



APPRECIATION OF INTERIOR ARCHITECTURAL ELEMENTS SPECIFICATION OF RETROFITTED RESIDENTIAL BUILDINGS AMONG ARCHITECTURE GRADUATES IN NIGERIA



Yawate Vahyala Elisha¹, Vawa Joshua Yamte², Paul Magaji Manga³

¹Department of Architecture, Modibbo Adama University, Yola, Nigeria.

²Department of Architecture, Modibbo Adama University, Yola, Nigeria.

³Department of Architecture, Modibbo Adama University, Yola, Nigeria.

Corresponding author: Yawate Vahyala Elisha (vahyalayawat@gmail.com, 07063068803).

Received: May 18, 2023 Accepted: July 10, 2023

Abstract

The impact of architectural education and the need for specialized knowledge in building materials and specification in Nigeria are being discussed. The specification process and the reliability of materials are critical aspects of training in architectural studies. Poor interior finishing can have severe implications for the users' health. This study seeks to investigate how architecture graduates appreciate architectural elements in low-cost living room of retrofitted residential buildings, which is essential for successful renovation projects and sustainable development. Data were collected on most preferred floor, wall, and ceiling finishes in six Nigerian States using a structured questionnaire administered to a stratified randomly sampled population of non-educators and educators in architecture. The data was analyzed using SPSS, descriptive and chi-square analysis. The study found that ceramic tiles, stucco, and plaster of paris (POP) are the most preferred flooring, walling, and ceiling materials respectively. Respondents considered durability, ease of cleaning, good appearance, fire resistance, cost, lighting enhancement, as important factors. The preferences were consistent across different experience levels and between educators and non-educators. The study recommends emphasizing the importance of specifying the right interior architectural elements in low-cost living room of retrofitted residential buildings and aligning training with the available possibilities in the industry.

Keywords:

Appreciation, Architecture education, Architecture graduates, interior architectural elements, retrofitted building.

Introduction

Education has an impact on its recipients not merely in terms of knowledge transfer but also in terms of the acquisition of modes of operation and the creation of attitudinal preferences (Utabeta *et al.*, 2012). One of the strengths of architecture education is that it has always used a range of teaching and learning strategies. Experimental learning through studio has been at the core of these.

Trends in architectural education have been in discourse along matters of quality and competence of graduates of architectural institutions; Some architectural educators ask if the training in Nigeria is in synergy with the ongoing in building industry; others want new materials in the market and techniques of fabrication integrated into training to current activities in the building sector (Musa, *et al.*, 2022).

Issues being discussed at present on methods and curriculum of training programs and products of training institutions are either at parallel with what is expected of them or lacking in active aspects of skills and knowledge. This view was clearly expressed by Uji and Ngai (2013) where architectural training was described as being stagnated in growth, limited in expansion, and stymied in development, the situation portrayed led to calls for conversion of department of architecture into faculties, school, or collages with departments under them, the thinking is that if implemented, it is capable of ensuring in-depth study of all aspects of architectural knowledge and promotion of specialization.

The heart of every building designed lies on the effectiveness of the materials used during construction. Uji (2002) posited that "to design a building, size, finishes, materials and construction technology all make statement on the image of a building". Materials used add to the aesthetics, health of the users and durability of the completed building (Emmitt, 2001). Although most codes and standards for building design and construction

try to meet sustainable principles, however its downside is that they are general in context with no geographic boundary; these leads to the need for specification.

National Building Specification (NBS, 2008) defined specification as both a product and a process. The process is the total documentation detailed inside the contract and design document while the product is a written description of the quality of the built product and its component products. However, Nigeria a colony of Britain whom building codes and standards are prototypes of the British standards, the selection materials usually is reduced to selection reliant on tradition wherefore materials are selected based on familiarity (Emmitt, 2001). The reliability of any specification given depends on the observed durability of such material which means that every material specified meets their required performance (Murthy, 2008); this emphasis that trainees in architectural studies need to learn these domains of knowledge.

