

Assessment of Architects "Awareness" and "Knowledge" of Islamic Design Criteria with Respect to Residential House Design

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Abstract

The Islamic Design Criteria (IDC) are key design principles abstracted from the Islamic legal frame work by qualified Islamic scholars and Jurists used as guide in the design of residential house and other building types. The aim of this paper is to assess IDC awareness and knowledge of architects that affect residential house design with specific focus on provision of family privacy, promotion of worship activities and facilitation of observance of Islamic etiquettes. A cross-sectional survey was essentially used in this qualitative method in which questionnaire was used as the key data collection instrument. During the course of the survey, a total of 40 architects were given the questionnaire to fill out of which 32 representing 80% of the distributed questionnaires were retrieved and used for the analysis. Findings on demographics characteristics of respondents reveals that majority 20(87%) were male and 4(13%) were female architects respectively and that majority of all respondents (59.4%) were educators and the least (12.5%) were architectural practitioners. Whereas the overall result indicates "moderate" awareness (40.3%) and high knowledge (37.2%) of IDC among respondents, the greater majority of had "very high" awareness (37%) and knowledge (43.8) of the IDC that affect privacy provision (Pr-VT). The analysis results also indicate that "privacy provision against the outside world" with awareness index of 0.93 and knowledge index of 0.637 was the IDC that contributed most to the awareness level and knowledge base of architects on IDC. In line with this finding therefore, it can be concluded that almost all respondents were not only aware of this IDC that affect privacy but were also highly knowledgeable about them. By implication therefore, awareness and knowledge of IDC among architects can further assist in developing additional design competencies towards addressing client's requirements in residential house design.

Keywords: Architect, Awareness, House, Design, Islamic Design Criteria, Knowledge, Residential House

INTRODUCTION

This paper emanated pursuant to the widely reported lack of applying Islamic design criteria (IDC) in architectural designs of building types among architects especially on residential house design (Gelani, 1996; Abu-Ghazze, 1996; 1994 Hamza, 2017; 2018; Al-Hathloul, 1981). This

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reported gap in the application of IDC could partly, be linked to inadequate awareness and knowledge of IDC which are key requisites to addressing client's requirements (Kabiru, 2011). The term IDC has variously been interchanged with other terms such as Islamic design principles IDP (Hamza & Sani-Katsina 2018) and Design Criteria from Islamic perspective (Abdurrahim, 2008) among others. Contextually, the IDC as conceived within the context of the built environment are largely considered as architectural and planning standards that emerged based upon the translations of principal sources of *Sharia* i.e. *Quran* and *Sunnah* by qualified Muslim Jurists (Hamza & Sani-Katsina, 2017) applicable in managing existing built environment and in designing new ones. Interesting operational meanings were provided by some of these scholars. For example, whereas Mortada (2004) defined them as criteria against which the planning and designs of modern physical environment could be tested and utilized in determining a satisfactory environment for the Muslim faithful, Hakim (1986) contextualized IDC as the outcomes of mechanisms used in interpreting and applying the value system of Islamic legal system referred to as *Fiqh*, in buildings and urban development processes. In the context of this paper, however, the operational definition offered by Hamza & Sani-Katsina (2018) as "general guides in the context of the Islamic legal system (*Sharia*) abstracted for application in the management of the existing Muslim built environment and which could be used for the designing new buildings" shall be adopted.

Scholars approached the subject of IDC from different perspectives. For example, Mortada (2004), focused on expanding the meaning and interpretation of IDC to non-Muslims, Abdurrahim (2008) however, carried out assessment of conformity of architectural designs of different building types to IDC in selected buildings owned or designed by Muslim faithful's, yet others focused on how the IDC could directly be applied in contemporary building types in various building types (Maharika, 2017). Many benefits are derivable through outcomes of evaluating the awareness and knowledge of IDC among architectural practitioners. These include professional development in the use of IDC and promotion of moral responsibility in design service delivery. It will also help to develop design competencies to satisfy client's spirituality values in housing design. This paper therefore aims to assess the awareness and knowledge of architectural practitioners in the use of IDC.

Awareness" and "knowledge" have over the years been used among scholars to provide contexts and understanding in many disciplines. In the area of medicine, for example, recent studies measured the awareness levels of risks associated with breast cancer among women (Jaya, Jin, Donatus, Ekwueme & White, 2020) and mother's awareness on feeding and resultant impact on growth and development (Parakrama, Thanuja & Rahini, 2019). Similarly, in the area of education, awareness levels on the use of Vitamin D was assessed among pharmacy students (Diana, Souheil & Pascale, 2017) as well as respiratory syndrome among medical students (Ahmad & Agha, 2017) of Saudi Arabian students. In architectural discipline, however, the awareness level of young architects on the potentialities offered by photovoltaic systems (Mohd, Embok, Eka & Malsiah, 2013) as well as architect's awareness with respect to the adoption of building envelope systems (Adedotun *et al*, 2018) were also assessed. In this paper, the operational definitions of awareness and knowledge provided by WHO (2001), is adopted due to the comprehensive meaning they offer. The document defines "awareness" as "having

heard of a subject under investigation while "having some understanding of the subject under investigation" was similarly considered as "knowledge" (Dandona, Dandona, John, McCarty & Rao, in WHO Report, 2001).

