Evaluation of Conceptual Properties by Layperson in Residential Façade Designs

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Abstract:
When it comes to aesthetic evaluation of a design, architects and non-architects differ from each other. This study demonstrates how aesthetic evaluation of buildings could be predicted. These predictions are important for architects as they can be used to find the users preferences and expectations of the design. Preference is considered to involve conceptual evaluation about whether the design is liked or disliked. In environmental preference, this type of conceptual evaluation might be conscious or unconscious. The aim of this study is to identify the essential conceptual properties that are related to aesthetic evaluation of façade designs using qualitative methodology. As a result it can be concluded that not all the conceptual properties are related to aesthetic evaluation of the design. Some conceptual properties are not important from the eye of non-architects and some are highly important. Findings of this research could help architects to understand the perception of non-architects.
Keywords: Aesthetic evaluation, Conceptual properties, Environmental Perception, Façade design, User preference

1. Introduction
Gifford, et.al, (2002) mentioned that beauty must be experienced not only by architects, but also by non-architects. Nevertheless many contemporary buildings are not pleasant to many laypersons, although apparently the buildings were pleasant to their designers. Evidence reveals that architects' aesthetic evaluations of buildings differ from those of laypersons (Devlin, 1990; Hershberger, 1992; Nasar, 1989; Nasar, 1997; Stamps, 1991). If architects are to create buildings that are pleasurable in the eyes of others, they must know how laypersons recognize and evaluate buildings. Nasar (1988) revealed that architects did not only disagree with laypersons about the aesthetic preference of buildings, but they were unable to predict how laypersons would assess buildings. It seems that many architects do not know, from a lay viewpoint, what a pleasing building looks like. To have more pleasing buildings in the eyes of laypersons, this problem needs study and solutions.

A number of architectural variables or qualities may express symbolic meaning and these include building configuration, spatial configuration, materials, illumination and pigmentation (Lang, 1992). More specifically, Lang (1992) suggested that there are a number of non-physical variables that may also carry architectural symbolism and these include the names of places due to the meaning inherent in the name; places where specific events took place or places designed by particular architects or developers whose body of work and reputation express a degree of meaning.

Progress towards this problem has been made by researchers who have considered building typicality or style as a useful concept (Devlin, et. al, 1989; Purcell and Nasar 1992) or observed that architects and laypersons use different categories in thinking about buildings (Groat, 1982). In addition, Ghomeshi, et. al, (2012) found that when it comes to selecting buildings attribute in residential façade designs, architects and non-architects differ from each other. The results of Jusan (2010a,b) indicated that in order to achieve and maintain sustainability, user participation is essential in home making process. Zinas and Jusan (2012) also stated that housing quality depends on the quality of its finishing.

2. Methodology
The method of analysis used in this study is content analysis. To execute the process, the researcher prepared detailed write-ups for each respondent, categorizing interview questions and answers and examining the data for

within-group similarities and differences.

All the responses were coded to see if there is any similarity of changes in the responses. For example the researcher coded the conceptual properties of the responses to see of there were any similarities among other respondents.

The goal was to interview non-designers and asks them to evaluate ten residential façade design based on their preferences. The respondents were asked to state their reasons for selecting a design.

The conceptual property coding were assembled and adapted from the work of Gifford,et.al,(2002), and Nasar (1994) and Brown and Gifford (2001). The goal was to include a relatively small set of properties that would cover most of the cognitive "field" linked with preference. Nine cognitive properties were selected, and these were presented to the judges.

- Complex (as opposed to simple).
- Friendly, sociable, warm (as opposed to cold, unsociable, unfriendly).
- Rugged, strong, potent (as opposed to delicate, weak, wimpy).
- Unique, original, creative (as opposed to typical, unoriginal, uncreative).
- Clarity, Clear, coherent, unified (as opposed to disorganized, confusing, ambiguous).
- Meaningful, symbolic, expressive (as opposed to meaningless, message less, unexpressive).
- Exciting (as opposed to boring).
- Pleasant (as opposed to unpleasant.
- Relaxing (as opposed to distressing).

3. Respondents

The respondents (N=30) were selected from non-architectural students of Universiti Teknologi Malaysia. Respondents were asked if they had any experience in designing a building (none did).

4. Façade designs

Ten residential 6-7 floor façade designs were selected from a particular architect. The reason that the researcher selected ten façade designs was because the research thought that non-architects would like to make comparative judgments between the facades to evaluate the designs. The façade were selected to ensure that all the conceptual properties fit into the designs at least one time.

5. Results

Table 1 shows the frequency of mention by laypersons. It shows the number of mention by laypersons in terms of "like", "dislike" and "suggest to changes" that they prefer to have on the given façade designs that they have selected. It should be mentioned that the data on conceptual properties of the layperson are derived from the interview and chosen in terms of frequency of mention. With a cut number of five it could be observed that not all the conceptual properties have met the requirement to be accepted as properties that influence the design (Reynolds and Gutman, 1988). The results reveal that only four (out of nine) conceptual properties which are Originality, Complexity, Clarity and Meaningfulness are acceptable. although Ries and Lay (2009), pointed out that negative house design evaluation emerges to be related to its excessive simplicity with lack of diversity and visual richness, and inadequate visual motivation, this research found that having these four conceptual properties (Originality, Complexity, Clarity and Meaningfulness) in the design are vital for laypersons.

