REUBEN PETERS OMALE

FEDERAL UNIVERSITY OF TECHNOLOGY
AKURE, NIGERIA

Evaluation of Aesthetic Perceptions of Public Buildings' Façades by Design Professionals

Abstract

Visual assessments are very relevant in the study of architecture since this is a profession that relies immensely on the visual sense of humans. This study contributes to the understanding of visual perceptions, as well as to the wider field of environment and behaviour studies. The main aim of this study was to evaluate the aesthetic perceptions of public buildings among design professionals with a view towards understanding the mindsets of different design professions towards façade designs. The study considered three types of design professionals: architects, engineers and industrial designers/artists. Two hundred questionnaires were analysed using a mixed methods approach. The variables used in analysing the façades of public buildings were roof design, façade colour, entrance design, fenestration arrangements and innovation in building form. Twelve images of public office buildings in Alagbaka in Akure, Nigeria, were selected for study using random selection and cluster classification methods. A photo-interviewing analysis method was adopted for analysing visual images of the buildings: first-hand visual data were obtained from the study site using digital photographs of each building, and questionnaires were then administered to respondents regarding the images. Data were measured using five-point semantic differential scales, and relevant information obtained through this method was analysed using descriptive statistics, such as frequencies and percentages. Also, inferential statistics using the Kruskal Wallis test was used to determine whether there existed significant differences within the groups of design professionals. Findings from the quantitative analysis showed that there were no significant differences among the groups, although qualitative interview sessions did reveal that while architects and industrial designers/artists exhibit similarities in aesthetic perceptions of public buildings' façade designs, the perceptions of engineers differ slightly. While these results need to be treated, interpreted and considered with care, design professionals can learn from these subtle differences in the results. The views of each design profession are important during a design process as the final outcome of the design is greatly dependent on the collective contributions of individual professions due to their peculiarity.

Introduction

Aesthetic experience has been defined as a subjective pleasurable encounter with objects or settings (Liu and Chuang 2014). While all the human senses are involved in the experience of architecture, the process is primarily visual in nature. Although there are exceptional cases where hearing, smell and tactility are more pronounced than vision (Meiss 1997), it is nevertheless undeniable that non-visual experiences of architecture and the environment are completely different. 'Architecture is image only in a drawing or photograph, but as soon as it is built, it becomes the scene and sometimes the scenario of comings and goings, of gestures, even of a succession of sensations' (Meiss 1997). Reber, Winkielman and Schwarz (1998) conceptualise aesthetic experience as a function of the perceiver's processing dynamics and further affirm that 'the more fluent the perceiver is capable of processing an image, the more positive will be such aesthetic response.' Zhang and Lin (2011) posit that visual elements are capable of directing or commanding attention within the visual field and might also influence perception. Perception can be defined as the experience of an event by means of the human sense organs (Motloch 2001).

During an aesthetic experience, physical stimuli stir up or awaken the senses of the perceiver, leading to a process of aesthetic judgment. Such stimuli could be environmental, building features or within the landscape. Motloch (2001) explains that the senses perceive visual form, colour, light, texture, audible tone, speech, smell, taste, tactile sensations and movements, while the mind processes information from these stimuli into complex perceptions. The mental images formed in the mind are information that helps the designer decipher what aspects of a composition to use in design in order to appeal to the senses of observers – this is the real deal when it comes to designing, and designers ought to understand form and the meanings attributed to such. The study of aesthetics might focus either on extrinsic or on intrinsic factors, or on both. Extrinsic factors include: layouts, relationships, efficiency, function, meaning, suitability for site, and climate. Intrinsic factors, on the other hand, are those relating to visual contents and character (Goldman 2001). This study considered only intrinsic factors in studying aesthetic perceptions through the visual sense. The aim of this study is to evaluate aesthetic perceptions of the façades of public office buildings among design professionals with a view towards determining whether the same perceptual patterns are observed among different design professionals, or whether these patterns differ between groups.