According to Altman & Chemers (1984), privacy provision refers to situations (in a physical context, thus) where human population attempt to either be open or close with themselves, and or avoid physical contact with each other and thereby creating physical distance to others at certain occasions and times. On the other hand, Fahey (1995) as cited in Mortada (2004) defined privacy as a boundary for gender segregation and separation between private and public life. Outcomes of volume of researches carried out by scholars across disciplines lead to a conclusion that privacy is a universal need and requirement across cultures (Altman, Vinsel & Brown, 1981: Altman, 1975 Fahey, 1995). Some of the IDC that affected privacy provision and which were abstracted from the first and second Sharia sources (*Quran* and *Hadith*) as referenced by Hakim (1986) include *Quran* (29:13, 30:14, 31:15, and 32:16). Similarly, Mortada (2004) cited *Quran* (24:27-28, 33:59) and *Hadith* (Quoted from Al-Qaradawi who also referenced in Imam Muslim) among many others. While Abdurrahim (2008) cited two *Hadiths* from the works of Al-Hathloul (1981) that affected privacy provision in housing neighborhood, Omer (2005) went further to identify forty-one (41) Verses from the *Quran* which addressed general issues in the built environment many of which affect privacy provision. From the architectural viewpoint, a more comprehensive taxonomy of IDC that affect different levels of privacy in residential houses was provided by Hamza & Sani-Katsina (2018). The authors abstracted the IDC's that could be applied in addressing visual, acoustic and olfactory privacy types. In addressing the visual privacy type for example, they referred to *Quran* (24:27, 30: 33:53 & 55) and *Hadiths* (Sahih Bukhari: Volume 8, Book 74 (Asking Permission), Number 258 (Sahl Bn Sad) Sahih Bukhari: Volume 8, Book 74 (Asking Permission), Number 260 (Anas Bn Malik). Similarly, to address acoustical and olfactory privacy design considerations, they referred to *Quran* (49:4& 5: 33:32 & 33) the *Hadith* of Sahih Bukhari: Volume 8, Book 74 (Asking Permission), Number 305 (Abdullah) as well as *Hadith* in *Sahih Muslim*: Chapter 40, Book 32. Number 6357 (Benevolent treatment towards the neighbor) respectively.

On the promotion of worship activities in the house, Altman (1977) has over forty years ago established the relationship between house occupants and display of their cultural values and reproduction of religious belief system. Operationally, the online Cambridge dictionary (2020) provided a general definition of the word "worship" as the tendency of one "to have or show a strong feeling of respect and admiration for God or a god". Among the numerous *Hadith* cited by scholars that could serve as guide in design of house as place of worship include one narrated in *Sahih Muslim Hadith* No. 778, which submits that performing voluntary prayers in the house after obligatory in the mosque attracts goodness and another which indicates a higher reward for offering non-obligatory prayer in the house (by men) than in the mosque as narrated from Ibn 'Umar in two *Hadiths* (Sahih Bukhari Vol. 1, Book 8. No 424 and Muslim, 777). Omer (2004) quoted a *Hadith* in which the prophet was reported to have directed his companions to dedicate a space for the observance of prayer (see *Hadith* of *Al-Tirmidhi, Sunnan al-Tirmidhi, Kitab al-jumah, Hadith* N. 542) and also to be constant in reciting the *Quran* in the house (*Muslim, Sahih Muslim Kitab Salah al-Musafirin wa Qasruha, Hadith* No. 1300). Within the confine of a

house, prayer types that could be observed were identified in the works of Hamza & Sani-Katsina (2018) include both obligatory (*Fard*) for females, (for *Fard* prayer males were expected in the mosque), and non-obligatory (*Nawafil*) for both male and females in the house including the Night prayer (*Tahajjud*), Post night prayer (*Wutiri*) Sunrise prayer (*Adduhaa*), Pre-obligatory (*Rawatib Qabliyya*) and post obligatory (*Rawatib Badiyya*). The architectural spaces in the house in which could be performed include bedroom, living room and courtyards.

The observance of recommended Islamic etiquettes in the house refer the way and manner residents in houses use and interact with spaces and elements of design in response to the *Shariah* injunctions with the hope of achieving good deeds. Thus, the IDC that relates to etiquettes in the use of spaces as highlighted by qualified scholars include those that affect the use of toilet, sleeping posture on the bed (which beds orientation to *Qibla* direction), entrance and exit behavior in spaces such as bedrooms and toilets. The recommended Islamic etiquettes from IDC that affect the use of toilet as an architectural space as reported by Hamza & Sani-Katsina (2018) were presented at three level: before, during and after its use. before the use at point of entrance prayer is required (*Sahih Muslim Hadith* No. 375; *Sahih Bukhari Hadith Al-Bukhari* Book 1: *Hadith* No. 45,) and to use left foot in accessing the toilet (*Sunaan Abu Dawud*, Book 1, *Hadith* No. 0006). Offered prayer after the use of toilet (*Sunan Abu Dawud*, Book 1; *Hadith* No. 30) and to use right foot to exit (apparently deduced from *Sunan Abu Dawud*, Book 1; *Hadith* No. 30). There are other IDCs which applies during the use of the toilet such as facing directions other than the *Qibla* (*Sahih Muslim*, Book 2. *Hadith* No. 0504 although this is permissible according to Imam Shafi'i as cited in Wan & Ahmad 2006), leaning on left leg as well as the use of left hand for cleansing after call of nature (Narrated by Muslim, Book of al-Tahaarah, *Hadith* No. 392). Similarly, there exist IDC on the sleeping posture. For example, two *Hadiths* of *Sunann Muslim Hadith* Nos. 2710; 2713 recommend one to go to sleep, putting right hand under his cheek and facing *Qibla* direction. Access to functional spaces other than the toilet is encouraged using right foot and to exit using the left (deduced from the actions of the prophet whereby he starts his affairs for washing and wearing of shoes as supported by *Hadith* in *Sahih Bukhari* Vol. 1 P. 61. Finally, the IDC that prohibits the use of sculpture for worship in houses include *Quran Sura Al-Hajj* 22: *Verse* 30) and *Hadith* in which the Prophet was reported to have said that "the angels do not enter a house in which there are pictures." (see *Sahih al-Bukhari*). In this paper, the awareness and knowledge of IDCs among architects in terms of the promotion of privacy, worship activities and facilitation of observance of Islamic etiquettes through interaction with spaces and elements shall be assessed.

