Identifying the Different Aesthetic Quality of Building Attributes From Architects Perspective

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ABSTRACT

It seems that many designers do not know, from a non-designer viewpoint, what a pleasant building looks like. If designers are ever to have more pleasant buildings in the eyes of the majority of the residents who are not designers, this problem desires study and explanations which in this study the researcher tries to answer. Part of the solution lies in discovering the physical and cognitive property of the differences in aesthetic criteria in designers. The aim of the present study is to identify objective physical building cues that are connected to aesthetic quality in Architects and the designers of the buildings. The researcher used a quantitative questionnaire to find the values of each building attribute among architects. The results found that building attribute have different values among architects. Some physical cues are very important for architects and some are not so much important.

Keywords: **Aesthetic Quality, Architecture Attributes, Environment Congruence, Façade design, Perception.**

1. INTRODUCTION

Evaluating an environment usually involves making a judgment about whether the environment is liked or not. This type of judgment may be conscious or unconscious and the cognitive procedure normally involves perception of the visual characteristic of an environment and an emotional evaluation of the environment [1, and 2]. In environmental assessment and environmental aesthetics researches, preference is usually corresponded to by the variable like-dislike. The definition of preference for the intention of this study was the amount to which a participant liked or disliked each physical building attributes and the dependent variables linked to preference in like-dislike.

There has been a good verification relating to architects' aesthetic failures [3]. Studies have exposed difference between architects liking and what non-architects likes [4, and 5]. For example in Devlin and Nasar's [4] study which architects and other professionals evaluates 40 houses, it could be seen that architects and other professionals have different tastes of designs, architects like designs that other

professional dislike and vice versa. The difference between design experts and the lays becomes more important for projects in which the client and the user differ, and the designer has little contact with the users.

Architects distinguish physical settings in a different way than non-architects [6]. However, these differences are significant because they can frequently effect in a number of mismatches between designer and lay preferences. Knowing that part of the architect's occupation is to recognize lays perceptions, these differences are not small. Furthermore, Nasar [5] study recommended that not only do architects have different preferences than non-architects, but they do not appear to understand what non-architects likes. Nasar [7] established that when architects were asked to predict what non-architects would find pleasing, they were frequently unable to do so.

This research used questionnaire as the method to identify the differences in architects. Based on literature reviews, 36 architectural elements in nine categories (overall form, wall appearance, wall texture, wall patterns, windows, balcony, amenities, ornaments, and context) were identified. The researcher in this study identified these elements based on previous literature especially Gifford [6] which were called TACS (the architectural coding system). Since Gifford. et.al [8] used these elements to test tall office building with four surfaces, and since this research in concentrating on single surface façade designs, the researcher on this research reduce the amount of the elements from 54 to 36. One of the reasons for this reduction was because some of the physical cues did not fit into this study. For example (number of sides), since in this research the researcher was testing these elements on single surface façade design, this study did not need the answer for this cue. Another change that was made for this study was that in TASC of Gifford [6], the researcher used Stone and brick cladding as one element to be scored by architects. It could be argued that since these elements are an important physical cue in the façade designs, in this research the researcher separated this element to two separate elements to be scored by architects so the researcher could have a clearer look at the selection

of the façade material.

3. RESPONDENTS

The architect or designers (N=200) were selected from students and stuff members of Universiti Teknologi Malaysia at Faculty of Built Environment that had a background of Architecture. The respondents were selected from architecture students year 4 and above at bachelor level, master students, Phd students, and lecturers in architecture.

The goals were to questionnaire designers with these architectural façade elements, and ask the responders to select their ideal single surface façade design based on the physical cues in the questionnaire. The respondents were asked to rate the cues based on a 6 figure Likert scale in format which 0 was for not relevant to 5 that was high important.

4. MEASURE

the physical features of buildings were measured as 36 separate objective elements of the building exteriors such as shape of the windows, the percentage of the façade that was window, balcony, and so on, using an instrument developed by Gifford [6] called The Architectural Coding System (TACS). This system represents an effort to expand a coding system for every distinct exterior physical feature of an architectural arrangement that may influence cognition of architecture. The goal was to ensure that the building feature in questions were a visible physical element of the façade that could be counted or perfectly estimated.

5. RESULTS

5.1. RELIABILITIES

Table 1 shows the internal consistency reliability of this study.

Table 1 Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.810	.805	36

Based on George and Mallery [9] rules of thumb, since .81>.8 these results are "good" for this study.

