
Spatial Mapping And Distribution Of Rural Periodic Markets In Lafia Local Government Area, Nasarawa State, Nigeria

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Abstract

This study examined the spatial mapping and distribution of rural periodic markets in Lafia Local Government Area (LGA), Nasarawa State, Nigeria. The study adopted a descriptive survey design supported by Geographic Information System (GIS), field observation and key informant interviews. Four rural periodic markets, namely Assakio, Agyaragu, Barikin Abdullahi (B.A.D.) and Kwandere, were identified and their geographical coordinates obtained using GPS. The coordinates were processed in ArcGIS to map the spatial distribution of the markets, while field observation and key informant interviews were used to examine their physical and functional characteristics. The findings revealed that the periodic markets are spatially dispersed across different parts of the study area and operate on designated days, namely Monday, Friday, Tuesday and Thursday respectively. Field observations further showed that the markets provide important spaces for the exchange of agricultural produce, livestock, provisions and household goods and serve catchment areas extending beyond their immediate host settlements. However, the markets were characterized by inadequate sanitation, drainage, water supply, storage facilities and basic trading structures. The study concludes that rural periodic markets are important economic and social nodes within the rural commercial system of Lafia LGA, but their functionality is constrained by inadequate infrastructure. The study recommends upgrading basic market facilities and integrating the mapped market locations into rural development and transportation planning to improve accessibility and strengthen their contribution to rural economic development.

Keywords: Geographic Information System, Market Accessibility, Periodic Markets, Rural Markets, Spatial Distribution

INTRODUCTION

Globally, rural markets are important components of local economic systems because they provide spatial platforms through which producers, traders and consumers exchange agricultural commodities, food products, household goods and services. In developing countries, access to markets is particularly important for smallholder producers because market participation provides opportunities to sell agricultural surpluses, obtain production inputs and diversify household income. Recent evidence shows that the ability of small-scale producers to connect with markets is shaped by physical accessibility, transportation, market infrastructure, financial resources and relationships with market actors (Bizikova et al., 2020; Ola & Menapace, 2020). Thus, the geographical location and distribution of markets constitute important dimensions of rural development and economic integration. The spatial organization of rural markets is closely related to accessibility and the movement of people, agricultural products and other commodities. Markets located within relatively accessible areas can serve wider populations because lower travel distances and transportation costs facilitate interaction between buyers and sellers. Conversely, inadequate connectivity can constrain market participation and increase the cost of moving agricultural produce. Evidence from rural areas of developing countries indicates that distance to markets, poor road infrastructure and transportation constraints remain important barriers to market participation among rural producers (Adams et al., 2020; Workman et al., 2020). These relationships demonstrate the importance of examining markets not only as economic institutions but also as spatial entities whose locations influence the accessibility and economic opportunities available to surrounding populations.

Geographical Information Systems (GIS) have increasingly provided an effective means of examining the spatial characteristics of markets and other rural facilities. GIS enables the geographical locations of market centres and settlements to be mapped, visualized and analyzed in relation to road networks, administrative boundaries and other spatial features. For example, a recent geospatial study in India combined census and road-network datasets to assess multidimensional food-market accessibility, using spatial analysis to measure the distance between settlements, markets, major roads and administrative centres (Kumar et al., 2024). Such applications demonstrate the usefulness of GIS for identifying spatial patterns of market distribution, concentrations of commercial facilities and areas experiencing limited market accessibility.

In Africa, rural markets occupy an important position within agricultural and livelihood systems because a large proportion of rural households depend on agriculture and informal economic activities. The ability of smallholder farmers to access markets influences their decisions concerning production, commercialization and participation in agricultural value chains. A review of market relationships in developing regions indicates that small-scale producers interact with traders, processors, retailers and logistics providers through diverse market arrangements, making the availability and accessibility of market outlets an important element of rural economic systems (Bizikova et al., 2020). Similarly, evidence from Zambia shows that changing agricultural and market structures can create additional marketing opportunities for smallholder farmers, demonstrating the importance of proximity and connections to functioning markets (Burke et al., 2020). Recent research in Ghana has demonstrated that poor road infrastructure and inadequate transport services can constrain the movement of people between peri-urban communities and major activity centres, thereby reducing spatial connectivity and accessibility (Adu-Gyamfi, 2020). Such findings underscore the importance of spatial approaches for examining the geographical distribution of commercial facilities and identifying areas where accessibility to markets and other economic services may be limited.