To achieve the aim of this study, three objectives were set as stated below:

1. to explain from the understanding of scholars the Islamic design criteria (IDC) that relates to buildings in general and architectural design of a residential house in particular
2. to assess the awareness of architects with respect to IDC which affect privacy provision, promotion of worship activities and facilitate the observance of recommended Islamic etiquettes.

3. to assess the knowledge of architects with respect to IDC which affect privacy provision, promotion of worship activities and facilitate the observance of recommended Islamic etiquettes

METHODOLOGY

Survey method and sample selection

This paper adopted a cross-sectional survey of only registered architects in Nigeria were used as respondents. A questionnaire was used as the key data collection instrument. The questionnaire as data collection method has over the years been accepted in assessment of awareness and knowledge of a subject matter among population (see the works of Siagian & Halisitijayani, 2015; Yong, Chien, & Lim, 2019). In this survey, a total of 40 architects participated which was conducted within the first quota of year 2020. The questionnaire was initially distributed by hand to respondents to their offices/sites and the filled questionnaire were collected at a later date. However, due to the global lockdown as a result of Corona virus pandemic (COVID-19) characterized by movement restrictions and closures of businesses soft copy of the questionnaire was sent through internet to respondents which they filled and sent back. Out of this number, 32 filled the questionnaire representing 80%. In distributing the questionnaire, purposive selection of cities with high concentration of architects within the sampling area were selected. Thus, cities of Kano, Kaduna and Zaria were chosen to select respondents. The architects that served as respondents were selected from both academic (educator-architects), in full practice (practitioner-architects) and those who both practice and teach (educator-practitioner-architects) in schools of architecture. All respondents were deemed to have full and updated registration with the Architects registration council of Nigeria (ARCON), the statutory body responsible for the regulation of practice of architecture in Nigeria.

Data collection Instrument used

The first part of the questionnaire (A) captured the demographic characteristics of the respondents that include questions on age (range), gender, attained educational level, registerable status with ARCON, employment status (academia, in practice or both), years of experience and number of houses designed for Muslim faithful. The second part of the questionnaire (B), was developed such that awareness of IDC was assessed by asking respondents whether they ever heard of IDC. Respondents who answered 'yes' were considered to be aware of IDC, however, those who answered 'no' were considered to be totally unaware of IDC. Moreover, respondents that answered "yes" were asked to indicate the sources of how they got this awareness from the list of options provided in the questionnaire. To establish the awareness level, respondents were further asked to rate their awareness levels using the Likert scale option of between 1-5 (5-Highly Aware, 4-Aware, 3-Moderate Awareness, 2-Low Awareness, 1-Very Low Awareness). Similarly, the questionnaire assessed respondent's knowledge of IDC by first asking if they had some level of understanding of IDC. Those that responded "yes" as the option in the questionnaire were considered as knowledgeable. Thus, they were asked to indicate the sources of knowledge from the options provided in the questionnaire. To further establish respondents level of knowledge they were asked in the

questionnaire to indicate the level of understanding from the options set in a Likert scale calibrated from 1-5, with 1-indicating very low knowledge/understanding and 5-indicates very high knowledge/understanding.

Method of Data Analysis

Analysis was carried out on the demographic characteristics using simple descriptive statistics available in excel and spss soft wares. They were used to summarize and describe demographic attributes of respondents as well as the informations derived from respondents on awareness and knowledge of IDC using Tables, Figures, Bar and Pie Charts. To measure the extent of the respondent’s awareness (a) and knowledge (kn), a mathematical formula was used as shown below. The formulae which has been used previously in similar studies (Adedotunet *al.*, 2018) establishes relationship between Mean value (Q) of respondents scores based on Likert scale as used in the questionnaire summation of frequency of occurrence (choices of respondents between 1-5 in questionnaire) divided by Number of occurrences N(number of respondents). Overall, the average score (average scores which accrued from respondents scores) is taken as 3, hence, the respondents scores are classified into percentage score-groups; 20-39% very low, 40-59%, low, 60-79% moderate and 80-100% high score-group, this is in cognizance of the score of 60% as a mean score on the Likert scale in the analysis since the maximum is taken as 5 while the minimum score is taken as 1.

$$1.....Q = \frac{Efx}{N}.....(a) \qquad 2.....Q = \frac{Efx}{N}.....(Kn)$$

Similarly, to obtain the awareness index (ai) and Knowledge index (kni) of each IDC under privacy, worship and observance of Islamic etiquettes, the summation (total scores) of each variable given by all respondents were added up and then divided by the number of respondents as shown in the formulaes below. The resultant values obtained is the *ai* and *kni* respectively. The resultant values describe the level of importance any one of the key variables under IDC played in respondent’s awareness and knowledge respectively. In the formulae as shown below SWV is the total values obtained from each respondents while N is the total number of respondents.