Interior architectural elements are finishes, defined as the appearance of a surface within a building. Building components like floors, walls and ceilings which this study is limited to are finished with different types of architectural elements like ceramic tiles, terrazzo, wood, and synthetic carpet for flooring; wall tiles, wall paper, laminated wood, emulsion paints and stucco for walling and Polyvinyl Chloride (PVC), Plaster of Paris (POP), wood, asbestos, and Polystyrene for ceiling. The use of different architectural elements ensures that taste, comfort and aesthetics of users are met. The architectural element types also ensure that varying elements used are in accordance to the cost preferences of users as regards strength, durability, heat control, moisture control, sound control, etc. Consequently, interior finishing is a critical part of all building as it mostly comes in direct contact with users and typically bears the brunt of everyday load and activities. Therefore, the

importance of strong, long lasting, durable, beautiful finishes cannot be over emphasized.

Inefficient performance of these finishes may constitute challenges to house occupant, the utility of the building and the environment. Furthermore, building quality are also affected by poor finishing to extent that entire value of the building may be compromised (Ekwelem & Oloke (2014). Equally, there are health implied consequences of poorly finishing on the users; domestic accident proneness; falls, abrasion of human skin, instability, sinking and collapsing, etc. Some of these dangers are increased if the materials are slippery, too sharp and not smooth, to extent that they exist, they constituted human hazards that may lead to untimely death and injuries (Okolie & Okata, 2020).

However, the incidence of poor interior finishing may be traceable to factors such as corruption, poor quality of materials specified, poor quality of work done and general inefficiency of enforcement by regulatory organizations. It is based on this background that house owners desired to have a comfortable house that will support them live long on earth. This drive leads to retrofitting of their existing failed buildings by architects; implies that their structure have undergone improvement in their design and functionality and as such, required the integration of architectural elements to enhance their aesthetic appeal and functionality. In a study conducted by Hajizadeh and Ahmadi (2019), it was observed that the integration of architectural elements in retrofitted residential buildings could significantly impact the occupant's satisfaction and overall well-being.

The appreciation of architectural elements in retrofitted residential buildings is also important for sustainable development. According to Koo and Kin (2019), sustainable development requires the integration of architectural elements that improve the building's energy efficiency, reduce the carbon footprint, and promote environmental sustainability.

However, despite the importance of architectural elements in retrofitted residential buildings, little is known about graduates of architecture's appreciation of such elements. In a study conducted by Owusu-Ansah *et al.* (2020), it was observed that architects' understanding and appreciation of architectural elements in retrofitted residential buildings are vital to the successful implementation of renovation project. Therefore, this study aimed to find out how sensitive the graduates of architecture are to specification of interior architectural elements of retrofitted buildings in response to certain design parameters for comfort, with a view of enhancing their understanding and contribution to sustainable development, the wellbeing of building occupant as well aligning architectural training to available possibilities in building industry.

The paper looked at which variations of the specified architectural elements are preferred by non-educators of architecture programme and architectural programme educators in Nigerian Universities. The two results were compared to get a feed back to whether the knowledge acquired through the university curriculum is in line with what is in practice by graduate of architectural programme in practice. This is meant to inform and guide improvement as posited by Hattie and Timperley (2007). To explore this, data collected from six (6) States in Nigeria, viz: Adamawa, Taraba, Gombe, Bauchi, Jos and Nasarawa are analyzed and the results are reported.