5.1 Originality.

Based on table 1, the results show that originality is the most important conceptual property that laypersons have mentioned to like in the designs (N=42). On the other hand laypersons have mentioned sixteen times that the design that they dislike are unoriginal and if they are suppose to make the changes they intend to change the design to be original (N=10).

For example in respondent number one, the respondent mentioned that she likes the designs because of their creativeness and uniqueness. The same respondent dislikes the designs because they were common and not original. When the respondent was asked what she would do if the designer asked her to change the façade? She answered that the design should be more creative.

It could be concluded that in agreement with Gifford, et.al, (2002), originality (defined on the rating form as unique, creative and original) is significantly related to overall aesthetic in laypersons perspective.

5.2 Clarity.

Table 1 reveals that laypersons have mentioned nine times that clarity (coherent, unified) is related to a good overall aesthetic design in façades. On the other hand, the number of mention for disliking the designs (N=4)

have not met the cut off level (N=5) to be accepted. It could be concluded that laypersons have not mentioned that a disorganized design is the reason that they disliked the designs. However, when it comes to changing the design to be an aesthetically preferred design, laypersons have mentioned (N=5) that they would like to change the design to have clarity as a conceptual properties in their designs. For example in case number one the respondent mentioned that he likes the designs that are unified. However when it came to disliking the designs and making the changes on the design, the respondent did not mention anything about clarity. Another example is that, when the interviewer asked a respondent to explain the criteria for selecting designs that looked aesthetically good, the respondent mentioned "one important factor for me is that the overall designs look organized and coherent".

It could be concluded that in contrast with Gifford, et.al, (2002) which revealed that clarity is not a strong conceptual property in laypersons, this study has replicates the previous studies and has identified clarity as an important conceptual property at least when the laypersons are deciding about the overall aesthetic of a façade.

5.3 Complexity.

In this research the researcher has divided complexity into two separate groups (a complex design and a simple design) so the differences could be seen considerably. Based on table 1, the results show that there were only two mentions on complexity as a conceptual property that influences their decision for a good design. On the other hand the respondents have mentioned (N=12) simplicity as an important property for them when selecting a good design. However, when laypersons mention the reasons for disliking the designs, complexity has been mentioned eight times while simplicity has been mentioned five times. On the other hand, simplicity and complexity were mentioned six and five times as an important conceptual property of their designs for "suggest to change" so the design could have an overall good aesthetic design. For example in case number twelve, the respondent has not mentioned complexity or simplicity for the selected design which she likes. However, for the dislike designs, the respondent has mentions that she does not like the designs because they are too complex and when she wanted to make the changes, one of the changes was to make it less complex and simpler.

Furthermore, complexity in the research had a linear relation similar to some of the past findings mentioned earlier (Devlin & Nasar, 1989; Kaplan et al., 1972; Nasar, 1983, 1984). It could be concluded that in agreement with Gifford, et.al, (2002) complexity and simplicity both are significantly related to high overall aesthetic. However, when it comes to liking a façade, complexity is not an appropriate conceptual property for laypersons (laypersons do not like a complex building). An agreement with Rapoport (1977) is that, although laypersons may favor environments with a best possible complexity level, they may still prefer to move though environments of various complexity levels from the least to the most complex.

5.4 Meaningfulness.

Meaningfulness (N=8) has been found as an important conceptual properties in liking the designs (Table 1). On the other hand, there were five times mentioning of disliking the designs because it was meaningless. However, when it came to changing the designs to be a better design they have only mentioned three times that they intend to have a meaningfulness design. For example in respondent number ten the respondent has mentioned liking the designs for their meaningfulness, and disliking the design for their meaningless, but when it came for changing the design it has not mentioned anything about this particular conceptual property. The respondent mentioned that "the good designs are the ones that have a symbolic meaning for you, they will tell you that they are modern and fashion".

It could be concluded that in contrast with Gifford, et.al, (2002) which revealed that meaningfulness is not a strong conceptual property in laypersons, this study has replicates the previous studied and has identified meaningfulness as an important conceptual property at least when the laypersons are deciding about the overall aesthetic of a façade.

6. Conclution

This research demonstrates how laypersons react on conceptual properties of residential façade buildings. The findings of this study provide an opportunity for architects to understand how laypersons judge buildings. It could be concluded that if an architect if to design a building that satisfies not only the architect but the vast majority of the public it should take note that having these four conceptual properties (Originality, meaningfulness, clarity, and complexity) in the design is essential.

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Table 1: Frequency of mention by laypersons

Conceptual Properties	Aesthetic terms		
	Like (frequency of mention)	Dislike (frequency of mention)	Suggest to Change the design (frequency of mention)
Originality	42	(un original) 16	10
Clarity	9	(Disorganized) 4	5
Complexity	2	8	5
Simple	12	5	6
Friendliness	3	3	4
Meaningfulness	8	(meaningless) 5	3
Ruggedness	1	(delicate) 0	0
Exciting	2	(boring) 4	2
Pleasant	4	(Unpleasant) 1	0
Relaxing	0	(Distressing) 0	0

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