Indonesian Cultural Design Concept: Analysis on Association of Indonesians’ Design Perception and Culture

Intan Prameswari¹, Haruo Hibino²

¹Institut Teknologi Bandung
²Chiba University

intan.wibisana@gmail.com

Abstract

Culture and design are two concepts that established as strongly associated. This study focused on the perception of culture and design, in particular Indonesian culture and design. The study was conducted as first part of research regarding Indonesian cultural design perception. As a country with vast cultural capital, Indonesian culture possessed great potential to be the source of inspiration in developing design. Conversely, Indonesian population is a potential market that should be understood in developing design in potential market. This study employed the theory of cultural schemata to understand the association of culture and design for Indonesians' respondent. A word association experiment was conducted to understand the strength of association of the perception of Indonesian culture and design. The word association data was analyzed with regression analysis method. It was found that the association of the concepts of Indonesian culture and design are indeed statistically strong. This study also found descriptive of Indonesian cultural design characteristics in form of strongly shared word associations of Indonesian culture and design. The shared word associations contribute in understanding on how Indonesian cultural design was perceived, thus valuable to develop culture-inspired design.

Keywords: association, culture, design, Indonesian, schemata

1 Introduction

Culture provides rich sources of reference, inspiration, and opportunity in developing designs. At the same time, culture can also impose constraints on how design perceived. Culture and design are closely linked, as cultural beliefs, values, and social practices shape the ways people relate to a particular object as stated by Moalosi et. al in [1]. For a product to appeal to users with maximum experience and pleasure, the designer needs to understand the target users and their culture. Cognitively, people with different cultural backgrounds relate differently to the perceived functions of the same object. Similarly, culture also plays a part in producing meaning and ideas, including creative process. This is evident in the development of design styles based on the cultural group from which they each originated (e.g. Japanese and Scandinavian designs). Such styles can be evident even in designs that are not explicitly inspired by the culture.

This study focuses on the association of culture and design in terms of perception. The study employed cultural schema theory, a theory about structure of knowledge that guides the human mind in making sense of the world, as the main approach in analysing the association between
culture and design. Schema refers to the structure of prior knowledge and the cognitive process of interpreting information (Uysal[3], Bartlett[4], Axelrod[5], DiMaggio[6]). The content of schema includes various types of knowledge—both abstract and concrete—consisting of information, images, ideas, scenarios, and so forth. In the context of culture, the knowledge structured inside a schema relates to a cultural group’s way of life. Such knowledge is particular to the cultural group and is shared by the group members, thus defining the cultural schema. An important characteristic of cultural schema is that it is shared among people in the same cultural group (Garro [2]; Derfer, [7]). Shared knowledge, values, perspectives, and attitudes in a cultural group are some examples of cultural schema.

A previous study was conducted to examine the role of culture in design process by identifying culture’s constraints and opportunities in the design process by Prameswari, et. al, in [4]. Indonesia as a nation with expansive cultural capital provides designers with a vast supply of inspiration. The transformation of culture to design is also a widely studied subject in the academia (Uysal [3], Moalosi et al[1], Nugraha [9], Lin [10], etc.). On the other hand, in design process, a designer needs to always think about users as one of the important factors in designing. As such, the continuation of this study will investigate further on culture and design from the perspective of the users. This study focused on the association between culture and design with particular interest in Indonesian culture and design. The findings of this study could lay the basis for a more focused study on the perception toward culture and design.

2 Schemata and Cultural Schema Theory

Bartlett defines schema as an organized structure of past knowledge, experiences, and expectations regarding certain aspects of the world in [4]. In other words, schema refers to structures of knowledge that consist of information (objects, events, behavior, images, etc.) and the relationships between each part, which act as references to interpret new information (Axelrod[5], DiMaggio[6]). The content of schema can vary by individual, depending on the individual’s knowledge and experience. Schemata represent knowledge on all levels, from abstract to concrete. The schema concept can be applied to both abstract concepts (e.g., justice and faith) and very concrete things (e.g., visual appearance) [11].

Schema plays an important role in processing the interaction between old knowledge (old information from a generic schema) and new knowledge (episodic input) to make sense of information. It refers to unconscious cognitive structures and processes that guide knowledge and skill, a cognitive shortcut for interpreting and perceiving. The human mind constantly draws partial inferences from incomplete information by fitting new information (episodic input) into the existing schema (generic schema). The cognitive processing of schema is largely unconscious and automatic [6].

Schema theory functions as a bridge between theories of culture and psychology[12]. Culture itself is interdependent with schema since schema formation results from cognitive activity involving interactions with physical and social environments in the culture one belongs to. On a larger scale, above individual schema, there is cultural schema, which works at the social or cultural level. Some similarities across populations in a society can be attributed to cultural schema.