Perception and stimuli

Aesthetic perception is an occurrence of an experience which usually ends in pleasure being elicited in an observer. Perception is usually triggered by external physical settings called stimuli that activate the human senses and bring about images in the minds of observers. The built environment contains and is continuously transmitting non-verbal messages to observers (Uji 1994). However, perceiving and interpreting the physical environment is a complex process involving the interaction of human physiology, development, experience, and cultural sets and values with outside stimuli. In making sense of the visual world, a number of physical characteristics which define objects and their relationships in three-dimensional space are relied upon (Sanoff 1991). Although most physical methods involve a certain degree of personal judgment, there are situations that require the use of human judges to assess features of the visual environment. To be effective, the scales of measurement should refer to the attributes of the environment rather than to subjective experiences. Cuthbert (2006) defines an aesthetically pleasing environment as one that provides pleasurable sensory experiences, a pleasing perceptual structure and pleasurable symbolic associations. Cuthbert posits that there are three different levels of aesthetic perception: sensory perception, cognition and meaning. Personal experience plays a vital role as it helps in processing aesthetic stimuli and developing cognition, thereby creating meaning from the environment, part of which is the built environment.

One of the first steps in perceptual processes involves comparing new information with what the brain has stored up through previous experience as mental images (Smith 2003). Varela, Thompson and Rosch (1999) opine that perception and cognition both have central roles to play in subjective human experience, especially in visual aesthetics.

Subjective quality measurements

Karam, Ebrahimi, Hehami, Pappas, Safranek, Wang and Watson (2009) have observed that traditionally, subjective tests are usually carried out through visual quality assessments that use human subjects to rate subjective perceived visual quality of displayed media according to a provided quality scale. These assessments can be completed either with or without visual media as stimulants. Karam has further set out how numerical scores are assigned to subjective quality metric scales and individual ratings are summed up or pooled in order to produce a single numerical score for each of the rated cases: an average resulting in the mean opinion score (MOS). These subjective metric scales have been proven to reliably predict perceived visual quality. Marchesotti, Perronnin, Larlus and Csurka (2011) posit that the objective of image quality assessment is to create methods that are capable of predicting the image quality of objects or sceneries as perceived by observers.

Different authors have used different methods in assessing aesthetics in objects and sceneries within environment-behaviour studies (EBS). EBS methodologies usually involve an observer or observers making assessments by ordering or ranking displays of interest. Kaplan (1985), as well as Palmer, Schloss and Sammartino (2012), affirm that the average rank order for the displays is taken as a measure of the relative average perception measurements for such displays. Ratings are set by the researcher in discrete measurements, bipolar ratings and/or semantic differential scales (SDS).

Previous assessments of visual perceptions in the built environment

This literature subsection details previous assessments that have been carried out by other researchers on the subject of visual perceptions in the built environment. One study examined visual perception and judgment of urban streetscapes in Australia using a methodology of survey responses and focus group discussion (Gjerde 2008). Two principal factors affecting visual perceptions of urban settings were identified. These were, firstly, stimulation that piqued people's interest and, secondly, a clear sense of order. Gjerde recommended that the study might assist designers and development control authorities in rating the quality of street scenes, which could then inform the design process and boost the visual impacts of projects. In a related study, Castro-Lacouture and Ramkrishnan (2008) evaluated a set of buildings by measuring their building quality using the fuzzy logic method. The results showed how quality in buildings can be quantified, although the methods used for determining quality may affect the outcomes produced. The work of Casakin and Mastandrea (2009), furthermore, involved the study of aesthetic emotions and their relationship with architectural styles. Specifically, they studied university students' perceptions of Renaissance and contemporary styles using a semantic questionnaire containing bipolar rating themes. The findings of the study revealed that Renaissance design style was perceived as more relaxing, simpler, familiar and easy to understand, while contemporary styles were perceived as more interesting and were most liked. Ghomeshi, Nikpour and Jusan (2012), finally, identified the different aesthetic qualities of building attributes as perceived by architects. A quantitative questionnaire was used to determine values for each building attribute, with the results showing that architects attach different levels of value to different building attributes. While they have a strong liking for triangular elements and metal cladding, they strongly dislike circular window designs.

It can be concluded from the foregoing that different evaluation settings are capable of eliciting different outcomes for different visual settings or sceneries in different locations. What matter most in such evaluations are the objects to be evaluated and the subjects making the evaluations.