The African rural market system is, however, characterized by considerable spatial inequalities. Differences in road infrastructure, settlement patterns, population distribution and physical distance can

determine the extent to which rural communities are connected to market centres. In northern Ghana, for instance, distance to input markets and poor road networks were identified among the important constraints affecting smallholder farmers' access to agricultural inputs (Adams et al., 2020). Similarly, research on rural transport in Liberia demonstrated that improving access routes can facilitate market integration and improve the movement of people and agricultural products (Workman et al., 2020). These findings suggest that the spatial distribution of markets and the connectivity of the settlements they serve are critical considerations in understanding rural economic development in Africa. Periodic markets are particularly significant within African rural economies because they provide regular but non-permanent points of exchange for populations distributed across relatively large rural areas. Unlike permanent markets that operate continuously, periodic markets function on designated days, allowing traders and consumers to move between different market centres according to established market schedules. Their geographical locations can therefore determine the size and composition of their potential catchment areas. Although periodic markets are widespread across rural Africa, their informal nature and dispersed locations can make systematic spatial documentation difficult.

In Nigeria, rural and periodic markets constitute important elements of the country's commercial and agricultural landscape. They provide spaces where farmers dispose of agricultural produce and where rural households obtain food, consumer goods, farm inputs and services. The functioning of these markets is closely connected to rural transportation and the geographical relationship between settlements and commercial centres. Recent research on Nigerian food markets has demonstrated that spatial relationships between markets are important for understanding market integration and price transmission. Amare et al. (2024), for example, found that the COVID-19 pandemic substantially affected the degree and speed of spatial market integration across Nigerian food markets, particularly for perishable commodities. This evidence demonstrates that markets operate as interconnected spatial systems rather than isolated trading points. The application of GIS to Nigeria's market system has also expanded the capacity to document and visualize market locations. A recent GIS-based study developed an interactive map containing more than 11,000 formal and informal market locations across Nigeria, demonstrating the usefulness of geospatial technologies for understanding the country's food-market infrastructure and supporting spatial decision-making. However, national-level market datasets may not adequately capture the detailed characteristics of rural periodic markets, including their exact locations, market-day patterns, local catchment areas and relationships with surrounding settlements. Consequently, there remains a need for detailed local-scale studies that document and analyze the spatial distribution of periodic markets within specific local government areas.

Lafia Local Government Area (LGA) provides an important geographical setting for examining this issue. As the location of the Nasarawa State capital, Lafia contains an important urban commercial centre while also encompassing numerous rural settlements whose populations engage in agriculture, trading and other livelihood activities. Rural periodic markets such as Assakio, Ashangwa, Agyaragu, Alhamis and B.A.D operate on specific market days and serve communities within and beyond their immediate settlements. The geographical locations of these markets may differ in terms of proximity to roads, settlements and the urban centre of Lafia, potentially producing variations in their spatial accessibility and functional importance. Despite the economic role of these markets, there is inadequate empirical information on their precise spatial locations, distribution patterns and geographical relationships within Lafia LGA. Existing studies on rural markets have generally given greater attention to market participation, accessibility, agricultural commercialization and transportation constraints than to the systematic mapping and spatial analysis of individual periodic markets. This represents an important research gap because identifying where rural periodic markets are located and how they are distributed provides a basis for understanding

the spatial organization of rural commerce and identifying areas that may be underserved by market facilities. Therefore, this study focuses on the spatial mapping and distribution of rural periodic markets in Lafia Local Government Area, Nasarawa State, Nigeria.