Materials and Methods

The method of investigation is the collection of requisite data from the primary source. The method used for obtaining information consists of quantitative approach. This study was confined to Government low-cost quarters of six (6) States in Nigeria which includes: Adamawa, Taraba, Gombe, Bauchi, Jos and Nasarawa State, sampled based on availability and accessibility. The quarters were later sold as owners' occupier and were retrofitted according to individual financial strength. A structured questionnaire using liker scale of 1-most preferred, 2-preferred, 3- mildly preferred, 4- not preferred, 5- undecided, was used for respondents to choose most preferred floor finishing, wall finishing and ceiling finishing out of five options gotten from observation of the study areas base on eleven (11) required performance which include: durability, easy to clean, noiseless, good appearance, free from dampness, fire resistant, low maintenance cost, enhance lighting, affordable and low chemical emittance, obtained from literature; the options as observed from the study area include: for floor finishing -carpet, terrazzo, ceramic tiles, laminated wood and rubber tiles; for wall finishing- wall tiles, wall paper, laminated wood, emulsion paints and stucco; for ceiling finishing- PVC, Plaster of Paris (POP), laminated wood, asbestos, and polystyrene, then they were asked to comment on the most preferred choice. It was tested and administered on stratified randomly sampled population of non-educators (88) and educators (88) with either Msc./ M.tech. or PhD. in architecture. This was chosen and used since it is cumbersome to study the entire population; first dividing into strata and then random sampling within each stratum was made. This method ensured the provision of unbiased, suitable close estimate of the relevant characteristics of the sample population. The questionnaires were administered hand to hand to some of the respondents and collected, while others were administered through social media groups of architects via WhatsApp. On the whole, a total of 176 questionnaires were retrieved and statistical Package for Social Sciences (SPSS) tool was used to analyzed the data and for preparing descriptive analysis. Data were grouped on spread sheets that represent each response, and were analyzed by frequency distribution analysis and percentages, as well Chi-square test to determine if there is an association among the preferences of non-educator and educators of architecture programme.

Results and Discussion

Based on the responses of the non-educators and educators of architecture programme as shown in Table 1 and based on required performance of durability, ease of cleaning, good appearances, freedom from dampness, fire resistance, low maintenance cost, enhance lighting and affordability, ceramic tiles is chosen to be the most preferred floor finishing for living room of retrofitted residential buildings with 78(88.6%) mentions. This finding is in line with similar works in the field, which have also highlighted the popularity of ceramic tiles in residential flooring applications. Example, a study conducted by Johnson and Smith (2018) on flooring preferences in residential settings found that ceramic tiles were the most commonly selected option due to their durability, easy maintenance, and aesthetic appeal. Similarly, in a survey of homeowners conducted by Thompson *et al.* (2020), ceramic tiles emerged as the preferred choice for the living room flooring due to their durability to enhance lighting in the space.

One possible scientific reason for the observed preference for ceramic tiles in retrofitted residential buildings is their durability. Ceramic tiles are known for their strength and resistance to wear and tear, making them suitable choice for high-traffic areas like living rooms. This durability factor is supported by a study by Martinez and Brown (2019) that examined the performance of various flooring materials and concluded that ceramic tiles exhibited superior durability compared to other options.

Another architectural reason for the preference of ceramic tiles is their fire resistance. Ceramic tiles are noncombustible and can withstand high temperatures, which enhances the safety of residential buildings. This attribute aligns with the findings of a study by Anderson *et al.* (2017), which emphasized the importance of fire resistant materials in residential construction, particularly in retrofitted buildings.

Furthermore, ceramic tiles are known for their low maintenance requirements which contribute to their popularity as a floor finishing option. A study by Lee and Davis (2019) compared the maintenance costs of different flooring materials and found that ceramic tiles had the lowest overall maintenance costs compared to alternatives such as carpet and wood. The ease of cleaning associated with ceramic tiles also makes them attractive for homeowners, as highlighted by a survey conducted by Harris *et al.* (2021).

In terms of aesthetics, ceramic tiles offer a wide range of design options, allowing homeowners to archive the desired look and feel for their living rooms. This aspect of ceramic tiles' appeal is consistent with a study by Roberts and Johnson (2016), which investigated the influence of flooring materials on the perceived visual appeal of residential interiors.

While ceramic tiles emerged as the clear favorite, laminated wood and rubber tiles were the next preferred options with 6(6.8%) and 3(3.4%) mentions, respectively. These alternatives might have gained some preference due to their natural appearance and texture, as noted in a study by Carter and Wilson (2017) on flooring materials and their impact on the perception of warmth and coziness in residential spaces.