Cultural schema refers to thematized, widely shared schemata, and it is the smallest unit of culture that can be analyzed [6]. Furthermore, cultural schemata are defined as patterns of basic schemata that construct the meaning system of a cultural group[13]. In principle, cultural schema and
individual schema do not differ, except that cultural schemata are shared by certain groups instead of individuals [14]. Cultural schema contributes to cultural bias, stereotypes, and prejudice due to its shared characteristics.

At the individual level, culture is shaped by the internalization of social activity through learning processes. Arguably, internalization and learning processes occur through repeated experience and exposure to cultural elements (e.g., social environment, objects, language, beliefs, values). Repeated experience forms a generic structure in an individual's mind[15] and becomes a subconscious knowledge schema through frequent encoding and retrieval processes[16]. Culture as cognitive attribute in an individual's mind is schemata consisting of various images, behaviors, and information acquired through sociocultural interaction and environments. In turn, the cultural schemata guide the individual perception and behavior.

The “sharedness” of schema is the defining characteristic that categorizes a schema as cultural schema [7] Though not all schemata in one's cognition are cultural, a large part are. In terms of sharedness, schemata could be recognized by three categories: a universal schema is shared across the human population, consisting of innate knowledge (see Figure 1) [16] that develops regardless of culture and experience. Thus, universal schema is the most widely shared. Meanwhile, cultural schema is subject to culture-specific experiences and is thus shared specifically among the members of a cultural group. Individual schema is subject to individual experiences and is thus more detailed and personalized. Conversely, individual schema is highly variable while cultural schema is more general, and universal schema has low variability.

Shore[17] classifies cultural schema into two categories: externalized schema, which is the public representation of schema in the form of cultural artifacts, and internalized schema, which refers to cognitive representations of externalized schema. These two categories constantly interact with and modify each other. This concept is similar to the spatial dimension of culture theory proposed by Siu[18]and Ardila[19] (see Figure 2). However, in Shore's classification of cultural schema, intermediate-level variables are included as externalized schema since they express internalized schema. In the context of cultural schema and its role in design, the spatial dimension of culture theory is more appropriate in consideration of the three levels of design features: visceral, behavioral, and reflective [20].
Cultural schema should not be confused with cultural knowledge. Cultural knowledge is a part of cultural schema that also includes culture-specific perception. The activation of cultural schema is interdependent with the context of the stimuli [21]. The nature of schema is largely unconscious [4] and therefore difficult to investigate.

2 Experiment Method

To further the research in understanding culture and design, an experiment was conducted to understand the association between Indonesian culture and design. The objective of this experiment was to determine whether Indonesian culture has strong association with Indonesian design.

This experiment employed the word association method. Word association is an established method used to assess conceptual structures of beliefs and attitudes as demonstrated by Schmitt [22], DeAndrade et al.,[23]. It is conducted by asking participants to immediately respond to a certain stimulus, and provide verbal or written response to it. The immediate response is regarded as associations closest to the strongest schema as part of cognitive structure. The instant processing of stimuli with its interaction with existing schema is a characteristic of schema processing akin to memory recall. Word association is regarded as a viable method to access mental representations related to the stimuli as stated by Donoghue in [24], and it was used in the study to collect words associated with the stimuli. The shared knowledge, as part of cultural schema, was investigated through the most elicited words that represented similarities in information processing.

Figure 2. Word association for cultural schema investigation experiment concept (A=Association). (Figure from Prameswari et al, [25])

3 Participants

The participants were 88 university students majoring in Product Design. Of the participants, 46 were male and 42 were female. The ages of the participants ranged 17-22 years old (Mean=19.5, SD=1.87). In this experiment, each participant was asked to elicit words associated with the phrases “Indonesian culture” and “Indonesian design”. The participants were given one minute to elicit words they considered associated with the stimuli. The participants were told to elicit as much words as they can think regarding the stimuli association.
4 Result: Word Association of “Indonesian Culture” and “Design” Stimuli

The word association test with the phrase “Indonesian culture” as stimulus yielded a total of 582 elicited words, consisting of 240 different words with 91 repeated words. The repeats ranged from 2 to 36 times. Figure 2 shows the 10 most elicited words associated with “Indonesian culture” stimulus.

In accordance with the cultural schema theory, the most repeated words were considered as the strongest schema that was shared by the majority of the population. The most repeated word was “diverse”, which corresponded with the heterogeneous nature of Indonesia’s demography and diverse culture.