Objectives of the Study

- i. To identify and map the spatial distribution of rural periodic markets in Lafia Local Government Area, Nasarawa State.
- ii. To examine the physical and functional characteristics of rural periodic markets in the study area.

EMPIRICAL REVIEW

Empirical studies have demonstrated that the location and spatial distribution of markets are closely associated with accessibility, settlement structure, transportation infrastructure and the economic activities of surrounding populations.

Amare, Abay, & Hatzenbuehler, (2024) investigated spatial market integration using evidence from food markets across Nigeria. The study found that spatial relationships between markets were important in determining the extent and speed of market integration, while geographical distance influenced the interaction between markets. Although the study focused primarily on food-market integration rather than the physical distribution of rural periodic markets, it demonstrates that Nigerian markets operate within interconnected spatial systems. This is relevant to the present study because mapping the locations of periodic markets can provide a geographical basis for understanding their relationships with surrounding settlements and other markets.

In a study of rural accessibility in India, Singh and Sarkar (2022) developed a cumulative opportunity-based accessibility framework to examine differences in access to essential opportunities across rural settlements. Their findings showed that accessibility varies considerably across rural areas depending on the spatial distribution of services and transportation connections. The study demonstrated the usefulness of spatial techniques for identifying settlements with relatively poor access to essential facilities. Although the study was not specifically concerned with periodic markets, its findings are relevant to the present study because rural markets similarly function as geographically distributed service and economic centres.

Agboola (2022) examined the significance of rural markets as public spaces in southwestern Nigeria. Using field-based questionnaires among users of selected rural marketplaces, the study found that rural markets serve important economic, social and cultural functions within their communities. The study further established that periodic marketplaces constitute important spaces for interaction and rural neighborhood development. The findings are relevant to the present study because they demonstrate the multifunctional importance of rural periodic markets and support the need to identify and examine their spatial distribution and physical characteristics in the Lafia Local Government Area.

Manda, Azzarri, Feleke, Kotu, Claessens, & Bekunda, (2021) examined rural market participation among smallholder farmers in Tanzania and reported that physical access to markets, transportation conditions and distance to trading centres influenced farmers' participation in agricultural markets. The study found that households located farther from markets faced greater transaction and transportation costs, which affected their ability to commercialize agricultural produce. The findings indicate that markets are not randomly distributed by economic spaces but form part of a broader rural spatial system involving producers, consumers, roads and settlements. This supports the need to examine the location and distribution of rural periodic markets within a defined geographical area. That is why this study become imperative.

Similarly, Ojo, Diye, Coker, & Ojo, (2021) examined the impact of market access on input use and

agricultural productivity among cereal crop farmers in Niger State, Nigeria. Using data obtained from 250 randomly selected farmers, the study found that improved market access positively influenced the use of agricultural inputs and productivity. The study further established that reducing the time required to reach markets increased cereal farmers' productivity. These findings highlight the importance of the geographical location and accessibility of market centres to rural economic activities and provide a basis for examining the distribution of periodic markets in the present study area.

The reviewed studies collectively demonstrate that GIS and spatial analysis are valuable tools for examining the geographical distribution, accessibility and functional relationships of rural markets and other economic facilities. However, much of the existing empirical literature has concentrated on market accessibility, agricultural commercialization, market integration or rural service provision, with comparatively limited attention given to the actual spatial mapping and distribution of periodic rural markets at the local government level in Nigeria. Furthermore, few studies combine GIS mapping with direct field observation and interviews to document the physical and functional characteristics of individual periodic markets. This gap provides the basis for the present study, which seeks to identify and map rural periodic markets and examine their physical and functional characteristics in Lafia Local Government Area of Nasarawa State, Nigeria.