The present study

As previous studies have consistently pointed out, there has, to date, been little attention devoted to research in environmental aesthetics (Nasar 1983). Omale (2017) has noted the significantly greater number of EBS studies that have been carried out by psychologists (Duffy, Bailey, Beck, and Barker 1986; Delvin and Nasar 1989; Delvin 1990; Purcel and Nasar 1992) than by researchers in core design or professional designers such as architects, engineers and industrial designers. In light of the illustration by previous researchers of the significant differences that exist in aesthetic perceptions and evaluations of the environment and everyday objects between experts and laypeople, the present study sought to determine whether there might also be significant differences between and among different design professionals. Such differences might be expected to arise as a result of variations in the procedures of drafting and visual analysis typical of each design profession. Architects, engineers and industrial designers/artists were selected as subjects for study, and five architectural features/cues were employed as variables. These latter were chosen because of their capacity to excite or stimulate visual aesthetics in observers. They are: roof design, fenestration design, façade colour, entrance design, and innovation in building form. Visual data in the form of digital photographs were used alongside questionnaires for quantitative analysis – also known as photo-interviewing analysis. The study adopted photo elicitations due to the suitability of such materials for measuring sceneries compared to live settings (Leder 2001; Leder et al. 2004; Li and Chen 2011). Among the participants, twenty design professionals were also interviewed so as to gain insights into the meanings involved in aesthetic perceptions.

The following null hypothesis was investigated: "There is no significant difference in the aesthetic perception of visual quality of public office buildings among design professionals."

Method

Study site

This study was carried out in the Alagbaka area of Akure in southwest Nigeria. Figure 1b shows a map of Akure, while Figure 1a offers a closer view of Akure's central area, including the Alagbaka study area. Alagbaka-Akure was selected for the study due to its high number of public office buildings. The area has well-tarred roads, good quality facilities and attractive buildings. It also has a very large number of well-finished private hotels and residential buildings. It is a government reserved area (G.R.A.) that accommodates both government offices and private residences. Thirty-nine public office buildings were sighted within the study area, among which twelve were randomly selected for this study using a cluster classification method. This method involves dividing the area into four concentric clusters and randomly selecting three buildings within each cluster, resulting in a total of twelve building samples (Figure 1a). The buildings within the sample were spread across 16 streets within Alagbaka.

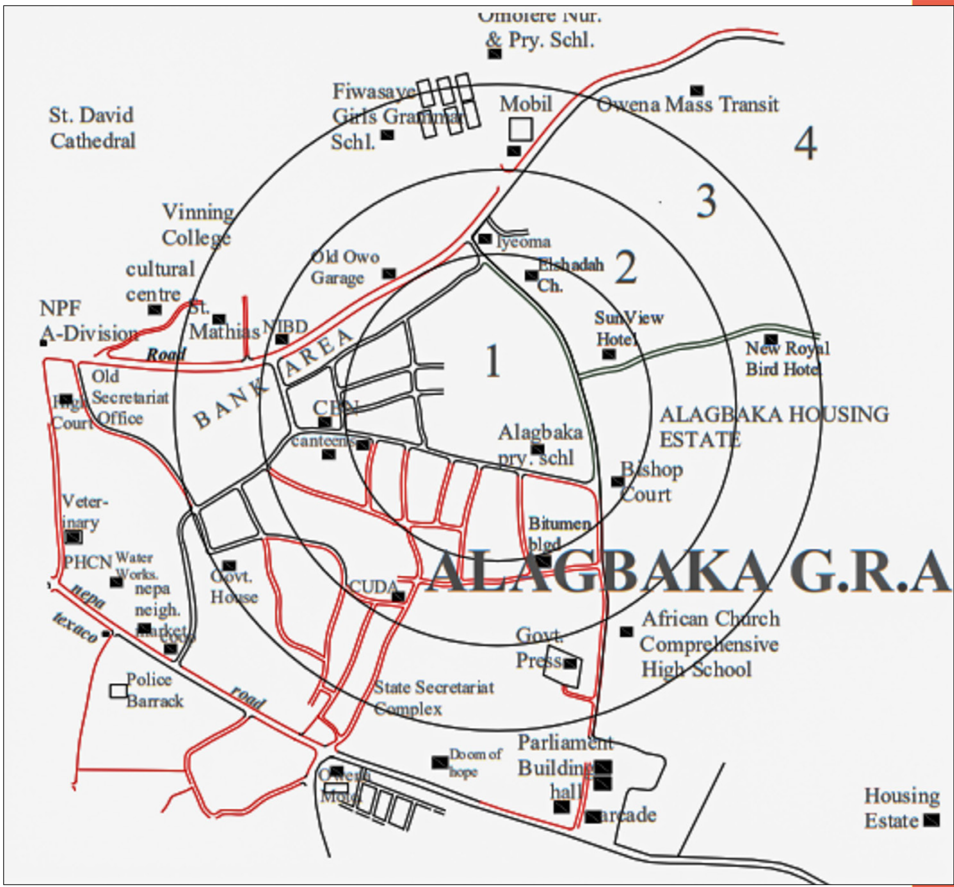

Figure 1a: Extracted map of Alagbaka showing the four concentric zones, various buildings And the areas road networks. Source: Researchers' fieldwork 2016

