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## RESPONSE OF GBAGYI TRADITIONAL BUILDING PATTERN TO MODERN ARCHITECTURE IN ABUJA, NIGERIA

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### Abstract

This research examines the need to preserve and integrate Nigerian indigenous architecture, specifically focusing on the Gbagyi people's traditional building pattern. The aim of this study is to identify the elements of continuity or transformation within the Gbagyi traditional building pattern which has not been adequately explored. The study selected 100 traditional compounds in four Gbagyi settlements representing different historical periods, and conducted semi-structured interviews with compound heads to gather qualitative data. Additionally, physical observation examined Gbagyi buildings, while structured questionnaire was administered to 348 individuals knowledgeable about Gbagyi history and building patterns. Thematic analysis was applied to the interview data, and the questionnaire responses were analysed using the Statistical Package for the Social Sciences (SPSS) for descriptive analysis. The findings revealed that the Gbagyi pre-colonial building pattern was characterized by a circular form, with granaries as prominent features and mud and timber as primary building materials. The study also revealed the influence of modern architecture and external factors on Gbagyi architecture, leading to the adoption of modern designs, construction techniques, and materials in contemporary Gbagyi settlements. The findings have implications for the preservation and incorporation of indigenous architectural elements into contemporary Nigerian architecture.

**Keywords:** Gbagyi, Traditional Architecture, Transformation, Building Pattern, Abuja.

### INTRODUCTION

Transformation denotes the process of change, which is intrinsic to nature itself, as it continuously evolves and updates its current state. Likewise, architecture remains dynamic and susceptible to the passage of time and evolving circumstances. As people adapt to their environment, they inevitably seek novel ways to incorporate ever-changing technologies. Scholars like Elgaard (2013) and Dormus (2009) asserted that sustainability, globalization, and technological advancements act as catalysts for architectural change. Dormus (2009), drawing upon Hacıhasnıoğlu (2005), emphasized that architecture should not only respond to the present but also anticipate future transformations, focusing on designing spaces that accommodate the needs of upcoming generations. Throughout history, architecture has constantly undergone transformations, encompassing various styles, individual expressions, technological progressions, and evolving desires. Major cities worldwide bear witness to these periodic architectural metamorphoses.

The swift growth of urbanization and globalization is visibly impacting the transformation of both physical and cultural aspects of traditional settlements, especially in rapidly expanding cities such as Abuja, Nigeria's capital. The surge of individuals seeking better economic prospects is leading to increased pressure on the existing indigenous settlements to accommodate them (Junaidu, 2004). Prior to the colonial era, various ethnic groups in Nigeria

had unique building designs, construction methods, and layouts that represented their cultural identity. However, modern architecture in Nigeria which became proliferate during and after the colonial era is focused on fulfilling the needs of the modern industrial age and is moving away from cultural expression while dealing with the absence of proper technology and economic issues (Uchegbu, 2007). In a study by Qurix and Sagada (2022), Nigerian architecture's evolution is traced from pre-colonial times when round thatched huts dominated, arranged based on cultural norms. By the early 20th century, rectangular structures with vaulted roofs emerged, especially in the north, replacing thatched roofs. This transition laid the foundation for vernacular architecture, primarily built with mudcrete or mud blocks, and later, imported materials. As a consequence, the traditional Gbagyi housing, commonly seen in many traditional settings, is undergoing changes and improvisation to suit diverse tenants and businesses, raising concerns about the housing's cultural identity sustainability. Urbanization is believed to be a contributing factor to the gradual disappearance of these indigenous housing patterns and their associated cultural values (Junaidu, 2004). In many Gbagyi traditional settlements across the Federal Capital Territory Abuja, several changes to the original settlement and housing pattern in response to modernization are glaringly obvious. Thus, it is common sight to observe Gbagyi huts sandwiched with rectangular buildings with (often nonfunctional) corridors created for relaxation.

This study, therefore, aims at identifying the elements of transformation or continuity in Gbagyi traditional architecture in response to the influence of modern architecture, with the view to identifying ways through which Gbagyi traditional architecture could be preserved and integrated into contemporary architecture in Nigeria. The objectives of the study are to: (i) identify elements of Gbagyi traditional compound; (ii) examine the traditional Gbagyi building pattern; (iii) determine the nature of transformation or continuity in the Gbagyi traditional building pattern since colonial era; (iv) examine the factors responsible for the transformation or continuity in the Gbagyi traditional building pattern in the period under review; and (v) proffer ways through which traditional elements of Gbagyi architecture could be preserved in modern architecture.

## LITERATURE REVIEW

### The Study Area

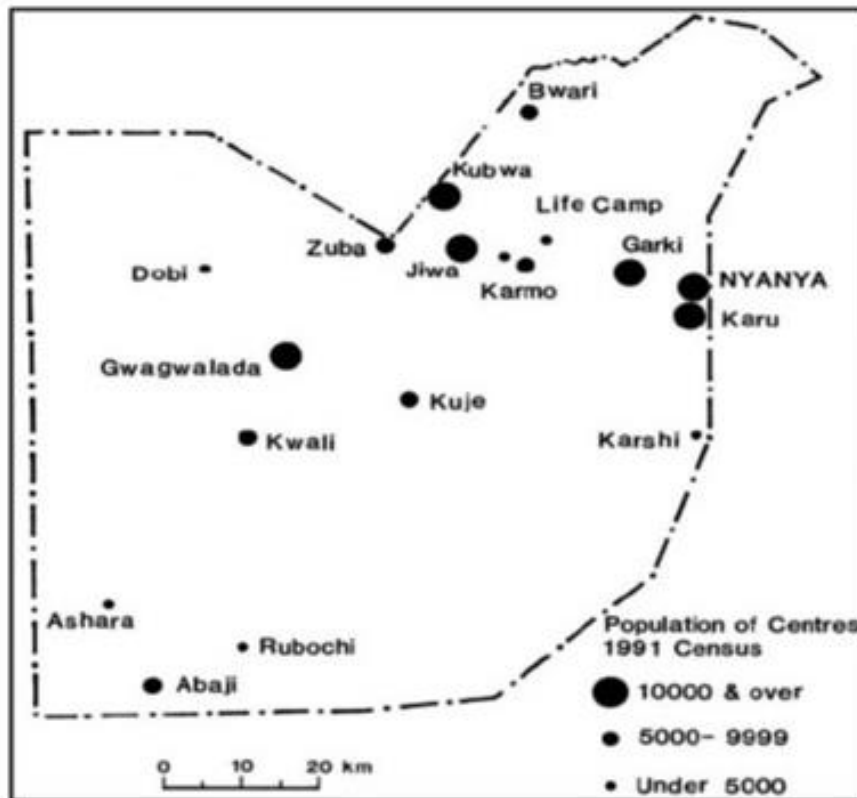
The Gbagyi are the dominant ethnic group in Nigeria's Federal Capital Territory, Abuja. Abuja is centrally located in Nigeria and is situated between latitudes 6° 45' and longitudes 7° 39' north of the equator. Abuja was created out of three neighbouring states of Plateau, Niger and Kwara and has a land area of about 8,000 square kilometres (Fig. 1) (Uchenna, 2013). The city recorded a population of 378, 671 in 1991 census and 1.4 million in 2006 according to the National Population Census. The population of Abuja is expected to be 3,840,000 in 2023 according to the 2023 United Nations world population review.