STUDY AREA AND METHODOLOGY

Study Area

The study was conducted in Lafia Local Government Area (LGA), Nasarawa State, Nigeria. Lafia LGA is located in the central part of Nasarawa State and serves as the administrative headquarters of the state. The LGA lies approximately between latitudes 8°20'N and 8°45'N and longitudes 8°15'E and 8°45'E, covering a land area of about 2,756.44 km². It shares boundaries with neighboring local government areas within Nasarawa State and is strategically connected to other parts of the state and the wider North-Central region through road networks. The area has a tropical continental climate characterized by distinct wet and dry seasons, with rainfall supporting agricultural activities and influencing the timing and intensity of rural commercial activities. The vegetation is predominantly Guinea savanna, while the relatively fertile soils and seasonal rainfall support the cultivation of crops such as maize, millet, guinea corn, yam, cassava and rice, alongside livestock production. These agricultural activities generate substantial demand for local market outlets through which farmers sell produce and purchase household and farm requirements. Lafia LGA has a mixture of urban, peri-urban and rural settlements, creating active linkages between the state capital and surrounding rural communities. Rural periodic markets constitute important commercial nodes within these settlements, providing spaces for the exchange of agricultural produce, food items, livestock, household commodities and other goods.

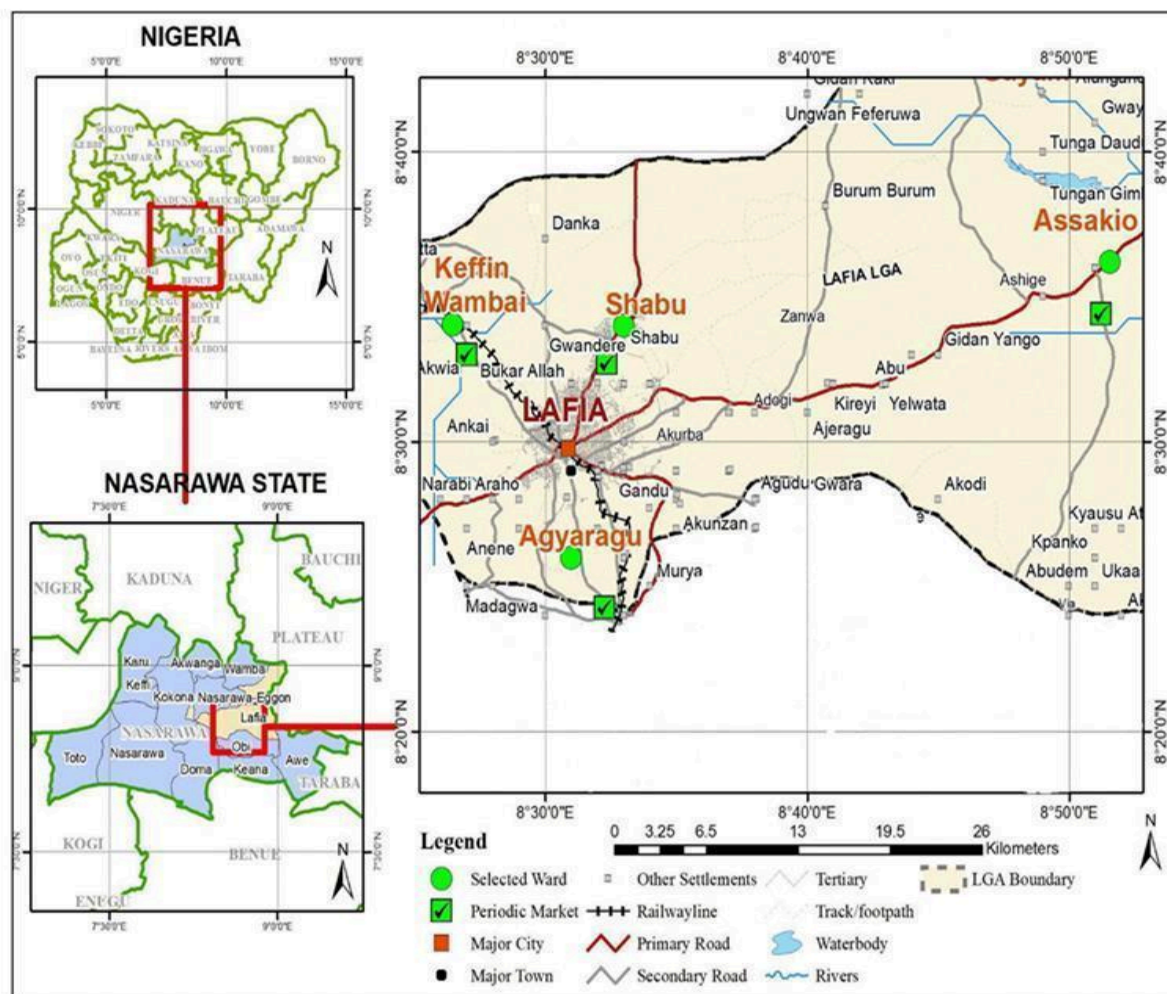


Figure 1: Map of the study area

Methodology

The study adopted a descriptive survey research design supported by Geographic Information System (GIS), field observation and key informant interviews to examine the spatial distribution and characteristics of rural periodic markets in Lafia Local Government Area (LGA), Nasarawa State, Nigeria. Lafia LGA comprises 13 wards and contains both urban and rural settlements, with rural periodic markets serving as important centres for the exchange of agricultural produce, food items and other commodities. The study focused on selected rural periodic markets, namely Assakio, Ashangwa, Agyaragu, Alhamis and Kafin Wambai (B.A.D) markets, which operate on designated market days and serve traders and consumers from surrounding settlements. The study population comprised traders, consumers and other relevant stakeholders patronizing or associated with the selected markets. A multistage sampling technique was adopted, whereby the selected markets were purposively identified based on their periodic operation and relevance to rural communities, while traders and consumers were selected from the markets using simple random sampling. Key informants, including market leaders and community leaders, were purposively selected based on their knowledge of the operation and development of the markets. Primary data were collected through field reconnaissance, taking of pictures, GPS