$$1.....Index (I) = \frac{SWV}{N} (ai)..... \qquad 2 Index (I) = \frac{SWV}{N} (kni).$$

RESULT AND DISCUSSION

A total of forty (40) respondents were given the questionnaire to fill, out of which thirty-two (32) responded. As shown in Figure 1, of these respondents, 20(87%) were male and 4(13%) were female architects respectively. Figures 2 showed that majority of all respondents (59.4%) were educators (academic staff in schools of Architecture within the study area) and the least (12.5%) were full architectural practitioners, while Figure 3 indicated that majority of the architects that served as respondents were located in Zaria (46.9%) followed by respondents whose practice offices or the institutions where they teach were based in Kano (34.4%).

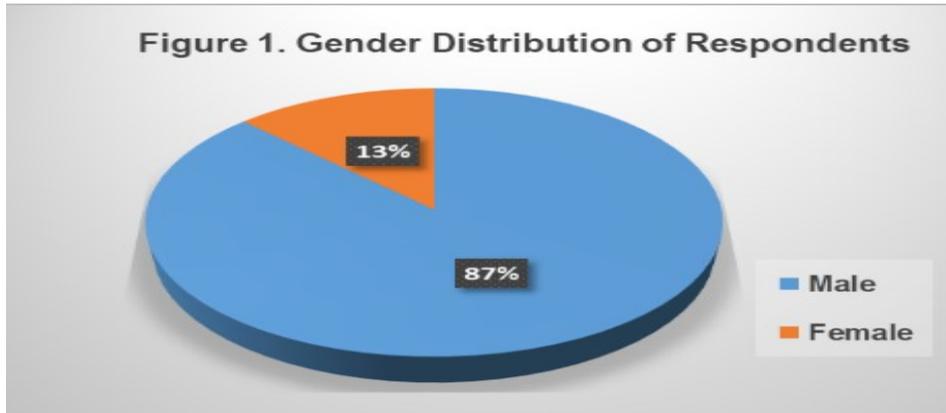


Figure 1. Respondents Gender
Sources: Author, (2020)

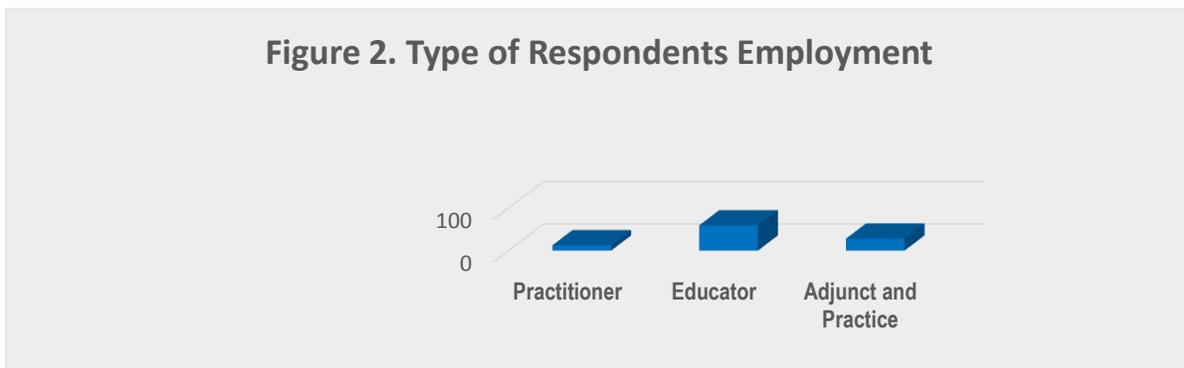


Figure 2. Respondents Employment
Sources: Author, (2020)

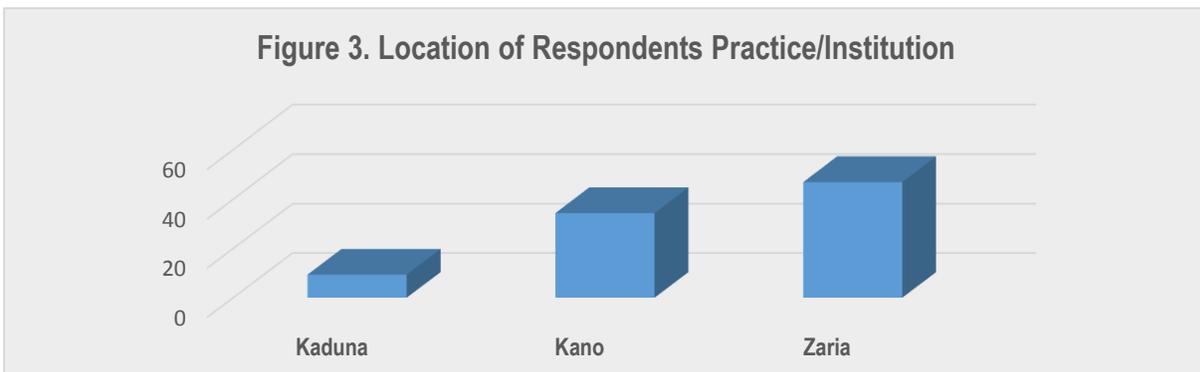


Figure 3. Respondents Location
Sources: Author, (2020)