**Figure 1: Map of Nigeria Showing the 36 states and the Federal Capital Territory Abuja**

Source: Ministry of the Federal Capital Territory (1998).

Abuja is divided into six area councils created in 1984: Abuja Municipal Area Council (AMAC), Gwagwalada, Kuje, Abaji, Kwali and Bwari (Fig. 2). All of the area councils represent the study area of this research because they are home to the indigenous Gbagyi people who are the dominant ethnic group with the largest single ethnic population in Abuja (Federal Ministry of Environment 2001, p. 5 and 36). The Gbagyi people are predominantly farmers, and the women are predominantly engaged in pottery and weaving (Ichaba, 2017).



**Figure 2: Map of Abuja showing population distribution and the area councils of Gwagwalada, Kuje, Abaji, Bwari and Kwali occupied by the Gbagyi people**

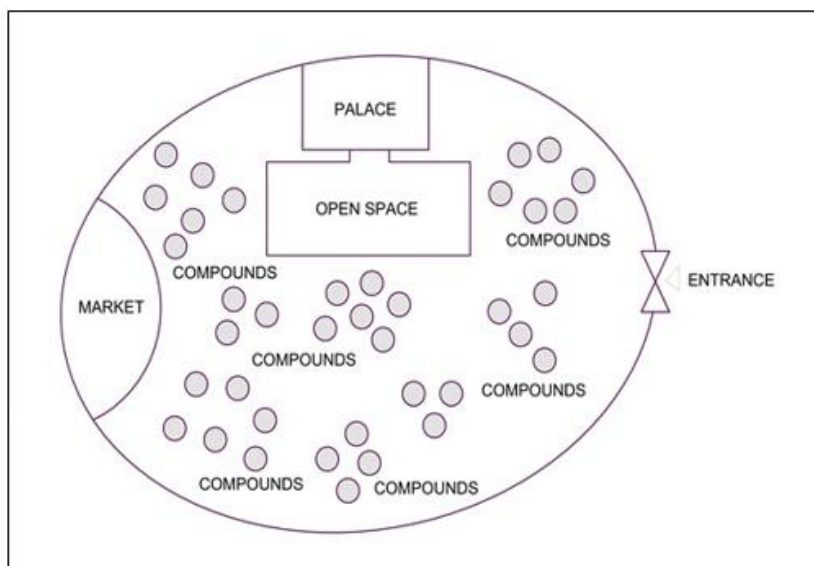
Source: Ukwu (2021) (Drawing by Katrina Strömdahl).

### Traditional Gbagyi Settlement Pattern

The need to maintain close family ties and the quest for vast agricultural lands, compelled the Gbagyi people to live in rural communities which were characterized by nucleated and scattered settlements. Being predominantly farmers, the people preferred scattered settlements with large expanse of rich agricultural land which could sustain shifting cultivation, a popular agricultural method in the area. Also, for security reasons, the people lived close to their nuclear and extended families. Another remarkable feature of the Gbagyi settlement pattern was the existence of city walls or defensive earth works which surrounded such settlements. These city walls cover several kilometers around settlements like Kuje, Karshi and Kawu. The Gbagyi settlement pattern have undergone a variety of changes due to cultural, environmental, security, and administrative factors. In the colonial period, for example, the Gbagyi settlement pattern witnessed accelerated economic and social changes which subsequently brought about changes in the location of settlements, increase in settlement size and functions of settlements (Hocking, 1977). Mainly due to the effects of factors such as the Nupe and Hausa slave raiding which were common during the pre-colonial era in the region, and the Sokoto Jihad of 1804, some of

the settlements in the region were either walled, located on hill tops or within forests. The hill tops or forests provided natural defensive mechanism for the people (Idrees and Ochefu, 2002). Typical examples of such settlements are old Karshi, old Garki and Kawu. Features such as perimeter fence, location on hill tops and communal settlement as seen in figure 3 facilitated socio-economic activities such as farming, trading and ceremonies. They also offered a safer haven from slave raiders, and other external aggressors.

By the beginning of the 20th century when British rule started in the area, colonial policies and the relative peace experienced made some of the people to relocate their settlements from hill tops to the foot of hills, while others moved to more clustered settlements. For example, the Gbagyi of old Garki were said to have moved from their hill top settlement in the old Garki village beside the present day Garki cemetery (near the Apo Legislative village) to the present Garki village settlement which is on the lowland (Ichaba, 2017). In response to several factors; some of which include religion, culture, political decisions and survival economics, the Gbagyi traditional settlement and compound assume similar pattern as shown in Figure 3.



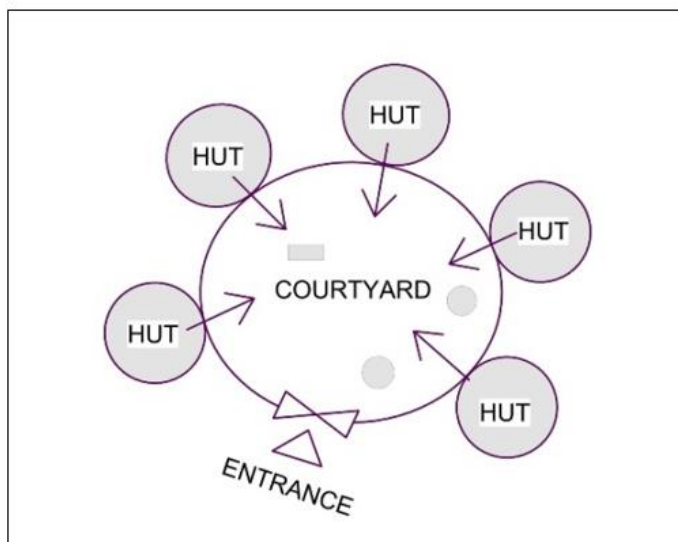
**Figure 3: A typical Gbagyi Traditional Settlement in the Pre-Colonial Period**

Source: Adapted from Mai and Shamsuddin (2006).

Software: Revit Architecture (Version 2017).