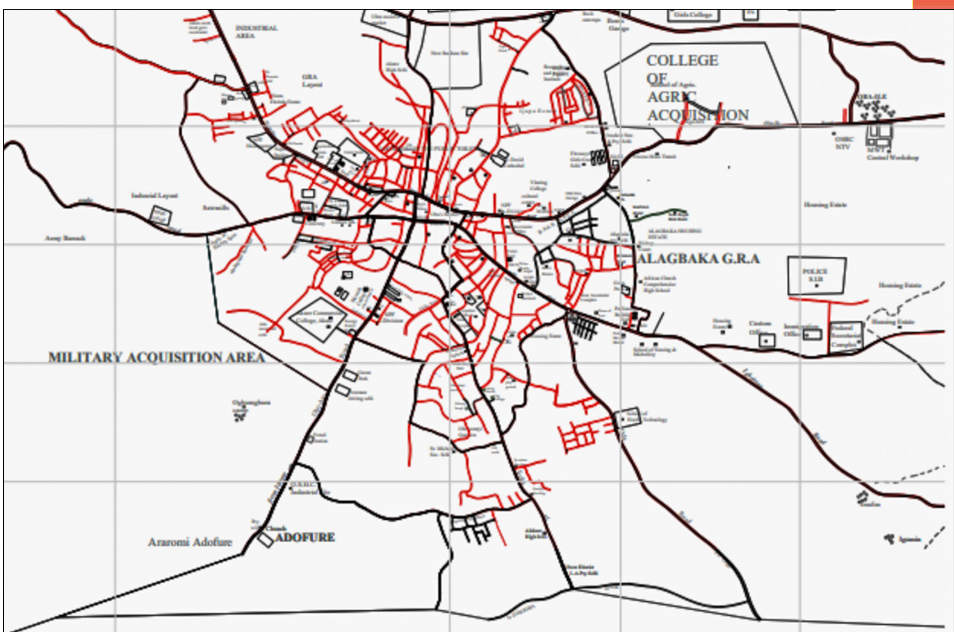

Figure 1b: Map showing Akure road network and the study area of Alagbaka. Source: Ministry of Housing and Urban Development, Akure (2014)

Design

This study adopted a mixed methods approach, employing a combination of survey and observation methods within a questionnaire to collect quantitative data, as well as an interview schedule that was structured to elicit relevant qualitative information from respondents. The purpose of the interviews was to obtain deeper insights into respondents' opinions. In order to stimulate visual interest and elicit aesthetic responses, images of twelve modern public office buildings were captured using a digital camera and the captured images included within the questionnaire. Groat (1988), Nasar (1998) and Stamps (2000) have demonstrated a strong positive correlation between visual assessments made on the basis of 2D representations in photographic form and assessments made through on-site observation, while a negative correlation has been found between the latter and assessments based on original paintings and sculptures (Joshi, Datta, Fedorovskaya, Luong, Wang, and Luo 2011).

Measures

Five architectural features were factored as variables to be assessed by design professionals using semantic differential scales (SDS). Introduced by Osgood et al. (1957), the semantic differential scale or method is an established measurement scale that is commonly used in visual perception assessments (Hanyu 1997; Hanyu 2000; Nasar 1983; Wong and Domroes 2005) and the perception of objects (Himmelfarb 1993). A five-point SDS was adopted for each variable, itself varying according to the variable to be assessed. The SDS for each variable measured are presented below:

Roof design. 1 = not appealing, 2 = least appealing, 3 = undecided, 4 = appealing, and 5 = very appealing

Fenestration arrangement. 1 = no harmony, 2 = less harmony, 3 = undecided, 4 = harmony, and 5 = great harmony

Façade colour. 1 = not attractive, 2 = less attractive, 3 = undecided, 4 = attractive, and 5 = very attractive

Entrance design. 1 = not welcoming, 2 = less welcoming, 3 = undecided, 4 = welcoming, and 5 = very welcoming

Innovation in building form. 1 = not interesting, 2 = less interesting, 3 = undecided, 4 = interesting, and 5 = very interesting. The purpose of this last variable was to verify how interesting innovation was brought into building forms.