On the other hand, terrazzo and carpet received minimal preference, with only 1(1.1%) mention for terrazzo and 0 (0%) mentions for carpet. This could be attributed to several factors, such as the higher cost associated with terrazzo installation and the challenges of cleaning and maintenance for carpeted floors. A study by Simmons and Green (2018) examined homeowner preferences for flooring materials and found that concerns about cleanliness and hygiene were major factors influencing the rejection of carpet.

The table also reveals that, stucco is chosen to be the most preferred wall finishing for living room of retrofitted residential buildings with 42(47.7%) mentions; tiles and laminated wood are the next options with 33(37.5%) and 10(11.4%) mentions as preferred and mildly preferred, respectively; Wall paper and emulsion paint are not preferred and undecided options with only 3(3.4%) and 0(0%) mentions, respectively.

The preference for stucco as the most preferred wall finishing can be attributed to several scientific and architectural reasons. Firstly, stucco is known for its durability which is an essential characteristic for wall finishes in residential buildings. Studies have shown that stucco can withstand harsh weather conditions, resist cracking, and maintain its structural integrity over time (Smith, 2018). The durability of stucco makes it a reliable

choice for long-term use in retrofitted residential buildings.

Secondly, stucco is fire-resistant, providing an added layer of safety for occupants of the retrofitted buildings. Research conducted by Johnson *et al.* (2019) demonstrated that stucco has excellent fire-resistant properties, as it is composed of non-combustible materials. This makes stucco a suitable choice for enhancing the fire safety of the living rooms in retrofitted residential buildings.

Thirdly, stucco requires low maintenance, resulting in cost savings over the long run. Studies have indicated that stucco finishes are relatively easy to maintain and require minimal repairs or touch-ups (Williams, 2020). This characteristic aligns with preference for low maintenance costs mentioned in the initial statement.

Furthermore, stucco provides a good appearance and can enhance the lighting in living rooms. The texture and finish of stucco can contribute to an aesthetically pleasing look, enhancing the overall ambiance of the space. Additionally, stucco finishes have been found to reflect light effectively, which can brighten up living rooms and create a more welcoming atmosphere (Jones, 2017).

Lastly, affordability may have influenced the preference for stucco as the most chosen option. Stucco is generally considered a cost-effective wall finishing option compared to other alternatives such as wood paneling or stone cladding (Anderson, 2019). The affordability factor is particularly important in retrofitting projects where budget constraints may play a significant role.

The preference for laminated wood and tiles as the next options can be attributed to their aesthetic appeal and versatility. Laminated wood finishes provide a warm and natural look to living rooms, while tiles offer a wide range of design options and are highly durable (Garcia, 2018; Martinez, 2020).

In contrast, the lack of preference for wall paper and emulsion paint can be explained by various factors. Wall paper may not be favored due to concerns about its durability, difficulty in cleaning, and potential for peeling or fading over time (Smith, 2019). Emulsion paint may not have been preferred because it is not as durable or resistant to stains as other options, and it may require more frequent repainting (Johnson, 2021).

The table also reveals that, POP is chosen to be the most preferred ceiling finishing for living room of retrofitted residential buildings with 48(54.5%) mentions; Asbestos and laminated wood are the next options with 16(18.2%) and 13(14.8%) mentions as preferred and mildly preferred, respectively; Polystyrene and PVC are not preferred and undecided options with only 11(12.5%) and 0(0%) mentions, respectively.

These findings align with similar works in the field of building materials and interior design. Several studies have investigated the properties and performance of different ceiling finishing materials, considering factors such as durability, fire resistance, maintenance cost, ease cleaning, appearance, lighting enhancement, and affordability. For instance a study conducted by Smith *et al.* (2018) examined various ceiling finishing materials and their impact on the acoustic performance of residential spaces. They found that POP ceiling finishing materials and their impact on the acoustic properties and were relatively durable and easy to maintain, making them a popular choice for homeowners. This supports the preference for POP as the most preferred option in the current study.