### Elements of Gbagyi Architecture

The Gbagyi traditional compound is characterized by the concept of courtyard housing, plot demarcation or residential boundaries, and location. A courtyard is a common physical feature in most Gbagyi dwellings, with the arrangement of rooms around one or more courtyards being typical of Gbagyi housing (Fig. 4).



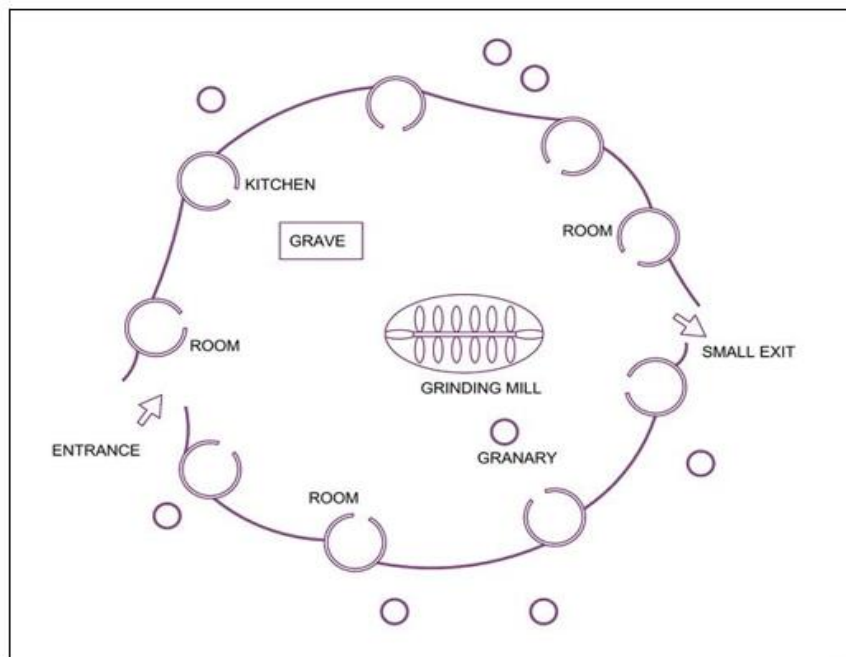
**Figure 4: Gbagyi Pre-Colonial Courtyard Housing Concept**

Source: Adapted from Balogun (2001).

Software: Revit Architecture (Version 2017).

The major elements of a typical Gbagyi traditional building pattern include the curvilinear form of the compound and buildings, the mud perimeter fence, the courtyard, centralized food granary centralized grinding mill, presence of grave(s) and stacked log of firewood. The curvilinear huts were arranged in a manner that formed a curvilinear compound and centralized courtyard that accommodated the granary, grinding mill, grave and firewood. All were enclosed in a mud perimeter fence for security reasons. Usually, the head of the family and the male children had separate huts, while the women and children were accommodated together in separate huts. The number of huts in a compound was determined by the size of the family. The men who were mostly farmers stored their harvests in the granary from where the women picked for meal preparation. The space beneath the suspended granary served as pen and accommodated livestock. The women used the grinding mill to crush vegetable spices and seeds into paste and powder for cooking purposes. Cooking was carried out using firewood obtained from firewood logs often harvested from the forests and stacked at a corner in the courtyard. The Gbagyi people buried members of the family in the courtyard in a usually marked and decorated grave. The courtyard was a prominent feature in the Gbagyi traditional building pattern (Figures 5, 6, 7 and 8).

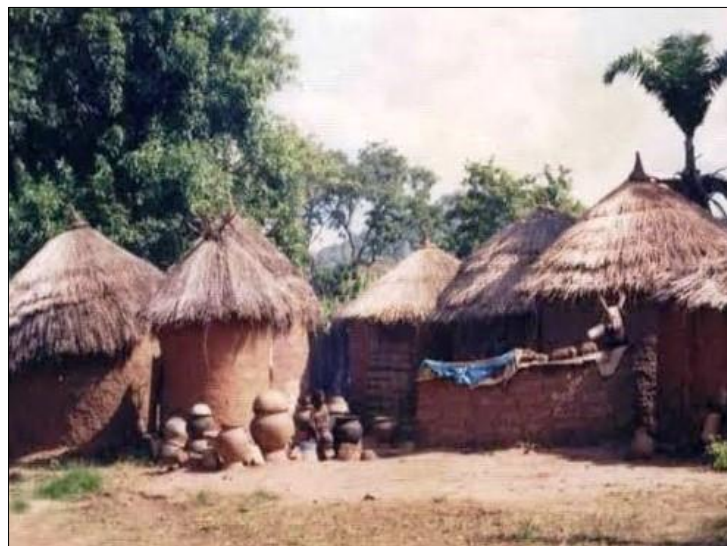




**Figure 5: Plan of typical pre-colonial Gbagyi Compound**

Source: Adapted from Balogun (2001).

Software: Revit Architecture (Version 2017).



**Figure 6: Typical pre-colonial Gbagyi compound in Zuma, Bwari Area Council**

Source: Field survey (2023).





**Figure 7: Traditional Gbagyi granary in Ushafa, Bwari Area Council**

Source: Field survey (2023).

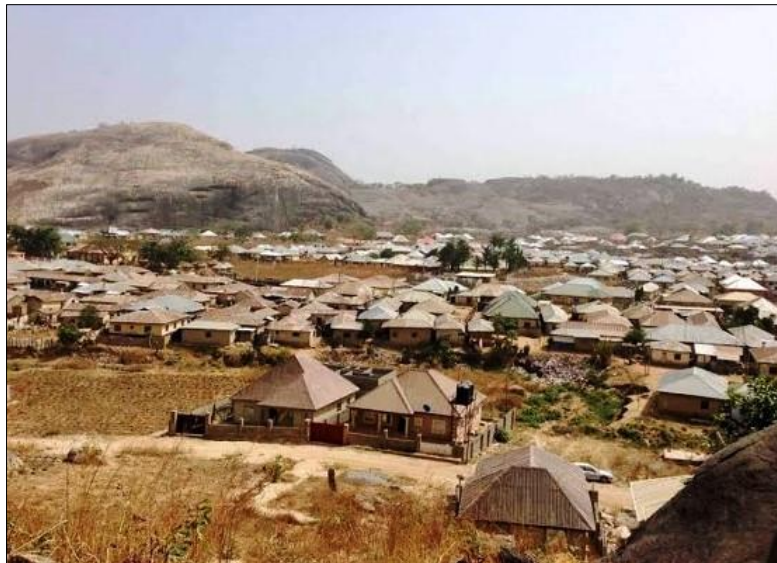


**Figure 8: Pre-colonial Gbagyi courtyard in Karshi, Karshi Area Council**

Source: Field survey (2023).

