaires distributed via a mail survey and fact to face. In order to generalise the study results, the sample size must be of a sufficient size. Hofstede recommended that any researcher needed to deal with a typical sample size of 50 participants. This is a suitable measure to use in research related to the national culture dimensions theory (Hofstede and Minkov, 2013).

2.1 Method

Participants and Design

In total, 221 participants were recruited from universities databases in Saudi Arabia via open call, So far. Participants were randomly assigned between into one of the following groups: (1) an experimental group who received a questionnaire about table lamp with a green colour, small-size with its simple prototypical shape, and (2) a control group who received a questionnaire about a table lamp with a blue colour and large-size also with its complex and creative shape.

The Experiment Procedure

Everyone read a brief description of the product (table lamp). The descriptions were identical in both conditions, except that each one included a different description of the product's aesthetics feature (stimuli) in terms of size, shape and colour. However, notices that if the intervention was in the product colour, directly we control the others features of product as a shape and size because those may be affected the intervention and thus affected on the results. The researcher identifies the product-related beliefs in the crowdsourcing ideas of users then interprets the differences between the groups in the light of cultural differences.

The Dependent Measures

Everyone answered twenty two questions about the aesthetics features of the table lamp, five demographic-related questions, three questions about the users' attitude and ten questions about culture in terms of long /short term orientation communities that were presented in the experimental questionnaire, where divided the questionnaire into two sections, the first section contained five demographic-related questions (i.e. Gender, ethnicity, nationality, do you have previous life outside of Saudi Arabia, for how long and where?, and How long have you been in Saudi Arabia?) and the second section contained four parts. As for the third section about culture in terms of long /short term orientation towards NPD.

Data Analysis

In the two steps, a KMO test was used to measure the adequacy of the sample size. It also used ANOVA to measure the significance among the groups, and G*power to measure the size of the effect between groups. Factor analysis was used to evaluate the validity of the underlying construct tools, and also its relationship with the collected variables (i.e. confirmatory factor analysis (CFA). Cronbach's alpha was used to measure the reliability of all items' dimensions, while structural equation models (SEM) were also used. After the investigation in the first step and confirm that there are differences between control and treatment group towards product design, we can complete the second step, which is about investigating the cultural differences through classifying the participants based on the nationality to interpret the outcomes sufficiently, which is 4 nationalities.

The Primary results

The empirical study indicated that there are statistically significant differences between the crowdsourcing ideas of the treatment and control cases, generally. The users' ideas were examined through the characteristics of product aesthetics. This means that if there is any direct change in the characteristics of a product's aesthetic, there is a change in the product-related beliefs of the users' ideas, regardless if there is a change in one characteristic or in all characteristics of the product aesthetic. From this perspective, it is observed that differences in

product aesthetics could positively influence users' ideas. This corresponds with H1 (Product aesthetics have a positive effect on the crowdsourcing ideas of treatment and control UGC in new product development). This could be due to some researchers connecting cognitive consumer reaction to product aesthetics based on several external stimuli and design features that influence several positive, and negative, reactions of consumers (Malkewitz & Orth, 2008a; Berlyne 1970; Ellis 1950; Kahn & Sevilla, 2014; McManus 1980). H1a, H1b, H1c, H2 and H3 were also supported.

An interesting finding was that the size of the effect of culture on users' ideas was different between groups. This could be for many reasons, i.e. past experience life could shape a user's ideas. Finally, the dimension of a product's aesthetics, which most affect the users' responses to product-related beliefs, in both treatment and control group, was the element of size.

Word Count: 2000.

References:

Aula, A., Pekkala, A. and Romppainen, C. (2003) Modeling the Socio-cultural Context, ACM. Available at: http://www.urova.fi/mode/dppi03.pdf (Accessed March10, 2017).

Bianchi, C. (2008). Retail internationalization from emerging markets: Case study evidence from Chile. *International Marketing Review*. 26, 221–243.

Bloch, P. (1995). Seeking the Ideal Form: Product Design and Consumer Response. *Journal of Marketing*. 59 (July). 16.

Botswana Product Design. *International Design Congress*. Yunlin. Taiwan. November 1-4.

Baxter, A. (1999). Deep Design. Duncan of Jordanston University, Glasgow, UK.

Bell, J. (2010). Doing Your Research Project. Maidenhead: McGraw-Hill Open University Press.

Creusen, M. and Schoormans, P. (2005). The Different Roles of Product Appearance in Consumer Choice. *Journal of Product Innovation Management*. 22 (1). 63–81.

Crilly, N., Moultrie, J. and Clarkson, P. (2004). The Visual Domain in Product Design. *Design*. 25.547–77.

De Souza,D. and Dejean, A. (1999). Interculturality and Design: Is Culture a Block or Encouragement to Innovation? Design Cultures – an International Conference of Design Research, Sheffield Hallam, UK.

Gao, H. and Prime, P. (2010). Facilitators and obstacles of American companies in China: The UPS case. *Global Business Languages*. 15(1), 48–75.

Gandolfi, F and Strach, P. (2009). Retail internationalization: Gaining insights from the Wal-

Mart experience in South Korea. *Review of International Comparative Management*. 10, 187–199.

Hofstede, G. (2013). Replicating and extending cross-national value studies: Rewards and pitfalls–An example from Middle East studies. Academy of International Business Insights, 13(2), 5-7.

Hossain, M. (2012). Crowdsourcing: Activities, Incentives and Users' Motivations to Participate. Department of Industrial Engineering and Management, School of Science, Aalto University, Finland.

Jin, K. (2008). The influences of product design on establishing brand equity. Brunel University. Moalosi, B., Popovic, C., Hudson,H. and Kumar, C. (2005a). Integrating Culture within

Poetz, M. and Schreier, M. (2012). The Value of Crowdsourcing: Can Users Really Compete with Professionals in Generating New Product Ideas?. *Journal of Product Innovation Management.* 2012;29(2):245–256.

Suh, T. and Kwon, I. (2000). Globalization and reluctant buyers, *International Marketing Review.* 19 (6), 2002, pp. 663–680.

Tripathi, A., Tahmasbi, N. and eVreede, G. (2017). Theoretical Fashions in Crowdsourcing: A Snapshot of IS Research. Proceedings of the 50th Hawaii International Conference on System Sciences.