A five-point measurement scale was used for all the variables measured so as to maintain consistency in the responses to the questions, speed up completion time, reduce confusion among participants and simplify data entry and analysis on the SPSS. SPSS version 19 was used for data analysis within this study.

Participants

Design professionals were the target group for this study. This group comprises architects, engineers and industrial designers, as well as artists. Since previous studies have shown a divergence between the opinions of experts and those of laypeople, the present study opted to collect expert opinions only. Design professionals were contacted through their respective professional bodies (these were the Nigerian Institute of Architects [NIA], the Nigerian Society of Engineers [NSE] and the Society of Nigerian Artists [SNA]) using individual email addresses provided by the professional bodies. For this study, 225 participants were contacted. A total of 200 adequately-completed questionnaires were returned and used for analysis. This represents a 88.9% return rate, which is high and appears to indicate a positive response. A total of 20 respondents were administered questionnaires for an initial pilot study, and the results from this study were similar to those obtained through the full-scale study. This is an indication of the reliability and consistency of the instrument used. Twenty participants (comprising seven architects, seven engineers and six industrial designers/artists) were also interviewed through face-to-face interview sessions, with the questions asked focused on eliciting the meanings behind participants' choices.

Results

Demographic characteristics of participants

The participants in the study consisted of 168 males and 32 females (N=200), aged between 21 and 60 years. The higher proportion of male (84%) compared to female (16%) respondents suggests that this is a male-dominated profession. Forty-eight per cent of participants were architects, 29% were engineers, and 23% were industrial designers/artists. The highest academic qualification reported by 74% of respondents was a Master's degree, while 17% had PhD degrees, and 8.5% had a Bachelor's degree only. This suggests that respondents were knowledgeable on the subject of aesthetics in design. The economic status of respondents showed that design professionals are financially buoyant, with 86.5% earning over 100,000 NGN per month.

Perceptions of visual aesthetic quality among design professionals

Participants assessed five variables of visual aesthetic quality by looking at images of twelve buildings. The variables assessed were: roof design, entrance design, fenestration design, façade colour, and innovation in building form. Calculated mean scores were very useful for making within-data comparisons. However, stronger comparisons could be achieved using percentage scores for each variable within the 12 building images. Joshi et al. (2011) posit that when a photographic scene is rated by observers on a merit scale on the basis of its aesthetic qualities, the average score can be thought of as an estimator for its intrinsic aesthetic quality. This view is further supported by Karam et al. (2009) and Marchesotti et al. (2011). Palmer et al. (2012) develop this, affirming that the average rank order for such displays can be taken as a measure of the average perception measurement. These four positions form the basis for the perception measurements and perceived averages shown in Table 1, where a descriptive summary of responses is presented. This shows the average median distributions of participants' perceptions of roof design, fenestration design, façade colour, entrance design and innovation in building form for each of the 12 buildings.

Table 1: Average median distributions of perceptions of the five variables for each of the 12 building images assessed, and overall rankings.

Building Image	Roof Mean	Design Rank	Fenes. Mean	Design Rank	Façade Mean	Colour Rank	Entrance Mean	Design Rank	Inn.in Mean	Form Rank	*Overall Average*	Overall Rank
Building 1	2.44	11	3.46	8	3.14	8	2.73	10	2.11	11	*2.78*	**11**
Building 2	4.45	1	3.85	4	3.85	3	3.08	7	4.36	2	*3.92*	**2**
Building 3	3.01	8	2.75	12	2.98	10	3.19	6	2.53	9	*2.89*	**9**
Building 4	2.61	10	3.49	6	2.67	11	3.00	8	2.29	10	*2.81*	**10**
Building 5	3.20	7	3.21	11	3.25	7	3.80	2	3.02	7	*3.30*	**7**
Building 6	3.45	5	3.69	5	3.51	6	3.76	3	3.53	4	*3.59*	**4**
Building 7	3.21	6	3.22	10	3.52	5	3.48	5	3.22	6	*3.33*	**6**
Building 8	2.68	9	3.48	7	3.14	8	2.48	11	2.72	8	*3.00*	**8**
Building 9	2.05	12	3.25	9	1.95	12	1.96	12	2.08	12	*2.56*	**12**
Building10	3.63	4	3.98	3	3.61	4	2.91	9	3.46	5	*3.52*	**5**
Building11	3.74	3	4.28	1	4.01	2	3.49	4	3.96	3	*3.90*	**3**
Building12	3.83	2	4.01	2	4.06	1	4.18	1	4.49	1	*4.11*	**1**
Average	**3.19**		**3.56**		**3.31**		**3.17**		**3.15**		**3.31**	