The high demand for housing in Abuja has led to the modification of traditional dwellings in many parts of the city and suburban settlements, including colonial and post-colonial Gbagyi compounds and settlements. However, after 1992, only a few areas, such as Ushafa, Gishiri, Kuje, Karu, Nyanya, and Jikwoyi settlements retained their agrarian residential features,

including spacious courtyards and granaries. Of these areas, KaruZhimi is particularly noteworthy, as it still maintains the traditional rural values of the Gbagyi people despite being situated within an urban setting. These values are reflected in the continued occupation of extended family dwellings and the keeping of livestock, poultry, and backyard gardens (Mai and Shamsuddin, 2006). A typical Gbagyi post-colonial settlement is indicated in figure 9 below.



**Figure 9: Post-colonial Gbagyi settlement in Ushafa, Bwari Area Council**

Source: Field survey (2023).

### **Changes in Gbagyi Traditional Building Pattern since Pre-colonial Period**

Before the colonial period, the rural housing norm was followed in the socio-economic organization of the built environment, which was characterized by clustered and concentric spatial patterns. Traditional clustered fabric was formed by houses and other structures built during this period. The houses were directly connected to the communal courtyard and had no direct connection to the outside. They were built with mud and roofed with thatch, and were adjacent to other houses on at least two sides, with the back forming part of the periphery protecting the inner courtyard. Vacant land or empty grounds between the old structures were reserved for future expansion, in line with the Gbagyi concept of growing houses. Balogun (2001) labeled the modified peasant house, which typified the residential unit from 1976 to 1986, as the Gbagyi ideal dwelling. Three housing typologies associated with this stage are the Gbagyi Christian compound, Gbagyi Pagan compound, and Gbagyi Muslim compound.

The typical Gbagyi compound in the pre-colonial era, as shown in Figure 3, differed from the modified Muslim urban type primarily in the hierarchy of spaces. The Muslim type segregated men from women through territorial domains, while the non-Muslim typical type maintained less strict privacy within the compound. The territorial boundary was limited to deterring

intrusion from the outside only, and visual privacy was more interior than exterior once inside the compound. Other differences noticed include the following; unlike the curvilinear form of the Gbagyi pre-colonial compound, the modified Muslim compound has a rectilinear form. In the Gbagyi pre-colonial compound, the granaries were located in the centre of the compound, while they are located outside the compound in the modified Muslim compound. Also, the apartment of the compound head is located away from the entrance in the modified Muslim compound unlike in the Gbagyi pre-colonial compound where the hut of the compound head was located at the entrance of the compound (Mai and Shamsuddin, 2006). During the pre-colonial era, Gbagyi compounds centered on the family granary which was the focal point of the kitchen and other facilities that radiated around it. Gbagyi and Hausa Muslims in Nigeria also avoid straight residential entrances to ensure the privacy of secluded women. Recently, a new physical typology has emerged, which combines residential and commercial uses in the same location. These developments have shops located next to the main road and rental rooms surrounding inner courtyards, providing an additional source of income for property owners and tenants (Mai and Shamsuddin, 2006).

The prominent attribute of Gbagyi housing is the presence of a courtyard system, which managed to remain intact despite modifications made during the colonial period. This indicates that some of the essential values were retained, while peripheral values were lost due to urbanization and associated acculturation. The spatial setting is distinguished by "space specialization," characterized by high-density furnishings utilized primarily by tenants. The rural space organization's multifunctional nature is replaced by specialized spatial organization. The field survey conducted by the author revealed various modification patterns typical of the study area, which include slight functional adjustments; additions and divisions to increase the number of rooms for rental; extensions; complete conversion for commercial use; and total reconstruction involving demolition and reconstruction using new materials and technology.

### **Factors Responsible for the Changes in Traditional Gbagyi Building Pattern**

As observed by Ekhaeseet *al.* (2015), Chukwu (2015), Umar (2017), Bert-Okonkwo et al. (2017) and Jolaosoet *al.* (2019), several factors that have been identified to have influenced the changes in the traditional architecture of major ethnic groups in Nigeria are; economic, social, environmental, administrative and foreign influence. Most of the factors are common among various ethnic groups, however, the major factors that have featured prominently in the modifications/changes in Gbagyi architecture include;

- (1) Impact of Government Policies on Land Tenure Transformation:** During the colonial period, there were attempts to change the communal ownership of land to public (government) ownership, which were further strengthened by the land use decree of 1978 and the land use act of 1992. As a result of the decline of the subsistence agricultural system and the emergence of Local Government Councils and State Governments, many residents of villages began to migrate to urban centers in search of work. This led to a situation where the village's primary means of livelihood was no longer agriculture, weakening the peasants' attachment to the land (Mai, 2006).

- (2) **Diminishing Powers of Traditional Authorities:** In the past, Gbagyi communities were self-sufficient and connected to larger units beyond their immediate communities. They had relationships with nearby townships and were involved in national politics at the local, state, and federal levels of government. It was necessary for them to establish such connections to gain access to resources and support from external sources. Today, the structure has changed as a result of formal politics where the powers of community leaders are limited (Mai, 2006).
- (3) **Shifts in Occupational Patterns:** According to Gwamna (1989:83), the process of transition from land as the sole means of livelihood for the community to other sources of income and status began with the arrival of colonialism and Christianity in 1911. During this period, a significant proportion of villagers had become employed by the government, schools, churches, European households, and commodity buying agents in various clerical and domestic roles. As a result, land gradually lost its importance as the primary source of livelihood.
- (4) **Introduction of Foreign Building Design and Construction Materials:** The colonial building culture introduced the two-storey construction, which was first seen in Badagry, Lagos in 1852 (Osasona and Hyland, 2006). This architectural style gradually spread across Western Nigeria, the North Central region, and eventually to Gbagyi land, which was geographically close to Western Nigeria. Building materials such as cement, roofing tiles, iron sheets, processed timber, and synthetic paints were imported from Britain, and local unskilled labor was used with expatriate expertise to create these buildings. As a result, local builders gained new building skills and were able to produce a range of local interpretations of the colonial building design. This phenomenon was consolidated by the relocation of the federal capital of Nigeria from Lagos to Abuja which was at the time the indigenous home of the Gbagyi people. Traditional building practices were "improved" with more durable building materials and techniques, and more "sophisticated" formal expressions (Osasona, 2007), thus influencing the existing traditional house forms and building designs in Gbagyi land.
- (5) **Influential Socio-Economic Aspects:** The religious beliefs of Gbagyi families had an impact on the distribution of house types in Karu chiefdom, but this could not be easily determined by their physical appearance. Initially, the living conditions were similar for all religious groups, and families had a strong patriarchal structure. However, urbanization led to a shift towards individualism and a monetary society, resulting in weaker family and community ties. The occupancy rate differed in the three significant periods of Abuja. Islamic influence was particularly evident in the architectural forms and planning of houses in the Muslim community. These homes were simple and designed with specialized spaces for privacy, especially for women. This emphasis on privacy may be subjective, as the level of importance given to the seclusion of women varied among different religious groups in Karu. Gbagyi Muslims in Karu were particularly strict about it, while Christians in KaruPeshe were less concerned, and Pagans in KaruZhimi showed the least concern.