Moreover, the analysis results of other demographic characteristics of respondents as shown in Figure 4, indicates that majority of respondents 11(34.4%) were aged between 41-50 years followed by those in the age range of between 51-60 years (31.3%). Only 3 respondents or 9.4% are within the age range of between 20-30 years. Data were missing for 1 (3.1%) of respondent. The results of years of experience for practitioners indicates uniform values 7(21.9%) each for respondents who practiced between 1-5, 11-15 and 16-20 years respectively. Similarly, the results of analysis for the "years of experience" spent by educator respondents (academic work), indicates that those who spent between 11-15 years were the majority (28.1%) followed by respondents who spent between 1-5 years (21.9%) teaching in schools of architecture. The results of respondents post-arcon registration experience as well as "years after respondents obtained arcon qualification indicates that majority (43.8%) and (25%) had between 1-5 years post arcon registration experiences and obtained arcon qualifications respectively. Data were missing for 4(12.5%) and 3(9.4%) of respondents in the former and latter results respectively. In terms of the number of houses designed by respondents using IDC however, majority were found to have designed only between 1-5 houses for clients using IDC followed by those that designed atleast above twenty (20) houses.

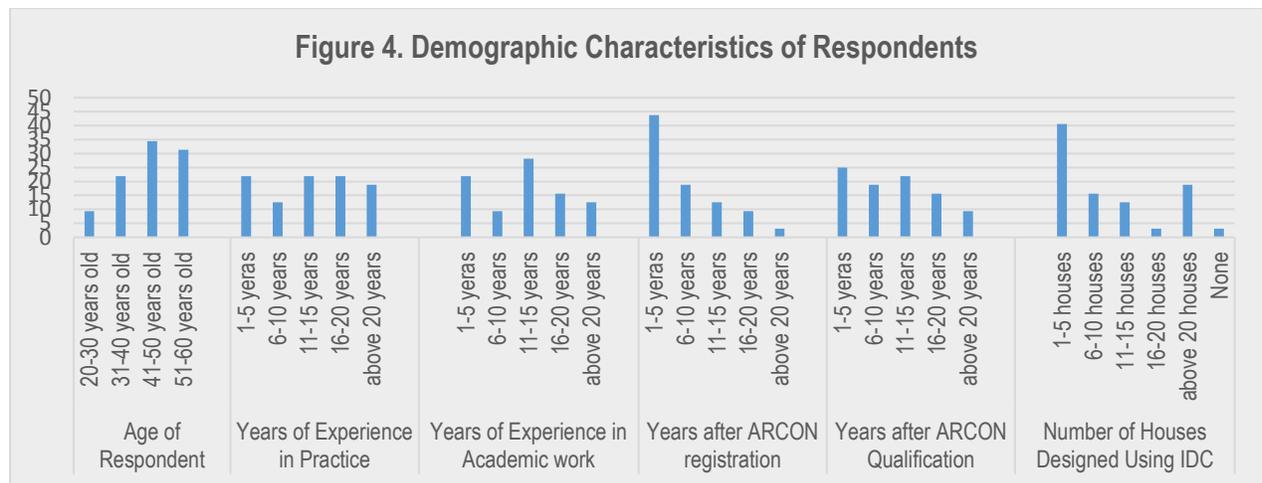


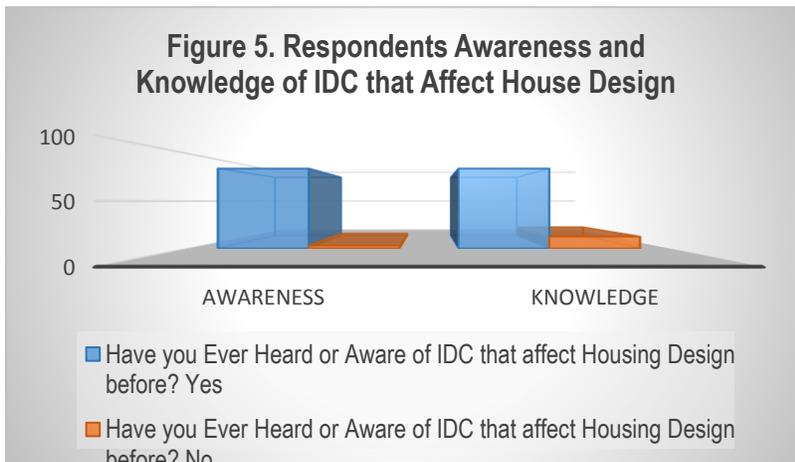
Figure 4. Showing Age range of Respondents, Years of Experience in Practice and in Academic work, Post-ARCON Registration and Qualification and Number of Houses Designed by Respondents using IDC. Sources: Author, (2020)