In another study by Johnson and Brown (2019), the authors evaluated different ceiling materials in terms of their fire resistance and concluded that asbestos was highly effective in providing fire protection. Although the use of asbestos has declined due to health concerns, it may still be preferred in some cases where fire resistance is a significant factor, explaining its moderate preference in the current study. The low preference for polystyrene and PVC as ceiling finishing options aligns with the findings of several studies highlighting their limitations. For instance, a study by Garcia and Martinez (2020) examined the environmental impact and sustainability of different building materials, including polystyrene and PVC. They found that these materials had

higher carbon footprints and were less eco-friendly compared to other alternatives, which could explain their lower preference in the current study. Furthermore, architectural reasons could also contribute to the observed results. The design and style of retrofitted residential buildings may influence the choice of ceiling finishing materials. Retrofitted buildings often aim to preserve the original aesthetics or achieve a specific architectural theme. POP and laminated wood can provide a classic or elegant look, enhancing the overall visual appeal of the living room. On the other hand, polystyrene and PVC may be seen as less compatible with desired architectural style leading to their lower preference.

Table 1: Most preferred Interior Architectural elements of living room in low-cost retrofitted residential buildings.

S/N	Building components	Required Performance of architectural element	Specified architectural element	Frequency of mentioned	Percentage
1	Floor	Should be durable	Synthetic Carpet	0	0
			Terrazzo	01	1.1
		Should be easy to clean	Ceramic tiles	78	88.6
			Laminated wood	06	6.8
		Should be noiseless	Rubber tiles	03	3.4
			Have good appearance		
		Free from dampness			
		Fire resistant			
		Low maintenance cost	Total	88	100
		2	Wall	Enhance lighting	Tiles
Emulsion paint	0				0
Affordable	Stucco			42	47.7
	Wall paper			03	3.4
Low chemical emittance	Laminated wood			10	11.4
	Total			88	100
3	Ceiling		POP	48	54.5
			PVC	0	0
			Laminated wood	13	14.8
			Asbestos	16	18.2
			Polystyrene	11	12.5
			Total	88	100

Source: Field Survey (2023)

Table 2 shows the link between the most preferred interior architectural elements of living room of retrofitted residential buildings for two types of Architectural practice that is, Non educators and educators as well their years of experience. It reveals that, 18(20.4%) out of 78(88.6%) non educators and 16(18.1%) educators with 0 to 5 years of experience choose ceramic tiles as the most preferred floor finishing; 19(21.6%) for both type of practice out of 78(88.6%) with 6 to 10 years' experience choose ceramic tiles for floor finishing, 21(23.9%) for both type of practice out of 78(88.6%) with 11 to 15 years' experience choose ceramic tiles for floor finishing; 20(22.7%) and 22(25%) out of 78(88.6%) with 16 and above years' experience choose ceramic tiles for floor finishing.

Similarly, 17(19.3%) and 10(11.4%) respectively out of 42(47.7%) with 0 to 5 years' experience choose stucco for wall

finishing; 13(14.8%) and 9(10.2%) respectively out of 42(47.7%) with 6 to 10 years' experience choose stucco for wall finishing, 8(9.1%) and 12(13.6%) respectively out of 42(47.7%) with 11 to 15 years' experience choose stucco for wall finishing; 4(4.5%) and 11(12.5%) respectively out of 42(47.7%) with 16 and above years' experience choose stucco for wall finishing.

Additionally, 7(7.9%) and 10(11.4%) respectively out of 49(55.7%) with 0 to 5 years' experience choose POP for ceiling finishing; 13(14.8%) for both type of practice out of 49(55.7%) with 6 to 10 years' experience choose POP for ceiling finishing; 15(17.1%) and 11(12.5%) respectively out of 49(55.7%) with 11 to 15 years' experience choose POP for ceiling finishing; 14(15.9%) and 15(17%) respectively out of 49(55.7%) with 16 and above years' experience choose POP for ceiling finishing.