## **METHODOLOGY**

This study employed a combination of qualitative and quantitative research methods to gather comprehensive data on the transformation and continuity in the Gbagyi traditional building pattern. The research utilized field survey, oral interview and structured questionnaires to generate both qualitative and quantitative data.

### **Sampling Technique**

The present study utilized a two-part sample selection approach. In the first part, Gbagyi settlements within the developed area of Abuja Municipal Area Council were selected for physical observation. Cluster sampling technique was employed to limit the geographical scope and randomly choose four settlements: Galadimawa, Gucci-goro, Garki, and Gunduma villages. These settlements were selected because of their significance in the close interplay between traditional Gbagyi settlements and modern development, with the original settlements transformed into urban slums. The use of cluster sampling was necessitated by the dispersed and widespread population of the Gbagyi people across and around the FCT, as well as the homogeneity of the Gbagyi settlements in terms of cultural and architectural characteristics.

Furthermore, purposive sampling was employed to select compounds/households within these settlements that demonstrated building patterns associated with the pre-colonial, colonial, post-colonial, and contemporary eras. According to Baba (2016), the density of these settlements resulted in approximately 60 households per hectare, and with an average of 35 hectares of land per settlement, the total number of households in the four settlements was estimated to be 8,400. From these, 100 compounds/households were purposively identified (25 from each settlement) using Yamane's formula for sample size determination, with a margin error of 5%. The 100 compound/households selected formed the basis for physical observation and participant selection for oral interviews. Stratified sampling technique was also employed to divide the selected compounds/households into four strata according to pre-colonial, colonial, post-colonial and contemporary building pattern for comparative analysis.

Regarding the human aspect of the study, structured questionnaires were distributed to a total of 400 participants across the four selected settlements. The valid response rate was 87%, with 348 completed and retrieved questionnaires. The sample size was determined using Yamane's formula, considering a population size of 42,000 (the average population of the four settlements according to Baba, 2016), and a margin error of 5%. These sampling techniques, including cluster sampling, purposive sampling, and stratified sampling, were employed to ensure a representative and comprehensive selection of settlements, compounds/households, and participants for the study.

### **Qualitative Data Collection**

Qualitative data was collected from semi-structured interview and physical observation. The interviews were conducted as guided discussions centred on themes synthesized from existing literature and aligned with the study's objectives. Five compound/household heads were purposively selected from each settlement for interviews. Therefore, a total of 20 participants

were interviewed. The participants were aged 50 years and above, and have resided in the settlements for over 10 years, and possessed knowledge of Gbagyi history and building patterns. The interview data was documented manually. The physical observation examined building forms, materials, and spatial arrangements across the pre-colonial, colonial, post-colonial, and contemporary eras. It provided data on the types and materials of foundation, wall, floor, column, beam, openings, ceiling, roof truss, roof covering, fence, finishing, and others like electrical and mechanical fittings. The observation made on compounds and buildings as well as documentary analysis were recorded using pencil and sketch/note pads in the form of sketches and drawings and texts and photographs using photographic materials.

### **Quantitative Data Collection**

Quantitative data was collected using structured questionnaire. The questionnaire was administered to individuals who had resided in the settlements for a minimum period of 10 years and possessed adequate knowledge and experience regarding the origin and development of Gbagyi building. Other respondents considered were building artisans and professionals in the building industry. The questions in the questionnaire were grouped in two sections. The first section was designed to collect data on the demography of the respondents while the second section consisted of closed-ended questions specifically designed to collect data on the following aspects based on the research questions posed by the study: (i) elements of Gbagyi traditional compound; (ii) traditional Gbagyi building pattern; (iii) nature of transformation or continuity in the Gbagyi traditional building pattern since colonial era; (iv) factors responsible for the transformation or continuity in the Gbagyi traditional building pattern in the period under review. Some questions in the questionnaire had choices that used the Likert type scale of '1' for Strongly Disagree '2' for Disagree, '3' for Not Sure, '4' for Agree and '5' for Strongly Agree. The following weight were assigned; very low impact=1, low impact=2, average=3, high impact=4, very high impact=5. Other questions required the respondents to tick a box where there are multiple alternative choices. The questionnaire also had open-ended question intended to collect respondents' opinion on the influence of modern architecture on Gbagyi traditional building pattern.

### **Data Analysis**

The interview data was subjected to thematic analysis, which involved identifying patterns within the data and correlating them with structured classifications obtained from the surveys. Field surveys involved independent observations of compounds and buildings exhibiting Gbagyi building patterns across different eras, focusing on elements such as spatial organization, house forms, building materials used, and construction processes. The questionnaire data was processed using a computer, and the Statistical Package for the Social Sciences (SPSS) was employed for analysis. Descriptive analysis, including frequencies and percentages, was conducted to analyse the distribution of questionnaire responses across various categories. The results were presented using tables.



## RESULTS AND FINDINGS

The results and findings derived from the literature review, quantitative studies and qualitative studies are presented in three sections:

### Findings from Literature

The findings from literature review are in tandem with the findings obtained from the quantitative and qualitative studies and are as follows;

- (1) The Gbagyi people were primarily engaged in agriculture and inhabited scattered communal settlements before the colonial period.
- (2) The traditional Gbagyi building pattern during the pre-colonial and colonial eras displayed curvilinear compound and building layouts. However contemporary trends have shifted towards linear/grid settlement patterns and irregular compound/building forms.
- (3) Courtyard housing was a prevalent feature in Gbagyi dwellings, characterized by rooms arranged around one or more courtyards, representing the typical Gbagyi housing style.
- (4) Key elements of the Gbagyi traditional building pattern included curvilinear compounds and huts, mud perimeter fences, and courtyards. The courtyard emerged as a prominent architectural feature.
- (5) Traditional Gbagyi compounds showcased centralized food granaries, grinding mills, and the presence of graves and stacked firewood logs. The granary held particular significance as the most prominent feature.
- (6) The socio-economic conditions and socio-cultural values associated with original Gbagyi settlements and building patterns underwent significant transformations following the area's conversion into a federal capital.
- (7) The Gbagyi traditional building pattern has experienced modifications and adaptations to accommodate diverse occupants and businesses, reflecting influences from modern architecture and evolving societal demands.
- (8) Factors such as education, religion, white-collar jobs, government policies, and the introduction of foreign architectural designs and materials have contributed to the observed changes in the traditional Gbagyi building pattern.
- (9) The original Gbagyi pre-colonial settlement and building pattern are no longer prevalent today, signifying a shift in architectural practices as a result of the influence of modern architecture.