Frequency of "Awareness" and "Knowledge" of IDC

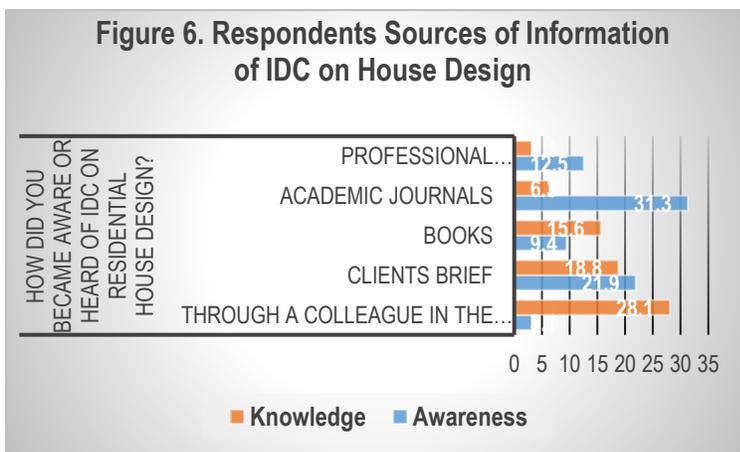
As shown in Figure 5, findings from the analysis carried out indicates that greater majority of respondents 27(84%) were "aware", in other words they "heard" of IDC, that relates to residential house design. Only one respondent was "not aware"(3.1%) of IDC on house design. A similar result was obtained on the number of respondents who had knowledge of IDC that affect house design 27(84%). However, four of the respondents (12.5%) reported that they had no Knowledge of IDC that affect house design. knowledge indicates. Data were missing for five respondents (12.5%) on Awareness and only one on Knowledge. In order to identify how respondents became "aware" or acquire knowledge of IDC that affect house design, respondents were prompted to select from five sources of information through which architects

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obtain informations that include magazines/architectural publications from professional or public regulatory bodies, academic journals, architectural books, clients brief and through interactions with colleagues in offices as shownin Figure 6. The outcome of the analysis indicates that majority of respondents 10(31.3%) became aware of IDC from academic journalsfollowed by those who became "aware" through their clients 7(21.9%). Only 1(3.1%) respondent became aware of IDC through a colleague in the office. In contrast however, majority of respondents 9(28.1%) acquired "knowledge" of IDC from their professional colleagues followed by those that acquired the knowledge through their clients. Only 2(6.3%) acquired this knowledge through academic journals. Data were missing for eight (25%) of respondents.



Figures 5. Respondents "Awareness" and "Knowledge" of IDC on House Design. Sources: Author, (2020)



Figures 6. Information Sources "Awareness" and "Knowledge" of IDC on House Design. Sources: Author, (2020)

Level of "Awareness" and "Knowledge" of IDC among Respondents

The assessment of level of awareness (*a*) and knowledge (*kn*) involves the use of a total of eleven variables of IDC's that affect house design as shown in Table 1. These include four variables under provision of family privacy (Pr-VT and Pr-AT), two under the promotion of worship activities (WA) and five under the IDC that facilitate the observance of Islamic etiquettes (I-Etq). The results indicated that majority of respondents 16(50%) had "high" awareness of IDC that affect use of toilet facility (entrance and exit behaviors), followed by respondents who had high awareness of family privacy provision in the house with 14 respondents or 43.8% for each for privacy against neighbors/passersby, visitors/servants and among family members respectively. Similarly, up to 14(43.8%) of respondents had high awareness of ruling against the use of sculpture as decorative element in the house. Furthermore, atleast 12 respondents or 37.5% had very high awareness of privacy against the outside world. Overall the results suggest that the highest number of respondents had "high" awareness across IDC variables while least number of respondents had "very low" awareness across IDC variables respectively. This results indicates that the majority of respondents that were "aware" was found under the "high" followed by "very high" awareness levels respectively. Similarly, the highest number of respondents with same values of 15(46.9%) had "high" knowledge of use of toilet facility (entrance and exit behaviors) and with "ruling against the use of sculpture as decorative element in the house", both under IDC that promote Islamic etiquettes (I-Etq). Furthermore, this number was seconded by respondents who similarly had "high" knowledge on IDC 13(40.6%) that provides family privacy for both visitors/servants as well as among family member themselves. Moreover, up to 14 respondents or 43.8% had "very high" knowledge on family privacy against neighbors and passers-by (Pr-VT). The least number of respondents however, that had either "very low" or "low" knowledge of IDC was majorly found under I-Etq (with three of the IDC variables having only 1(3.1%). Overall, the results on IDC knowledge suggest that the highest number of respondents had "high" while the least number had "very low" knowledge respectively. This results indicates that the number of respondents that were "knowledgeable" was found under the "high" followed by "very high" knowledge levels respectively.

Table 1. Respondents Level of "Awareness" and "Knowledge" of IDC that Affect House Design

Respondents "Awareness" Level (N=32)	Very Low	Low	Moderate	High	Very High	Missing Values
	Frq(%)	Frq(%)	Frq(%)	Frq(%)	Frq(%)	
IDC That Affect Provision of Family Privacy						
<i>Visual type (Pr-VT)</i>						
Privacy against the outside world (Neighbors and Passers-by)		3(9.4)	2(6.3)	14(43.8)	12(37.5)	1(3,1)
Privacy against those allowed into the house (visitors, servants etc.)		5(15.6)	1(3,1)	14(43.8)	11(34.4)	1(3,1)
Privacy among Family Members themselves (Male and female Members)	1(3,1)	6(18.8)	2(6.3)	14(43.8)	8(25)	1(3,1)

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Acoustics type (Pr-AT)

Sound transmission Between Male and Women dominated Areas 1(3,1) 11(34.4) 5(15.6) 10(31.3) 4(12.5) 1(3,1)

IDC That Affect Promotion of Worship Activities (WA)

Spaces for Obligatory Prayer for Female and Non-Obligatory for Male 2(6.3) 10(31.3) 5(15.6) 10(31.3) 4(12.5) 1(3,1)

Spaces for Reading/Teaching/Learning the Quran 3(9.4) 10(31.3) 1(3,1) 13(40.6) 4(12.5) 1(3,1)