coordinate recording, direct field observation and key informant interviews. GPS coordinates of the selected markets were obtained during fieldwork and used to establish their geographical locations, while an observation including pictures was used to document their physical and functional characteristics, including trading spaces, market structures, road connections, sanitation, drainage, water supply, storage facilities and other relevant facilities. Key

informant interviews provided information on market days, major trading activities, catchment areas, historical development and the functional importance of the markets. Secondary data, including administrative boundaries, road networks, settlement locations and relevant base maps, were obtained from appropriate authoritative sources and used to complement the primary spatial data. The GPS coordinates and other spatial datasets were processed and analyzed using ArcGIS, with the market locations geo-referenced and overlaid on the administrative map of Lafia LGA to produce maps showing their spatial distribution and relationship with surrounding settlements and road networks. The physical and functional characteristics identified through field observation were systematically documented and presented descriptively, while interview responses were analyzed through interpretation and descriptive synthesis to complement the field observations and explain the operational and functional characteristics of the markets. The results from GIS mapping, field observation and interviews were integrated to provide a comprehensive assessment of the spatial distribution and physical and functional characteristics of rural periodic markets in Lafia LGA.

Result Presentation

Mapping and Spatial Distribution of Rural Periodic Markets in Lafia Local Government Area, Nasarawa State.

Periodic markets centers further enrich the local economy, serving as vibrant hubs of commerce and cultural exchange. These markets, held at regular intervals, provide a platform for farmers, artisans, and traders to showcase their products, fostering a sense of community and economic sustainability. The exchange of goods and ideas in these markets contributes to the preservation of local traditions and supports the livelihoods of many. Assakio Market is a prominent market center located in a rural area, serving as a hub for agricultural produce, livestock, and other goods traded within the community and surrounding areas. Keffin Wambai Market is another significant market center situated in a rural setting, serving as a trading hub for agricultural commodities, household goods, and artisanal products. Shabu Kwandere Market serves as a vital trading center in a rural locality, attracting vendors, farmers, and consumers from surrounding communities. Agyaragu Market is a bustling market center located in a rural area, where agricultural produce, livestock, and artisanal goods are bought and sold. Figure 2 displays periodic rural markets in the study area.