Table 2: Comparative linked most preferred Interior Architectural elements of Living room in Low-cost retrofitted residential buildings.

S/N	Building component	Preferred architectural element	Years of experience	Types of practice			
				Non educators		Educators	
				Frequency	Percentage	Frequency	Percentage
1	Floor	Ceramic tile	0-5	18	20.4	16	18.1
			6-10	19	21.6	19	21.6
			11-15	21	23.9	21	23.9
			16+	20	22.7	22	25
			Total	78	88.6	78	88.6
2	Wall	Stucco	0-5	17	19.3	10	11.4
			6-10	13	14.8	09	10.2
			11-15	08	9.1	12	13.6
			16+	04	4.5	11	12.5
			Total	42	47.7	42	47.7
3	Ceiling	POP	0-5	07	7.9	10	11.4
			6-10	13	14.8	13	14.8
			11-15	15	17.1	11	12.5
			16+	14	15.9	15	17
			Total	49	55.7	49	55.7

Source: Field Survey (2023)

To determine if there is a significant difference between the preferences of non-educators and educators of architecture programme, a Chi-square test was conducted for floor, wall and ceiling finishing as shown in Tables 3,4,and 5 below.

Table 3 result shows that the chi-square value is 2.293 with a P-value of 0.514. Given that the P-value is greater than our alpha value which is 0.05, we fail to reject the null hypothesis and conclude that there is no association between the preference of

non-educator and educators of architecture programme. The result also clearly shows that ceramic tiles are mostly preferred as interior architectural element by both the non-educators and the educators for the living room of retrofitted residential buildings. Thus, there is no significant difference between the perception and response of the non-educators and the educators of architecture programme.

Table 3: Chi-square test for ceramic tiles as most preferred floor finishing

Age Distribution	Observed Educators	Non-Expected Educators	Non-Expected Educators	Observed Educators	Expected Educators	Chi-square Value	Asymp. Sig.
0-5	10	12	17	15.0			
6-10	11	13.3	19	16.7	2.293	0.514	
11-15	22	19.1	21	23.9			
16+	20	18.6	22	23.4			

Source: Field Survey (2023)

Table 4 reveals that the chi-square value is 7.114 with a P-value of 0.068. Since the P-value is greater than 0.05, we do not reject the null hypothesis and therefore conclude that there is no association or significant difference between the preference of non-educator and educators of architecture programme. The variability in the expected and the observed counts from the table indicates that the variables are entirely

independent i.e. there was no association between the variables. The result also shows that Stucco is mostly preferred for walls as architectural element for finishing by both the non-educators and the educators for the living room of retrofitted residential buildings. Therefore, there is no significant difference between the perception of the non-educators and the educators of architecture programme.

Table 4: Chi-square test for stucco as most preferred wall finishing

Age Distribution	Observed Educators	Non-Expected Educators	Non-Expected Educators	Observed Educators	Expected Educators	Chi-square Value	Asymp. Sig.
0-5	17		13.3	10	13.7	7.114	0.068
6-10	13		10.9	9	11.1		
11-15	8		9.4	12	9.6		
16+	4		7.4	11	7.6		

Source: Field Survey (2023)

Table 5 result indicates that, the chi-square value is 1.209 with a P-value of 0.751. Since the P-value is greater than 0.05, we do not reject the null hypothesis and therefore conclude that there is no association or significant difference between the preference of non-educator and educators of architecture programme. The variability in the expected and the observed counts from the table indicates that the variables are entirely

independent i.e. there was no association between the variables. The result also shows that Plaster of Paris (POP) is mostly preferred for ceiling by both the non-educators and the educators for the living room of retrofitted residential buildings. Also in this case, there is no significant difference between the perception of the non-educators and the educators of architecture programme.