The second stimulus in this experiment was “Indonesian design”. The stimulus generated 511 elicited words, of which 233 were different words. There were 81 repeated words, wherein the repeats ranged from 2 to 17 times. Figure 3 shows the 10 most elicited words associated with the “Indonesian design” stimulus. Based on the elicited words, “traditional” was the strongest word associated with “Indonesian Design”. The word “traditional” itself was also found among the elicited words associated with the phrase “Indonesian culture”. As such, based on the words elicited, there was shared association between “Indonesian culture” and “Indonesian design”.

Figure 3. Most elicited words associated with “Indonesian Culture” stimulus.

Figure 4. Most elicited words associated with “Indonesian Design” stimulus.
Further, the shared association was analyzed by cross-checking the words in both groups for the “Indonesian Culture” and “Indonesian Design” word associations. It was found that between the two groups, there were 67 words that were elicited in both. These words were considered as shared association between “Indonesian Culture” and “Indonesian Design”. While the number of shared association was less than 50% of the number of words in each group, the sum total of frequency was greater in each group compared to other words that were not shared.

The shared association of the variables “Indonesian culture” and “Indonesian design” suggested a relationship between the two. To understand more about the relationship, a regression analysis was conducted. The analysis was conducted with the aid of SPSS.

In this analysis, we aimed to understand the strength of cultural schema that was associated with the variable “Indonesian culture” in perceiving “Indonesian design”. The frequency of word elicitation in each variable was calculated. Furthermore, in the regression analysis the variable “Indonesian culture” acted as predictor, and the variable “Indonesian design” as dependent variable in a linear regression test. The test showed there was a significant effect with p<0.01.

The chart suggests there was linear relationship between the variables “Indonesian culture” and “Indonesian design” (Figure 5). That relationship suggested that the perception regarding Indonesian culture had a significant effect on the perception regarding Indonesian design.

The second regression test was conducted by only tallying the shared elicited words from both groups (suggesting strong relationship, thus stronger cultural schema effect). The analysis results of the shared word frequency in both groups showed that the association between “Indonesian Culture” and “Indonesian Design” was strong (p<0.001). As with the previous regression analysis of “Indonesian Culture” x “Indonesian Design”, the regression plot suggested positive relationship (Figure 6).

By comparing the regression plots of the two tests (all word associations calculated and only shared associations calculated), we saw that the relationship between Indonesian culture and the perception on Indonesian design was stronger on the shared association (Figure 7). A closer look at the data showed that some of the most elicited words (thus stronger schema) in both groups were also shared in both groups. The linear curve suggested positive association, which could be interpreted that the words elicited in high frequency in one group were also likely to have high frequency in the other group. Thus, shared words that were elicited in high frequency were a strong representation of the respondents’ cultural schema regarding Indonesian culture and design.
The analysis of word associations suggested a strong relationship between perceptions on Indonesian culture and design. However, a question arose: in what way could the relationship be analyzed? As mentioned before, in both associations there were similar words elicited. The similar associations (or shared associations) could be analyzed to better understand the relationship. The shared word associations consisted of 68 words. However, the words repeated in frequencies that could be considered as strong cultural schemata as stated by Schmitt [22] were fewer. Moreover, the words should be elicited in both groups with sufficient frequencies.

Table 1. Table of shared words with sufficient frequency for both stimuli.
<table>
<thead>
<tr>
<th>Shared associations</th>
<th>Frequency IC</th>
<th>Frequency ID</th>
</tr>
</thead>
<tbody>
<tr>
<td>batik</td>
<td>16</td>
<td>16</td>
</tr>
<tr>
<td>beautiful</td>
<td>19</td>
<td>5</td>
</tr>
<tr>
<td>culture</td>
<td>8</td>
<td>17</td>
</tr>
<tr>
<td>custom</td>
<td>9</td>
<td>10</td>
</tr>
<tr>
<td>diverse</td>
<td>36</td>
<td>11</td>
</tr>
<tr>
<td>ethnic</td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td>natural</td>
<td>4</td>
<td>10</td>
</tr>
<tr>
<td>particular</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>plenty</td>
<td>13</td>
<td>4</td>
</tr>
<tr>
<td>tradition</td>
<td>8</td>
<td>7</td>
</tr>
<tr>
<td>traditional</td>
<td>15</td>
<td>17</td>
</tr>
<tr>
<td>unique</td>
<td>29</td>
<td>15</td>
</tr>
</tbody>
</table>

The shared words denoted neutral concepts ("beautiful", "diverse", "plenty", "particular", "unique", "natural"), cultural concepts ("culture", "custom", "ethnic", "tradition", "traditional"), and an artifact ("batik"). The shared elicited words (from both respondent groups) with sufficient frequency (at least 5%) were considered schematically strong.