Table 1: Periodic Markets and their Locations

S/N	Markets	Market days	Latitudes	Longitudes
1	Assakio	Monday	08° 35' 03.54"N	8° 51' 13.84"E
2	Agyaragu	Friday	08° 23' 59.38"N	8° 31' 10.78"E
3	Barikin Abdullahi	Tuesday	08° 32' 29.536"N	8° 27' 34.40"E
4	Kwandere	Thursday	08° 34 '00.00"N	8° 33' 00.00"E

Table 1 presents the spatial locations and operating days of four selected periodic markets in Lafia Local Government Area, Nasarawa State. The results indicate that the markets are distributed across different parts of the study area, with their geographical coordinates providing precise locations for spatial mapping and analysis.

Assakio Market operates on Mondays and is located at 08°35'03.54"N and 08°51'13.84"E, making it the easternmost of the four markets based on its longitude. Agyaragu Market, which operates on Fridays, is

located at $08^{\circ}23'59.38''\text{N}$ and $08^{\circ}31'10.78''\text{E}$. Its relatively lower latitude indicates that it is situated farther south than the other three markets. Barikin Abdullahi Market operates on Tuesdays and is located at $08^{\circ}32'29.536''\text{N}$ and $08^{\circ}27'34.40''\text{E}$, while Kwandere Market operates on Thursdays and is located at approximately $08^{\circ}34'00.00''\text{N}$ and $08^{\circ}33'00.00''\text{E}$. The coordinates show that the four markets are spatially dispersed rather than concentrated at a single location, although Agyaragu is situated noticeably farther south while Assakio extends the market distribution towards the east. The variation in market locations demonstrates the existence of different geographical points of rural commercial activity within Lafia LGA. The designated market days—Monday, Tuesday, Thursday and Friday—also indicate that trading activities occur on different days, potentially allowing traders and consumers to participate in more than one periodic market within the weekly market cycle. The spatial coordinates obtained from the field survey provide the basic geographic dataset for the GIS mapping of the periodic markets. When plotted on a map alongside settlements, roads and administrative boundaries, these coordinates can be used to demonstrate the spatial pattern and distribution of the markets within Lafia LGA. The findings therefore establish the geographical locations of the selected periodic markets and provide a basis for further examination of their physical and functional characteristics through field observation and interviews.