IDC That Promote Observance of Islamic Etiquettes (I-Etq)

Use of Toilet Facility (Entrance and Exit Behavior/use of WC etc.) 2(6.3) 8(25) 4(12.5) 16(50) 1(3,1) 1(3,1)

Orientation of Toilet user in reference to Qibla Direction) 4(12.5) 5(15.6) 7(21.9) 9(28.1) 6(18.8) 1(3,1)

Orientation of in-use Furniture to Qibla Direction (Bed/Settees, etc.) 5(15.6) 9(28.1) 5(15.6) 10(31.3) 2(6.3) 1(3,1)

Ruling against the use of Sculpture as Decorative Element 5(15.6) 1(3,1) 14(43.8) 11(34.4) 1(3,1)

Ruling guiding the Use of Islamic Calligraphy as Decorative Element 6(18.8) 6(18.8) 6(18.8) 11(34.4) 2(6.3) 1(3,1)

Respondents "Knowledge" Level (N=32)

IDC That Affect Provision of Family Privacy

Visual type (Pr-VT)

Privacy against the outside world (Neighbors and Passers-by) 2(6.3) 1(3,1) 9(28.1) 14(43.8) 6(18.8)

Privacy against those allowed into the house (visitors, servants etc.) 1(3,1) 2(6.3) 13(40.6) 10(31.3) 6(18.8)

Privacy among Family Members themselves (Male and female Members) 1(3,1) 3(9.4) 13(40.6) 9(28.1) 6(18.8)

Acoustics type (Pr-AT)

Sound transmission Between Male and Women dominated Areas 2(6.3) 4(12.5) 5(15.6) 11(34.4) 3(9.4) 7(21.9)

IDC That Affect Promotion of Worship Activities (WA)

Spaces for Obligatory Prayer for Female and Non-Obligatory for Male 4(12.5) 4(12.5) 3(9.4) 10(31.3) 5(15.6) 6(18.8)

Spaces for Reading/Teaching/Learning the Quran 2(6.3) 9(28.1) 3(9.4) 7(21.9) 5(15.6) 6(18.8)

IDC That Promote Observance of Islamic Etiquettes (I-Etq)

Use of Toilet Facility (Entrance and Exit Behavior/use of WC etc.) 1(3,1) 6(18.8) 2(6.3) 15(46.9) 2(6.3) 6(18.8)

Orientation of Toilet user in reference to Qibla Direction) 1(3,1) 5(15.6) 3(9.4) 13(40.6) 4(12.5) 6(18.8)

Orientation of in-use Furniture to Qibla Direction (Bed/Settees, etc.) 2(6.3) 10(31.3) 4(12.5) 8(25) 2(6.3) 6(18.8)

Ruling against the use of Sculpture as Decorative Element 1(3,1) 4(12.5) 15(46.9) 6(18.8) 6(18.8)

Ruling guiding the Use of Islamic Calligraphy as Decorative Element 6(18.8) 6(18.8) 2(6.3) 8(25) 4(12.5) 6(18.8)

Calligraphy as Decorative Element

Key

1-Very Low Awareness 2- Low Awareness 3- Moderate, 4- High Awareness, 5- Highly Aware

1-Very Low Knowledge 2- Low Knowledge 3- Undecided, 4- Knowledgeable, 5- Highly Knowledgeable

Extent of "Awareness (a)" and "Knowledge (kn)" of IDC among Respondents

Analysis results of the assessment of the extent of respondent's awareness and knowledge is as shown in Table 2. The analysis result classified respondents score into four score-groups; 20-39% very low, 40- 59%, low, 60-79% moderate and 80-100% high, in cognizance of the score of 60% as a mean score on the Likert scale. The results of the extent of IDC awareness among respondents indicate that highest proportion of respondents (40.3%) actually fall under moderate score range followed by those in low score range (27.9%). The least proportion of the respondents fall under very low score range with a score of 3.1%. Data were missing for two respondents (6.2%). Similarly, the results of the extent of respondent's knowledge on IDC however, indicates that the highest proportion 12(37.2%) fall under "high" score group followed by moderate score group (27.9%). The least proportion of respondents 3.1% fall under the very low score group. Data for this the analysis of knowledge was missing for 4 respondents (12.4%).

Table 2. Extent of "Awareness (a)" and "Knowledge (kn)" of IDC among Respondents

Respondents Score Range (%)	Groupings of Score Range	Awareness Variables (a)		Knowledge Variables (kn)	
		Frq/(%)	Percentage (%)	Frq/(%)	Percentage (%)
20-39	Very Low	1	3.1	1	3.1
40-59	Low	9	27.9	6	18.6
60-79	Moderate	13	40.3	9	27.9
80-100	High	7	21.7	12	37.2
	N= 32				
	Missing Data	2	6.2	4	12.4

The Importance/ Ranking of IDC: Measures of Awareness Index (ai) and Knowledge Index (kni).