### Findings from Quantitative Studies

**Findings from Questionnaire:** The findings obtained from questionnaire analysis that are relative to the research objectives are presented in frequency tables as illustrated below; The demographic characteristics of the sampled respondents have been captured in table 1.

**Table 1: Demography Characteristics of Respondents**

Gender	Frequency	Percentage
Male	45	65
Female	24	35
<b>Total</b>	<b>69</b>	<b>100</b>
Age	Frequency	Percentage
Below 18 years	4	5.8
19 – 40 years	24	34.8
Above 40 years	41	59.4
<b>Total</b>	<b>69</b>	<b>100</b>

Source: Field survey (2023)

According to data in table 1, 65 percent of the respondents were males, while 35 percent were females. A greater proportion of the respondents were within the ages of 40 years and above representing 59 percent. This category of respondent are expected to have lived in the study area almost all their lives, and would be most conversant with Gbagyi traditional building pattern. This will impact positively on the research outcome.

**Table 2: Pre-colonial Gbagyi Building Pattern**

Respondents	Frequency	Percentage
Circular cluster with courtyard	69	100
Rectilinear cluster with courtyard	0	0
Single unit housing	0	0
<b>Total</b>	<b>69</b>	<b>100</b>

Source: Field survey (2023)

Table 2 shows the result of the respondents' view on the original Gbagyi traditional building pattern. All the respondents (100%) indicated that the pre-colonial Gbagyi building pattern is the circular curvilinear form. This result also corroborates with the results from literature review, oral interview and field survey which also confirmed that the circular curvilinear pattern is the original pattern of the Gbagyi building pattern.

**Table 3: Contemporary Gbagyi Building Pattern**

Respondents	Frequency	Percentage
Circular cluster with courtyard	0	0
Rectilinear cluster with courtyard	1	1
Mixed-use housing	4	6
Single unit housing	64	93
<b>Total</b>	<b>69</b>	<b>100</b>

Source: Field survey (2023)

According to the results in table 3, 64 respondents which represent 93% believe that the single unit housing is the most form of housing pattern used by Gbagyi people today. This result also corroborates with the results from literature review, oral interview and field survey which also confirmed that the pre-colonial Gbagyi circular building/compound pattern has transformed

into single unit housing in the contemporary period. This is the current situation with all Gbagyi settlements especially those of Mabushi, Bwari, Ushafa, Kuje, Garki, Karshi to mention a few. They all demonstrate expressions of modern architecture especially in building design and materials.

**Table 4: Most Prominent Gbagyi Traditional Building Feature**

Respondents	Frequency	Percentage
Huts	11	16
Courtyard	52	75
Perimeter fence	1	2
Compound form	5	7
<b>Total</b>	<b>69</b>	<b>100</b>

Source: Field survey (2023)

The result in table 4 revealed that 52 respondents which represent 75% believe that the courtyard was the most prominent Gbagyi traditional building feature. This result also supports the results from literature review, oral interview and field survey.

**Table 5: Most prominent Gbagyi Traditional Compound Feature**

Respondents	Frequency	Percentage
Grinding mill	20	29
Granary	37	54
Grave	3	4
Fire wood	9	13
<b>Total</b>	<b>69</b>	<b>100</b>

Source: Field survey (2023)

The result in table 5 shows that 37 respondents which represent 54% chose granary as the most prominent Gbagyi traditional compound feature. However, a significant percent (29%) of the respondents believe that the grinding mill was the most prominent feature. This phenomenon was also observed from the interview data, but it was further discovered that most women chose the grinding mill as most prominent, and this is understandable as the grinding mill is the most important and relative feature to women's activities of food processing. That notwithstanding, the granary was adjudged to be the most prominent Gbagyi traditional compound feature.

**Table 6: Most prominent Gbagyi Traditional Building Material**

Respondents	Frequency	Percentage
Sandcrete block/Concrete	0	0
Earth/Mud	68	99
Timber	1	1
Glass	0	0
<b>Total</b>	<b>69</b>	<b>100</b>

Source: Field survey (2023)

The result in table 6 revealed that 68 respondents which represent 99% believe that earth/mud was the most prominent Gbagyi traditional building material. This result also supports the

results from literature review, oral interview and field survey that earth/mud was most prominently used in the construction of pre-colonial Gbagyi buildings.

**Table 7: Most Prominent Contemporary Gbagyi Building Material**

Respondents	Frequency	Percentage
Sandcrete block/Concrete	69	100
Earth/Mud	0	0
Timber	0	0
Glass	0	0
<b>Total</b>	<b>69</b>	<b>100</b>

Source: Field survey (2023)

It can be deduced from table 7 that all the respondents (100%) believe that sandcrete blocks/concrete are the most prominent building materials used by Gbagyi people today. This result validates the results obtained from literature review and the qualitative data analyses which also confirmed that sandcrete blocks/concrete are most prominently used in the construction of buildings by Gbagyi people today. This also highlights the transformation in the use of building materials between the pre-colonial period and today, and this subsequently changed the Gbagyi traditional building elements and features.

**Table 8: Most Influential Factor Responsible for Changes in the Gbagyi Traditional Building Pattern and Settlement**

Respondents	Frequency	Percentage
Modernization	67	97
Climatic factor	0	0
Socio-economic factor	0	0
Government policy	2	3
Environmental factor	0	0
<b>Total</b>	<b>69</b>	<b>100</b>

Source: Field survey (2023)

According to the findings in Table 8, 67 respondents which represent 97% believe that modernization is the most influential factor responsible for changes in the Gbagyi traditional building pattern and settlement. This result also corroborates with the results from literature review, oral interview and field survey that modernization of several aspects of their lifestyle greatly changed the Gbagyi traditional building/compound and settlement pattern. The transforming effect of modernization on the Gbagyi culture and architecture is understandable because of the presence of the Federal Capital Territory in the area once occupied by the Gbagyi people, this resulted in the proliferation of foreign culture, foreign building designs and building materials including modern jobs. All these influenced the architecture in Gbagyi land.