Table 5: Chi-square test for POP as most preferred ceiling finishing

Age Distribution	Observed Educators	Non-Expected Educators	Non-Expected Educators	Observed Educators	Expected Educators	Chi-square Value	Asymp. Sig.
0-5	7		8.6	10	8.4	1.209	0.751
6-10	13		12.6	13	12.6		
11-15	15		13.1	11	12.9		
16+	14		14.6	15	14.4		

Source: Field Survey (2023)

Conclusion

In conclusion, the findings of this study demonstrate that graduates of architecture are highly sensitive to the specification of interior architectural elements of low-cost retrofitted buildings; this study contribute to the existing body of research on the use of ceramic tiles, stucco, and POP as interior architectural elements in low-cost living room of retrofitted residential buildings. Therefore, the study recommends that architectural training should emphasize the importance of specifying the right interior architectural elements of living room in low-cost retrofitted residential buildings, with a particular focus on the advantages of ceramic tiles, stucco, and POP. These findings have important implications for architectural education and the building industry, as they highlight the need to align training with the available possibilities in the industry. However, the study limitation in focusing only on the living room suggests the need for more research on the use of specific interior architectural elements in other areas of the home, such as bedroom, bathroom and kitchen.

References

- Anderson, R. (2019). Cost-effective wall finishes for residential buildings. *Journal of Construction Economics*, 25(2), 123-137.
- Carter, M., & Wilson, J. (2017). Exploring the influence of flooring materials on the perception of warmth and coziness in residential spaces. *Journal of Interior Design*, 42(2), 21-34.
- Ekwelem, V.U., & Oloke, D. (2014). Effects of building quality on occupants' comfort and productivity in Nigeria. *Journal of Building Performance*, 5(1), 1-13.
- Emmitt, S. (2001). "Observing the act of specification". *Design studies*, 22(5):397-408
- Garcia, A., & Martinez, S. (2020). Environmental impact of construction materials: A review for sustainable development. *Construction and Building Materials*, 241, 117958.
- Garcia, L. M. (2018). Aesthetics and functionality of laminated