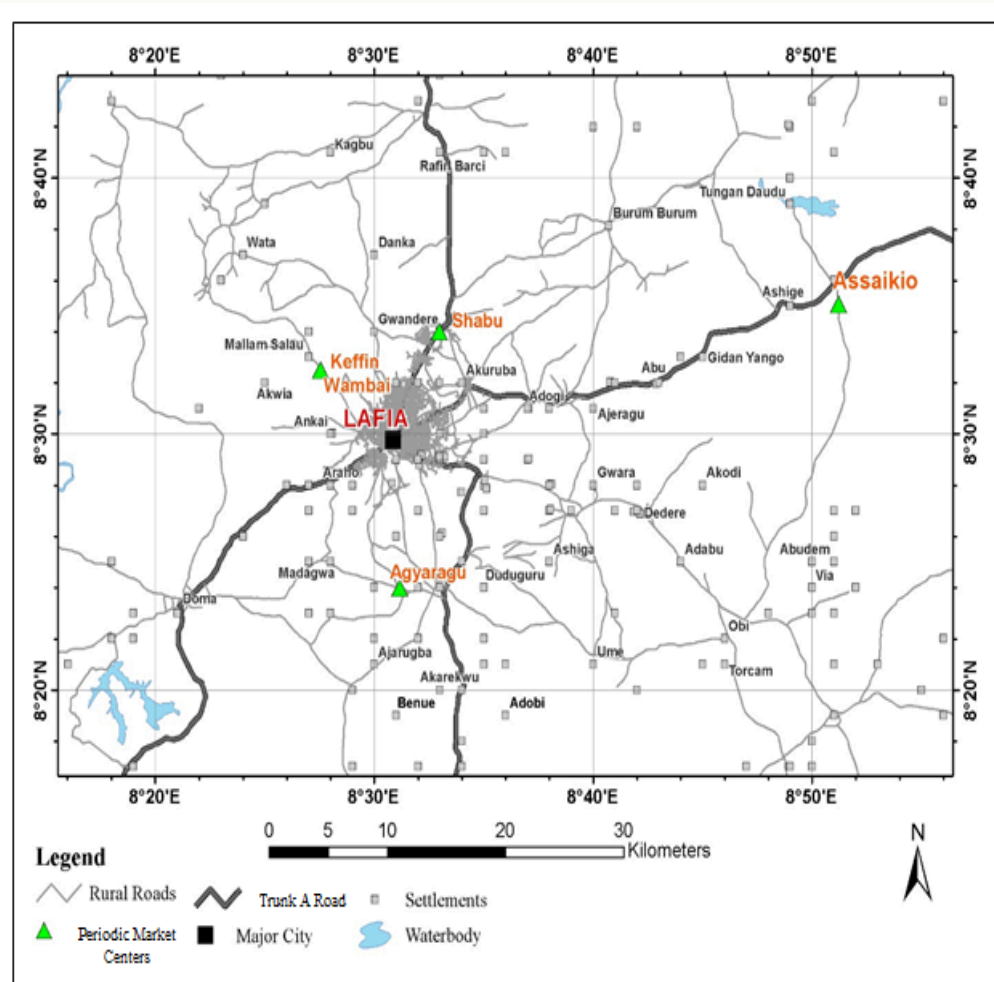


Figure 2: Periodic Markets Centers in the Study area

Figure 2 presents the spatial distribution of periodic market centres in Lafia Local Government Area, Nasarawa State. The map shows the geographical locations of the identified periodic markets within the study area and illustrates their distribution across different parts of the LGA. The mapped market centres include Assakio, Agyaragu, Barikin Abdullahi and Kwandere, which are represented as distinct points on the map. The figure indicates that the periodic markets are spatially dispersed across the study area rather

than concentrated in one location. Assakio Market is positioned towards the eastern part of the mapped area, while Agyaragu is located towards the southern portion. Barikin Abdullahi and Kwandere occupy positions closer to the central part of the study area. This distribution suggests that periodic markets serve different rural settlements and communities within Lafia LGA, thereby providing geographically distributed points for the exchange of agricultural produce, food items, household goods and other commodities. The spatial pattern shown in Figure 2 also provides an indication of the relationship between the market centres and the settlement structure of the study area. The distribution of the markets across different locations may enable residents of surrounding rural communities to access trading facilities without depending entirely on the major commercial centre in Lafia town. However, the degree of accessibility to each market may vary according to the distance of settlements from individual markets and the availability of connecting roads.

Overall, Figure 2 provides a visual representation of the geographical distribution of periodic markets in Lafia LGA and confirms the usefulness of GIS in identifying and mapping rural commercial centres. The mapped locations provide a spatial foundation for assessing the physical and functional characteristics of the markets through field observation and interviews, as addressed by the second objective of the study.

Physical and Functional Characteristics of Rural Periodic Markets in the Study Area.

Markets Centre

Market Centre is a location where people regularly gather for the purchase and sale of provisions, livestock, and other goods in different parts of the study area periodically (See plates I, II and III).

Field observation and key informant interviews revealed that the selected rural periodic markets in Lafia Local Government Area serve as important commercial and social centres where traders and consumers from the host communities and surrounding settlements periodically converge for the purchase and sale of agricultural produce, provisions, livestock and other commodities. The markets operate on designated days of the week and provide important outlets for rural households to dispose of farm produce and obtain food, household necessities and other goods. The physical and functional characteristics observed at Assakio, Barikin Abdullahi (B.A.D.) and Agyaragu markets, as shown in Plates I–III, demonstrate the important role of these markets within the rural commercial system of the study area.