## Findings from Qualitative Studies

*Findings from Interviews:* The interviews were conducted to corroborate the findings from the questionnaire and field survey. The following were deduced from the interviews when aggregated:

### (1) Elements of the Traditional Gbagyi Compound

- The traditional Gbagyi compound displayed a circular arrangement of clustered buildings, reflecting cultural hierarchy and communal living. The number of huts within the compound varied based on family size.
- An open courtyard served as a central space within the compound, accommodating various domestic and socio-economic activities.
- The presence of a granary in the courtyard allowed for the storage of food resources.
- A grinding mill was positioned within the courtyard, facilitating food processing activities.
- Symbolizing a spiritual connection between the deceased and the living, graves were observed within the courtyard.
- Logs of firewood were stacked in the courtyard, providing a readily available fuel source for cooking and sometimes serving commercial purposes.
- The compound was enclosed by a perimeter fence constructed with mud walls.

### (2) Features of the Traditional Gbagyi Building Pattern

- The traditional Gbagyi building form exhibited a curvilinear design, characterized by a maximum diameter of 3 meters and a headroom not exceeding 2.5 meters.
- Construction materials primarily consisted of puddled mud reinforced with vegetable fibres, ensuring structural stability.
- Thatched roofs were constructed using timber trusses, reflecting traditional roofing practices.
- The building incorporated a single timber window and a bamboo door of limited sizes, supported by timber lintels.
- The floor was composed of puddled mud and finished with a mixture of termite dung paste. A depression in the floor accommodated hot coals, providing warmth to the bamboo bed during colder seasons.
- To achieve a smooth surface and facilitate water runoff, the exterior walls were finished with boiled shells of locust bean.

(3) The interviews further revealed the nature/phases of changes in the Gbagyi traditional building pattern. Table 9 below shows the features of Gbagyi traditional building pattern, period, and nature of changes, continuity or transformation.

**Table 9: Table Showing the Features of Gbagyi Traditional Building Pattern, Period and Nature of Changes, Continuity or Transformation**

S/ no	Building pattern/ Feature	Period			
		Pre-colonial period Period before 1860	Colonial period (1860 – 1960)	Post-Colonial period (1960 – 1975)	Contemporary period (1975 – 2023)
1.	Compound form	Curvilinear	Rectilinear	Irregular	Irregular
2.	Building Form	Curvilinear	Rectilinear	Irregular	Irregular
3.	Building Arrangement	Circular cluster with courtyard	Rectangular cluster with courtyard	Linear/Grid	Linear/Grid
4.	Wall	Puddled mud	Puddled mud	Sandcrete block/Concrete	Sandcrete block, concrete, timber, glass and aluminium
5.	Floor	Puddled mud	Puddled mud	Concrete, cement/sand Screed.	Concrete, cement/sand screed
6.	Roofing Sheet	Thatch	Galvanized iron	Galvanized iron, Aluminium and Asbestos sheets	Aluminium, concrete and polycarbonate sheets
7.	Roof Truss	Timber	Timber	Timber	Timber and Steel
8.	Wall Finish	Puddled mud and locust bean shell	Puddled mud and locust bean shell	Cement/sand screed, paint and tiles	Cement/sand screed, tiles, paint, timber, aluminium, glass and pop.
9.	Floor Finish	Puddled mud and termite dung	Mud and termite dung	Cement/sand screed, tiles.	Concrete, cement/sand screed, tiles, timber, granite, terrazzo.
10.	Courtyard	Circular courtyard	Rectilinear courtyard	No courtyard	No courtyard.
11.	Granary	Presence of exterior granary	Presence of exterior granary	Interior Store	Interior Store
12.	Grinding Mill	Presence of exterior grinding mill	Presence of exterior grinding mill	Use of interior blending machines and public grinding machines	Use of interior blending machines and public grinding machines
13.	Firewood Stacking	Presence of stacked firewood in the courtyard for cooking	Presence of stacked firewood in the courtyard for cooking	Use of kerosene stove for cooking	Use of Kerosene stove and gas cooker for cooking.
14.	Kitchen	Open air cooking space	Detached temporary structure	Detached temporary structure and interior kitchen	Interior kitchen
15.	Wc/Bath	Open air toilet	Open air toilet	Exterior pit toilet	Interior wc/bath



		and bathroom	and bathroom	and bathroom	
16.	Door	1. Bamboo. 2. Limited size and number of doors.	1. Timber 2. Limited size and number of doors.	1. Timber and steel. 2. Increase in size and number of doors.	1. Timber, steel, aluminium and glass. 2. Increase in size and number of doors.
17.	Window	1. Timber. 2. Limited size and number of windows.	1. Timber, 2. Increase in size and number of windows.	1. Timber and steel. 2. Increase in size and number of windows.	1. Timber, steel, aluminium and glass. 2. Increase in size and number of windows.
18.	Lintel	Timber	Timber	Concrete and steel rods	Concrete and steel rods
19.	Perimeter Fence	Puddled mud	Puddled mud	Galvanized iron	Sandcrete block/concrete
20.	Grave	Presence of decorated grave in the courtyard	Presence of decorated grave in the courtyard,	1. No grave in the courtyard. 2. Corpses are buried in the cemetery. Only in few cases you find graves in compounds.	1. No grave in the courtyard. 2. Corpses are buried in the cemetery.

Source: Field survey (2023)

Table 9 shows that there has been transformation of the traditional Gbagyi building pattern since pre-colonial period as shown in the changes with respect to building form, building materials and building features.

(4) The interviews further revealed that the aspects of Gbagyi traditional building pattern that are continually practiced today are influenced by economic factors which include the inability to afford modern/foreign building materials and technology. And this is prevalent in the interior villages of Abuja occupied by the indigent Gbagyi people. Timber was considered to be the only Gbagyi traditional building material that is still used today due to its availability, low cost, ease of application, durability and its dynamic nature in blending with modern architecture.

However, modernization played a significant role in the changes in the Gbagyi traditional building pattern as a result of the following factors;

- Policies of the Federal Government such as planning and development control of building construction which led to the confiscation of indigenous farmlands. Also, the proliferation of modern education and white collar jobs greatly affected the Gbagyi socio-economic activities mainly farming, and consequently eroding features of the Gbagyi traditional compound such as granary because it was the most prominent feature that is related to farming activities.

- Migration of people of other ethnic groups into the new FCT Abuja. Beside foreign and government-built modern structures, these people along with their various culture and traditional building pattern and others who adopted modern/foreign building designs to fit into the new FCT, all contributed to influence the Gbagyi culture and traditional building pattern.
- The housing deficit in the FCT to cope with the influx of migrants and visitors necessitated the indigenous Gbagyi people to modify their houses especially the compound features, to provide tenancy services. For example, the Gbagyi people have changed from burying their dead in the compounds to burying them in the cemetery. This is because the presence of graves in a compound hampers the ease of allocation of the property to prospective buyers and tenants.
- Influence of the modern religions of Christianity and Islam. Gbagyi Muslims for example introduced mosques in their compounds, separated the spaces for women from that of the men according to the tenets of Islam, and sometimes copied the features of Islamic architecture such as the arches. All these changed the pattern of the Gbagyi traditional building.
- Influence of modern architecture which include introduction of modern building materials especially because of their perceived advantages over Gbagyi traditional building materials.