The shared associations suggested that the words could describe the concepts of both Indonesian culture and Indonesian design. As observed, the shared associations suggested that the perception on design was heavily affected by perception on culture. In other words, the perception about Indonesian design is cultural. Thus, it could be inferred that the shared associations with frequencies of more than or equal to 5% of the population of each group represented Indonesian cultural design characteristics.

7 Discussion

This study was conducted to understand how culture affects the perception on design, in this case particularly on Indonesian culture and design. The stimuli acted as episodic inputs in the mental schema processing, while the responses were the results of the processing or instantiated schema (in accordance to schemata processing model by Brewer and Nakamura [15]). However, the concepts that acted as stimuli ("Indonesian Culture" and "Indonesian Design") were familiar concepts, thus the processing is more akin to memory recall. Meanwhile, as the study suggested there were shared knowledge and perception among the respondents, variability in associations also occurred. The variability could be explained by the differences in experiences, backgrounds, ethnicities, references, etc., and variability in individual schema. However, the high amount of sharedness could be contributed to the shared identity as Indonesians. Despite their diverse cultures and ethnicities, Indonesians see themselves as Indonesians first, and then their respective identity, such as ethnicity, religion, social class, status, etc. The word "Indonesia" in both stimuli triggered the cultural schema in the mental processing of the respondents.
The model proposed above attempted to explain the cognitive process involved in the experiment. In the experiment, the stimuli ("Indonesian culture" and "Indonesian design") were processed by recalling the associations stored in the respondents' memory. The memory contains various schemata that could be classified as generic, cultural, and individual. The cognitive process involves the process of identification and evaluation of associations. The result of this process is the rejection and affirmation of associations. In this experiment, the affirmation of association was the associated words. Since this process involved the memory recall from the three schemata categories, the results varied in their degree of sharedness. However, since the word "Indonesian" was part of both stimuli, the shared associations could be classified as part of cultural schema, while the associations not shared among the respondents (recalled by less than 5% of population) were considered as part of individual schema.

The design industry in Indonesia has been blossoming in the last 10 years (Priyatna, D. in Hajihary [27]). Indonesians have started to be exposed to a multitude of design styles largely in the wake of widespread internet usage in the country. However, the development of design itself still derives inspiration from Indonesian cultural roots (Simanjuntak, J. in Hajihary, [27]). While the design styling orientation has shifted to the more contemporary style, culture is still the main selling point of Indonesian design.

As such, the experiment conducted in this study strengthens the understanding of the development of Indonesian design. The experiment suggested that in the particular case of Indonesian respondents, culture posed a strong association to the respondents' perception about Indonesian design. This result parallels the theory of cultural schema, in which culture influences the aspects of life, including the perception regarding a concept.

Furthermore, some of the most elicited words in both groups were also shared (elicited in both groups). In this case, the words “traditional”, “batik”, “unique”, “diverse”, and “custom” were considered the strongest in representing cultural schema and its associations with design. “Traditional”, “unique”, and “diverse” could be interpreted as the characteristics of both Indonesian culture and design, while batik is one of the cultural artifacts most known from Indonesia. Custom refers to the customary way of life in Indonesia, which could include artifacts, behaviors,
and values. On the other hand, the strength of association obtained by the regression analysis suggested a similarity of mental processing among the respondents. Because of this, we deduced that Indonesian respondents’ strongest perception toward Indonesian design pointed more to the traditional design style. As such, the association between Indonesian culture and design was more to the traditional meaning of culture itself. This finding could be linked to the state of the design industry’s development in Indonesia, wherein the traditional sense of culture is interpreted in more contemporary ways.

8 Conclusion

Research in culture and design are abundant. However, they mainly focused on the interpretation of culture to new artifacts or the reinterpretation of cultural artifact to modern design concepts as evident in Nugraha [9] and Lin, [10] etc. It is accepted that culture plays a part in influencing mental processes, and in turn is influencing the perception of, creation of, and behavior regarding artifacts. However, the way culture plays a part is a different, broad field that has not been much explored.

This experiment tried to explore the relationship of culture on the perception regarding design. Utilizing the word association method, it was found that culture does possess strong association on Indonesians’ perception toward design. However, the concepts explored (in form of stimuli: “Indonesian culture” and “Indonesian design”) were general and rather abstract concepts. This was evident in the high number of associations generated. It could be concluded that, in the case study involving Indonesian respondents to examine the effect of Indonesian culture to Indonesian design, the association of culture and the perception regarding design was strong. However, since the stimuli were general concepts, further study should be conducted with more specific concepts to understand more about cultural schemata and design.

9 References