From the averages of the mean values shown in Table 2, it can be deduced that fenestration design, with a score of 3.56, was the most important variable in terms of participants' perceptions of aesthetic quality. Façade colour ranks 2nd (3.31). Roof design ranks third, with an average score of 3.19. Entrance design ranks 4th among the five variables studied, with an average of 3.17; and innovation in building form ranks 5th (3.15). A total average of 3.28 for all the five variables means that fenestration design (3.56) and façade colour (3.31) both rank above the average score (3.28). These results offer a clear indication that roof design, entrance design and innovation in building form have low perception scores among design professionals.

Table 2. Summary of total average rankings for building features.

Building Feature	Average Score	Rank
Roof design	3.19	3rd
Fenestration design	3.56	1st
Façade colour	3.31	2nd
Entrance design	3.17	4th
Innovation in building form	3.15	5th

Statistical analysis of hypothesis

A Kruskal Wallis test was employed in analysing the study's hypothesis so as to verify whether there existed significant differences in the perceptions of visual aesthetic quality of public office buildings among design professionals. The distributions are reported in Table 3 for the null hypothesis. The test was carried out at an alpha level of 95% confidence and 0.05 significance.

Table 3. Result from Kruskal Wallis test.

N	Grand Median	df	Test Statistics	Asymptotic Sig. (2-sided Test)	Decision
200	3.546	2	67.028	0.487	Accept null hypothesis

Note: Significance level is 0.05.

An asymptotic significance value of 0.487 is higher than the accepted 0.05 significance level, meaning that no significant difference was found in design professionals' perceptions of visual aesthetic quality in public office buildings. Therefore, the null hypothesis is accepted, while the alternative hypothesis is rejected. This result indicates that there are no significant differences in the manner in which design professionals perceive visual aesthetic quality in public office buildings.

These quantitative findings, however, are complemented by qualitative results obtained through face-to-face interviews with 20 of the study's respondents. Participants in the interview sessions were asked what visual aesthetics in buildings meant to them based on their individual experiences and their particular professional practice. Responses to the question "*What does visual aesthetics in buildings mean to you as a designer, especially in your discipline?*" reveal that for architects, perception of visual aesthetics in buildings means "*features of the façades of buildings that are unique and exciting.*" For industrial designers and artists, such perception focuses on "*features of objects that are pleasing to the senses*", while for engineers, the emphasis in perception is on "*structures that appear sturdy and safe.*" However, most of the engineers (67%) opined that even sturdy appearance may not necessarily amount to the depiction of beauty and that there were other relevant factors to be considered, such as the nature of the materials, preparation of mix and technical knowhow. From the qualitative interviews conducted, perception of visual aesthetics appears to be a complex phenomenon among engineers, whereas architects and industrial designers/artists attach similar meanings to it. Combining the responses of architects and industrial designers/artists together, they appear to suggest that "*the perception of visual aesthetics in buildings has to do with building features that are unique, exciting and please the senses.*" This definition seems close to that offered by Moshagen and Thielsch (2010), and to that suggested by Tractinsky and Eytam (2012), which latter states that "aesthetics is the property of an object that produces a pleasurable experience in observers."

During the interviews, respondents were asked: *"What building features constitutes beauty on a building's façade as it relates to your profession?"* Results, based on responses, show that, for architects, three features constitute this beauty. These are: *roof design*, *façade colour* and *innovation in building form.* However, while over 54% of architects are of the opinion that roof designs in public office buildings should be kept simple rather than pronounced or exciting, and should even be hidden using parapet walls, the other 46% are of a contrary opinion, emphasising that roofs should be prominent and expressive, and not simple or hidden. For industrial designers/artists, *façade colour* and *façade treatment* featured prominently in the responses received, while for engineers, beauty in buildings has to do with the *"presence and arrangement of columns, pillars and beams."* The responses show that architects and industrial designers tend to have similar preferences in relation to the elements that constitute beauty in buildings, whereas those of their engineering counterparts differ somewhat. The prominence of façade colour in appreciations of beauty appears to be common among both architects and industrial designers/artists.