## DISCUSSION OF FINDINGS

The study sought to investigate the response of Gbagyi traditional building pattern to modern architecture through a combination of literature review, questionnaire analysis, physical observation and oral interview. The integration of these multiple sources of data provides a comprehensive understanding of the dynamics and changes in Gbagyi architecture over time.

The demographic characteristics of the respondents indicated a higher representation of males, possibly reflecting their active involvement in decision-making processes regarding traditional building practices. Additionally, a significant proportion of respondents aged 50 years and above, who have lived in the study area for an extended period, were observed. This age group's presence is crucial as they would be most conversant with the traditional Gbagyi building pattern, contributing to the research outcome's accuracy and reliability.

The pre-colonial Gbagyi building pattern was found to be characterized by a circular curvilinear form, consistent with historical accounts of most ethnic groups in Nigeria ( Hausa, Tiv, Berom, Igala, Nupe) documented in the literature and as indicated in previous studies (Agboola and Zango, 2014; Emusa and Nduka, 2018; and Qurix and Sagada, 2022). This circular cluster with a courtyard layout exemplifies the cultural hierarchy and communal living prevalent among the Gbagyi people during that era. The circular form of housing was representative of their traditional architecture and played a significant role in shaping their communal lifestyle.

However, in the contemporary period, as a result of the influence of modern architecture, the Gbagyi traditional building pattern has undergone substantial changes. The dominant form of housing today is the single-unit housing, showcasing a shift away from the original circular cluster pattern. This transformation aligns with the influence of modernization, reflecting the impact of external forces on traditional architectural practices. The growing trend of single-unit housing also corresponds to the global shift towards modern architectural styles and urbanization.

The courtyard emerged as the most prominent traditional building feature, playing a central role in accommodating domestic and socio-economic activities. The courtyard's importance in the traditional Gbagyi compound cannot be understated, as it fosters a sense of community and cultural identity. It remains a vital element, even in the contemporary period, although its functions have evolved with changing lifestyles and needs.

Within the traditional Gbagyi compound, the granary was identified as the most prominent feature. Serving as a crucial structure for food storage, the granary held significant cultural and practical value. However, it is notable that the grinding mill also held importance for women engaged in food processing activities. This finding reflects the gender-specific roles within the community and underscores the significance of traditional practices in shaping gender dynamics. However, the proliferation of white collar jobs and confiscation of the peoples' ancestral lands by the Federal Government for developmental purposes have shifted the peoples' economic activities from farming, consequently removing the granary and grinding mill from contemporary Gbagyi building pattern.

The predominant use of earth/mud as the traditional building material further highlights the Gbagyi people's reliance on locally available resources. Earth/mud offered thermal insulation and was readily accessible, making it a sustainable choice for construction. However, in the contemporary period, there has been a significant shift towards sandcrete blocks/concrete, driven by the influence of modern architecture and the introduction of new building technologies. The adoption of sandcrete blocks/concrete reflects the influence of external factors and the integration of modern materials into traditional practices.

Modernization emerged as the most influential factor responsible for the changes in the Gbagyi traditional building pattern and settlement. The presence of the Federal Capital Territory in the area previously occupied by the Gbagyi people has facilitated the influx of foreign cultures and modern architecture. The influence of modernization has led to the proliferation of sandcrete blocks/concrete as the primary building material and the rise of single-unit housing as the dominant form of construction.

Overall, the findings from this study provide a comprehensive understanding of the transformation of Gbagyi architecture over time. The shift from circular curvilinear patterns to single-unit housing, the significance of courtyards and granaries, and the transition from earth/mud to sandcrete blocks/concrete all highlight the dynamic nature of traditional building practices in response to modern architecture. The findings of this study are in line with previous studies by Bert-Okonkwor et al. (2017); Jolaoso et al. (2019); Ekhaese et al. (2015); and Emusa

and Nduka (2018), which also observed the fusion of African and European styles in various aspects of life, including religion, education, social dynamics, family structure, and architecture. The adoption of modern and foreign building materials and technology, the prevalence of single-unit houses, and the decrease in family sizes are evident examples of this hybridization.

## CONCLUSION AND RECOMMENDATIONS

This study focused on the transformation of the Gbagyi building pattern in the FCT Abuja region. The major factors that led to this change were government policies, modernization of the area, and the influx of people from different parts of the country. As a result, traditional Gbagyi housing shifted from a communal pattern of circular huts with courtyards in the pre-colonial period to individual apartments without courtyards, often with commercial spaces, as seen in present Gbagyi settlements. This shift marked a significant evolution from traditional to modern architecture, reflecting the dynamic interplay between indigenous cultures and external influences in shaping Nigeria's architectural heritage. The research underscores the dynamic relationship between cultural heritage and contemporary influences in shaping Gbagyi traditional architecture, emphasizing the importance of striking a harmonious balance between preserving cultural identity and embracing progress in modern building designs.

### **Based on the above Conclusion, the Study therefore Proffer the Following Recommendations**

- (1) Determined efforts should be made by the relevant government authorities to provide accurate and adequate information and statistics of Gbagyi settlements in the FCT Abuja especially as it relates to their original and current situations.
- (2) This study recommends that more and in-depth research should be carried out on the specific policies and activities that have influenced Gbagyi building pattern: While the study identified European and Government policies and activities as significant drivers of change, more research is needed to understand how exactly these policies and activities have influenced Gbagyi building pattern. Understanding these specific factors can also help inform policies that preserve traditional architecture in the face of modernization.
- (3) The study recommends a comparative analysis of the original and current state of Gbagyi traditional architecture with other traditional architecture in Nigeria and Africa to identify similarities and differences in their response to modernization.
- (4) Efforts should be made to investigate the impact of modernization on the cultural significance of Gbagyi traditional building pattern: The Gbagyi traditional building pattern has significant cultural and symbolic meaning for the Gbagyi people. Future research should analyse the impact of modernization on the cultural significance of Gbagyi traditional building pattern and explore ways in which traditional architecture can be preserved while still meeting contemporary needs.

- (5) Further exploration is required on the social, cultural, and economic factors that have influenced the Gbagyi traditional building pattern: In addition to external influences, social, cultural, and economic factors within the community can also influence traditional architecture. Future research should explore these factors in order to gain a more holistic understanding of the drivers of change.

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#### Statements and Declarations

#### Competing Interests

The authors have no competing interests to declare.

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