The Importance or ranking (Indexes) of IDC in this context refer to the degree at which each IDC variables for privacy, worship and etiquettes contributes to the overall awareness or knowledge of respondents. The variables were therefore ranked according to the degree of their contribution towards respondent's awareness and knowledge. The result of the analysis as shown in Table 3 shows the index values (HI) and ranking ® of each of the IDC. Privacy against the outside world (neighbors and passersby) with HI value of 0.93 was the highest contributor towards respondent's "awareness" and therefore ranked first (1st) on the Table. Whereas the second and third highest contributors to respondent's awareness of IDC were privacy against

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those allowed into the house (HI= 0.685, ranked 2nd) and ruling against the use of sculpture (HI= 0.681, ranked 3rd) respectively, the least contributor was however, sound transmission between male and female areas (H=0.481, ranked 11th). This result therefore suggests that both highest and least contributor to awareness were found under IDC that provide family privacy. A similar trend was observed on the result of HI values of knowledge in which privacy against the outside world (neighbors and passersby) made the highest contribution (HI=0.637, ranked 1st) closely followed by privacy against those allowed into the house (HI=0.625, ranked 2nd). The least contributor towards respondent's knowledge however were found to be orientation of "in-use furniture to Qibla direction" and ruling to use Islamic calligraphy as decorative elements both with HI value of 0.431 respectively. Overall, therefore IDC that provide visual privacy to family (Pr-VT) made more contributions towards both "awareness" and "knowledge" of IDC. On the other hand, however, IDC that promote observance of Islamic etiquettes (I-Etq) made the least contributions towards respondent's knowledge of IDC that affect house design.

Table 3. Ranking of IDC Variables to the "Awareness" and "Knowledge" of Respondents

		Awareness Index (ai)		Knowledge Index (kni)	
		HI Value	Ranking	HI Value	Ranking
Provision of Family Privacy (Visual type Pr-Vt)	Privacy against the outside world (Neighbors and Passers-by)	0.93	1st	0.637	1st
	Privacy against those allowed into the house (visitors, servants etc.)	0.685	2nd	0.625	2nd
	Privacy among Family Members themselves (Male and female Members)	0.656	4th	0.575	4th
<i>Acoustics type (Pr-AT)</i>	Sound transmission Between Male and Women dominated Areas	0.481	11th	0.462	8th
Promotion of Worship Activities (WA)	Spaces for Obligatory Prayer for Female and Non-Obligatory for Male	0.506	9th	0.462	8th
	Spaces for Reading/Teaching/Learning the Quran	0.518	7th	0.481	7th
Observance of Islamic Etiquettes (I-Etq)	Use of Toilet Facility (Entrance and Exit Behavior/use of WC etc.)	0.568	5th	0.482	6th
	Orientation of Toilet user in reference to Qibla Direction)	0.556	6th	0.531	5th
	Orientation of in-use Furniture to Qibla Direction (Bed/Settees, etc.)	0.493	10th	0.431	10th
	Ruling against the use of Sculpture as Decorative Element	0.681	3rd	0.581	3rd
	Ruling guiding the Use of Islamic Calligraphy as Decorative Element	0.512	8th	0.431	10th

CONCLUSION

In summary, this paper assessed the awareness and knowledge of IDC as design option among registered architects across three major cities in Nigeria. Specifically, the paper focused three classes of architects in Nigerian landscape i.e. educator-architects, practitioner-architects and educator-practitioner-architects. The study was facilitated using pre-tested questionnaire survey among randomly selected respondents within the study population. The summary of some key findings of this paper prompts interesting outcomes such as the highest number of respondents were located in Zaria even though Kaduna and Kano seem to have larger populations of respondents, as well as results which indicated that the highest number of respondents across all groups were both more aware and knowledgeable about IDC that affect family privacy (Pr-VT) more than IDCs. Other findings that are of significance also include the extent of respondent awareness and knowledge of IDC that was generally found to be "moderate" for both "awareness" and "knowledge" as well as the result which indicates that privacy against the outside world as the IDC that made the highest contribution towards both respondents "awareness" and "knowledge".

Conclusions could be drawn from above findings as captured in the paper. On the educator-architects who were the highest number of respondents in this study could be suggestive that respondents in this type of employment were more open to understanding issues as it affects the profession of architecture. Hence, it is no coincidence therefore, that majority of the respondents were located in Zaria; the city that hosts the first school of architecture in Nigeria and that their major source of their awareness and knowledge of IDC was from academic journals. Although majority of the respondents were aged above forty-one years, majority among this number registered with the regulatory body only within the last five years. This fact could be the reason why many of the respondents that were aware and have the knowledge of IDC designed only between 1-5 houses using IDC. Furthermore, the results which revealed that respondents were "highly aware and knowledgeable" about family privacy did not come as a surprise due to many extant studies that explored the subject of privacy in residential houses (see the foundation works of Altman (1977) who found out that privacy was a universal requirement across cultures). Whereas, in general, findings indicated the extent of respondents "awareness and knowledge" of IDC to be moderate, the particular IDC variable that contributed more towards respondents "awareness and knowledge" was the "privacy against the outside world", in other words, prevention of views of outsiders and passerby into the house and specifically the women areas. In line with this fact therefore, it can be concluded that almost all respondents were not only aware of this IDC but also highly understood by them. Hence, despite significant demographical and cultural differences among respondents, majority of them regard visual privacy when designing residential house for clients. In view of the drawn conclusions above, some recommendations to architects on how to be aware and be knowledgeable about IDC have become pertinent. First, the practitioner-architects needs to continuously update themselves by way of imbibing reading culture, specifically focusing on current professional and academic journals sourced locally and internationally. Possible ways of achieving this is to continually engage their educator-architect's colleague who are more accessible to current literature and to update subscriptions to key information sources from both professional bodies and academic databases. Second, architects that were aware of IDC (who

were in the overall majority), needs to further understand them. it may not be sufficient only to have some level of awareness, but rather to further obtain knowledge in the area and specially to architects that design buildings to satisfy clients requirements.

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