5.2 ANALYSIS

To make this research more clear and to have a better understanding of the results, the researcher divided one sample T-test results into three main categories which are: significantly high important ($P<0.05$ and $T>0.00$), significantly less important ($P<0.05$ and $T<0.00$) and not relevant ($P>0.05$).

Table 2 demonstrates the results of one sample t-test with significantly high important values ($P<0.00$ and $T>0.00$). It could be observed in table 2 that only 17 out of 36 physical cues that have been tested in this study are agreeable among designers when $T>0.00$.

Based on table 2 which shows one sample t-test, means and standard deviations, the results indicate that these seventeen physical cues are high important for designers and they agree about the values of these cues in the ideal facade. However, for example in Shading, the significance is ($T=21.772$) but in glass cladding the significance is ($T=2.856$) which shows that although both attributes are significantly high important but the value for Shading is higher than glass cladding.

Table 2 One-Sample Statistics P<0.00 and T>0.00

	Mean	Std. D	T	Sig.
Glass cladding	2.71	1.040	2.856	.005
Brick	2.82	1.252	3.557	.000
Color uniformity	2.72	.926	3.282	.001
Articulation	2.84	.964	4.989	.000
Rectangles	2.98	1.002	6.773	.000
Square	2.96	1.029	6.255	.000
Uniformity of Smoothness	3.03	.972	7.715	.000
Material Smoothness	2.90	1.145	4.880	.000
Horizontal Lines	3.13	1.039	8.579	.000
Vertical Lines	3.01	1.063	6.717	.000
Window Size	3.12	1.005	8.722	.000
Vertical or Horizontal Window	2.93	1.209	5.029	.000
Square Window	2.72	1.175	2.588	.010
Rectangular Window	3.12	1.030	8.513	.000
Window to Wall	2.71	.922	3.221	.001
Shading	3.77	.825	21.772	.000
Vegetation	3.41	1.284	9.966	.000

Inspection of table 3 reveals the agreements in designers in disliking the physical cues in residential buildings. Based on table 3 the results reveal that in sixteen physical cues, there are agreements in designers in disliking the cues.

However to go one step further and to have a better understanding of the results, the researcher in this study compared the Means, Standard Deviation and one sample t-test to find the level of similarities between the two groups.

Table 3 One-Sample Statistics P<0.00 and T<0.00

	Mean	Std. D	T	Sig.
Metal cladding	1.68	1.247	-9.298	.000
Concrete	2.22	1.318	-3.058	.003
Reflectance	2.03	1.207	-5.508	.000
Stepped stories	2.14	1.456	-3.496	.001
Triangles	1.07	1.199	-16.924	.000
Polygons	.94	1.210	-18.235	.000
Circles or Ovals	1.41	1.327	-11.673	.000
Sharp Rounded	2.09	1.312	-4.420	.000
Circle Window	.66	.959	-27.144	.000
Abstract Shapes	.81	1.149	-20.799	.000
Balcony Size	2.30	1.026	-2.825	.005
Columns	2.04	1.316	-4.996	.000
Arches	1.37	1.277	-12.573	.000
Sculpture	1.49	1.315	-10.864	.000
Cylindrical Shapes	1.31	1.099	-15.376	.000
Shells	1.68	1.562	-7.424	.000

Based on table 3, the results indicate that although architects dislike these physical cues but there are some differences in values of disliking. For example the results show that "Circle windows" has a strongest dislike (T=-27.144) compared to other physical cues. Based on this result it could be concluded that designers prefer not to have Circle windows in their designs.

Table 4 shows the results of "not revelant" physical cues in this study. Since in this research the T test values in one sample t-test is 2.5, the analysis did not find any significance (P>0.05) for these physical cues. these results reveal the total agreement of having an average amount of the physical cues in the building is acceptable in designers.

Table 4 One-Sample Statistics P>0.00

	Mean	Std. D	T	Sig.
Stone	2.59	1.212	.991	.323
Regular stories	2.42	1.412	-.852	.395
Plainness	2.36	1.018	-1.946	.053

Table 4 reveals that only three physical cues (Stone, Regular Stories, and plainness) are not significant. Although these three physical cues are acceptable as an average amount in the building but as it could be seen in table 4 , based on standard deviation, Plainness have a more concentrated agreement compared other physical cues.

6. CONCLUSION
Researchers have exposed that designers and non-designers often differ about aesthetics of modern buildings. This research demonstrates how architects react on building attributes. In addition finding of this research provides opportunity to the architects to recognize more physical elements which may have valuable involvement in designing single façade especially in the first design stages. Therefore it causes more satisfactory and pleasant facade of buildings in future.
The next step for this research should be to find the most disagreeable physical cues between designers and laypersons.

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