In comparing both quantitative and qualitative results from the study, it can be deduced that differences really do exist among design professionals' perceptions of building features, as becomes clear in the results of the qualitative analysis.

Discussion

The average scores and rankings of architectural features displayed in Tables 2 and 3 illustrate that both objective and subjective assessments of visual quality are possible in the evaluation of building facades. This study has also demonstrated the ways in which designers use architectural features or elements to appeal to observers' perceptual senses, which supports Motloch's (2001) position that "designers are sensitive to visual language of communication and use the forces inherent in its basic vocabulary such as points, lines, forms, colours, and textures to convey perceptual and associational meanings because they are concerned with physical characteristics of the environment". The organisation of this visual language of communication into perceptual combinations helps in bringing about associations and meanings in the minds of observers, which are then reflected in their responses.

This study found that among the five variables studied, innovation in building form and façade colour appear to exert the most substantial effects on the visual perceptions of observers, as can be seen through comparing the scores of the top three highest-ranked buildings (Buildings 12, 2 and 11). However, façade colour was more highly rated compared to innovation in building form, which scored lowest among all five building features in participants' perceptions of visual aesthetic quality. This suggests that architects should pay more attention to this variable when designing public office buildings, and supports Canter's (1969) findings on the importance of innovation and pushing architectural boundaries.

Findings from this study further reveal that design professionals, especially architects, have performed averagely in terms of rating the visual quality of their designs through the building images that were studied. This was exemplified through their use of fenestration designs and façade color as the pilot study earlier carried out corroborates this fact. The average mean values are also an indication that design professionals have performed averagely in their overall assessments of public office building designs. In summarising both numerical and textual data, it can be deduced that differences exist among all the three design professions' perceptions of visual aesthetic quality in public office buildings. This finding supports Meiss' (1997) contention that the principles of perception can be applied to architecture and the graphic arts as they all originate from empirical experiments on vision. It also affirms Gann et al.'s (2003) argument that discrepancies may arise in perceptions of quality between, and also among, experts, clients, contractors, and designers. In this case, there appear to be discrepancies in the manner design professionals perceive aesthetic quality in public office buildings' façade designs.

As Weber (2015) explains: "the differences lie in the background of experiences gained over the years of design education, professional experiences and socializations, leading to differences in professional cognitive states."

Conclusion

This study has attempted to use a mixed methods approach to evaluate perceptions of visual aesthetic quality among design professionals. It has been shown that façade colour and innovation in building form are two architectural features that elicit visual aesthetic perceptions in observers of public office building façades. However, while façade colour was consistently rated highly by participants, innovation in building form was the least-perceived architectural feature. It nevertheless stands out as a highly-rated feature in each of the three highest-rated façades. In designing the façades of public office buildings, design professionals are therefore urged to balance innovation in building form with continued use of aesthetically pleasing colours. The importance attached by designers to fenestration arrangements, furthermore, highlights opportunities to include large, symmetrical, low-energy windows in tropical designs: hence sustainable office designs. Meanwhile, entrance designs stand in need of improvement to make them more welcoming, both for users and to observers. Roof designs, finally, achieved average scores and may need to be stepped up so as to increase their visual impact, though architects remain divided on what kinds of roof designs are most suitable for public office buildings.

This study has highlighted similarities in the aesthetic perceptions of architects and industrial designers/artists, whereas more significant differences of perception exist between these and their engineering peers. This is in line with the findings of a study by Gifford et al. (2000) that attributes differences in professionals' perceptions to their different trainings and background experiences. The similarities in aesthetic perceptions identified among architects and industrial designers/artists can be attributed to similarities in design education (Omale and Ogunmakinde 2018) Members of both professions encounter similar elements and principles of design throughout their study and practice and come to visualise building façades as exhibits and building features as elements of design. Future studies might profitably examine the aesthetic perceptions of other stakeholders in the construction industry, including builders, estate surveyors, clients and contractors.

The visual quality of public office buildings in the study area can be made better as there is room for improvement. Most times when carrying out quantitative and qualitative analyses, one usually corroborates or emphasizes the other. However, when the results are in opposite directions, it shows that more attention is required in the details of the findings.

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APPENDIX 1. Building images in study sample

Building image 1

Building image 2

Building image 3

Building image 4


Building image 5


Building image 6

Building image 7

Building image 8

Building image 9

Building image 10

Building image 11

Building image 12