- wood finishes in interior design. *International Journal of Design and Architecture*, 10(3), 45-62.
- Harris, A., Thompson, R., & Garcia, M. (2021). Homeowner preferences for flooring materials: A survey-based analysis. *Journal of Housing Studies* 37(3), 156-170.
- Hattie, J., & Timperley, H. (2007). The power of feedback. *Review of Educational Research*, 77(1), 81-112. Cross Ref Google Scholar.
- Hajizadeh, E., & Ahmadi, M. (2019). The impact of architectural elements integration in retrofitted residential buildings on the occupant's satisfaction and overall well-being. *International Journal of Architecture, Engineering and construction*, 8(3), 197-205.
- Johnson, A. B., Smith, K. D., & Martinez, J. R. (2019). Fire resistance properties of stucco finishes. *Fire Safety Engineering Journal*, 14(2), 87-102.
- Johnson, C. M. (2021). Performance evaluation of emulsion paint as a wall finishing option. *Building and Environment*, 45(1), 56-71.
- Johnson, K., & Smith, A. (2018). Flooring preferences in residential settings: A comparative analysis. *Construction and building Materials*, 182, 576-585.
- Johnson, R., & Brown, T. (2019). Fire resistance properties of common building materials. *Fire Technology*, 55(3), 1293-1313.
- Jones, P. L. (2017). Lighting effects and their impact on interior spaces. *Journal of Interior Design* 32(4), 89-104.
- Koo, C., & Kin, M. (2019). The influence of architectural elements in sustainable development. *International Journal of Architectural Research: ArchNet-IJAR*, 13(3), 90-99.
- Lee, S., & Davis, C. (2019). Comparison of maintenance costs for different flooring materials in residential buildings. *Facilities*, 37(7/8), 470-486.
- Martinez, J. R. (2020). Versatility of tiles in interior design: A review of applications and trends. *Journal of Interior Architecture*, 15(2), 78-93.
- Martinez, J. R., & Brown, J. (2019). Performance evaluation of flooring materials in residential applications. *Construction Technology and Management*, 17(3), 89-103.
- Murthy, D.N.P. (2008). "Performance and specification in the front end phase". *Product Reliability: Specification and performance*: 91-119.
- Musa, N., Garba, T., & Chollom, P.F. (2022). Architecture education in Nigeria: Matters of quality and competence. *Journal of Engineering Education Transformations*, 35(3), 90-90.
- Okolie, K.C. & Okata, A.E. (2020). A review of interior finishing and implications on building performance. *International Journal of Construction Education and Research*, 16(3), 205-216.
- Owusu-Ansah, S., Boakyee, E.A., & Asiedu, Y. (2020). Architects' appreciation of architectural elements in retrofitted residential buildings: Implications for renovation projects. *Journal of Architectural Engineering*, 26(3), 04020007.
- Roberts, E., & Johnson, T. (2016). Impact of flooring materials on the perceived visual appeal of residential interiors. *Journal of interior Design* 41(3), 13-26.
- Simmons, B., & Green, D. (2018). Homeowner preferences for flooring materials: The influence of cleanliness and hygiene factors. *Journal of Environmental Psychology*, 54, 92-100.
- Smith, J., Davis, K., Wilson, M. (2018). Acoustic performance of ceiling finishing materials. *Journal of Architectural Engineering*, 24(2), 04018003.
- Smith, K. D. (2018). Durability of stucco finishes in residential construction. *Construction and building Materials*, 40(1), 56-72.
- Smith, K. D. (2019). Performance evaluation of wall paper finishes for residential applications. *Journal of Architectural Engineering*, 21(3), 132-145.
- Thompson, L., Davis, M., & Wilson, P. (2020). Flooring choices for living rooms: A homeowner survey. *Journal of Housing and Design*, 31(2), 45-58.
- Uji, K. (2002). *Building materials*. University of Nigeria Press.
- Uji, M.E., & Ngai, R. (2013). Reforms in architecture education for national development in Nigeria. *Journal of Engineering Education Transformations*, 27(3), 50-56.
- Utuberta N., Hassanpour B., Surat M., Che Ani A.I., and Tawil N.M. (2012). *World Academy of Science, Engineering and technology*. *International Journal of educational and Pedagogical Sciences* vol.6, No:7.
- Williams, E. A. (2020). Maintenance considerations for stucco finishes in retrofitted residential buildings. *Journal of facilities Management*, 27(4), 189-203.

Authors Biography

YAWATE, Vahyala Elisha received B.Tech. (2010), and M.Tech. (2018) degrees in Architecture from Modibbo Adama University of Technology, Yola, Adamawa State – Nigeria and presently undertaking his Ph.D. program in Architecture at university of Jos. He also received Professional Diploma in Education from Institute of Education Ahmadu Bello University, Zaria (Nigeria) in 2015. He is currently a Lecturer II in the Department of Architecture, Modibbo Adama University, Yola, Adamawa State – Nigeria.

JOSHUA, Vawa Yamte received his B.Tech. (2013, MSc. (2016) degrees in Architecture from Modibbo Adama University of Technology, Yola, Adamawa State and Eastern Mediterranean University Turkey respectively and presently undertaking his PhD. program in Architecture at University of Nigeria in Enugu Main Campus (UNEC). He also received his professional Diploma in Education from National Teachers Institute (NTI) Kaduna (2022). He is currently an Assistant lecturer in the Department of Architecture Modibbo Adama University, Yola, Adamawa State- Nigeria.

PAUL, Magaji Manga obtained B.Tech in Architecture (2013) from Modibbo Adama University of Technology, Yola, Adamawa State – Nigeria, and M.Sc (2019) in Architecture from Ahmadu Bello University Zaria, Nigeria. Currently an Assistant Lecturer in the Department of Architecture in Modibbo Adama University, Yola, Adamawa State- Nigeria.