Plate 1: Assakio Market

As shown in Plate 1, Assakio Market provides open trading spaces and simple market structures where traders display provisions, agricultural produce and other household commodities. Field observation indicated that traders use a combination of tables, stalls, sheds and open spaces for their commercial activities. The market attracts buyers and sellers from Assakio and neighbouring communities, particularly on its designated Monday market day. The concentration of traders and consumers during the market period demonstrates the functional importance of Assakio as a rural commercial centre.



Plate 2: B.A.D market

Plate 2 shows the physical setting of B.A.D. Market, where traders utilize open spaces and locally constructed structures for displaying and selling different categories of commodities. Observation revealed that agricultural produce, provisions and household goods constitute important items of trade. The market is connected to surrounding settlements through local roads, which facilitate the movement of traders, consumers and commodities. Key informants indicated that the market attracts people beyond its immediate settlement, thereby functioning as a trading point that links surrounding rural communities.



Plate 3: Agyaragu market

Similarly, Plate 3 presents the physical setting of Agyaragu Market, which operates on Fridays. Field observation revealed active trading spaces involving agricultural produce, provisions, livestock and other consumer goods. Traders were observed using both permanent and temporary structures, while some commodities were displayed directly on tables or on the ground. The market provides an important outlet for farmers and other rural producers to sell their products and for consumers to obtain food and household necessities.

Field Observations

Across the three observed market centres, trading spaces were predominantly open and characterized by a mixture of permanent, semi-permanent and temporary structures. The availability of open spaces allows traders to expand their trading activities during market days, although some traders operate without permanent stalls. The market structures are generally simple and locally constructed, providing basic shelter and display areas. The condition and level of development of the structures vary among the markets, suggesting differences in the degree of physical development of individual market centres.

Road Construction Observation

Observation of the road connections showed that the markets are linked to surrounding settlements through local and access roads. These connections facilitate the movement of traders, consumers, agricultural produce and other commodities to and from the markets. Motorcycles, vehicles and pedestrians constitute important means of movement observed around the market centres, particularly on market days. However, the quality of access roads varies, with some routes appearing more developed than others. The condition of these connections has implications for the ease with which traders transport bulky agricultural commodities to the markets.

Sanitation Observation

The sanitation conditions observed across the markets were generally moderate but varied between locations. Solid wastes such as vegetable residues, plastic materials, paper and other refuse were observed around some trading spaces. The limited availability of organised waste disposal facilities means that traders sometimes dispose of waste within or around the market environment. Since trading activities generate increased waste during market days, regular cleaning and improved waste-management facilities are required to maintain a healthy market environment.

Drainage Observation

With respect to drainage, field observation revealed that formal drainage infrastructure was generally limited. Some sections of the markets had open channels for directing surface runoff, but these were inadequate in some locations and, in places, affected by sediment or solid waste. The limited drainage facilities could contribute to water accumulation during heavy rainfall and potentially affect movement and trading activities within the market spaces.

Water Supply Observation

The observation also revealed limited water-supply facilities within some of the market centres. Where water was available, traders and consumers relied mainly on nearby boreholes, wells or other local sources. Water is required for drinking, cleaning, washing commodities and maintaining personal hygiene. The absence of reliable dedicated water facilities in some markets therefore constitutes a physical limitation that may affect sanitation and the general environmental condition of the market centres.

Storage Facilities within the Periodic Markets Observation

Storage facilities were also observed to be limited. Some traders temporarily kept commodities within

stalls or shops, while others transported their goods to and from the markets on each market day. The absence of adequate storage facilities particularly affects traders dealing with agricultural produce that requires protection from rain, excessive heat, theft and deterioration. The periodic nature of the markets further means that many traders do not maintain large permanent stocks at the market locations.

Key Informant Interview

Information obtained from key informant interviews from the respondents showed that the markets have clearly established market days and operate as part of a wider weekly rural trading system. Assakio operates on Monday, B.A.D. on Tuesday, Kwandere on Thursday and Agyaragu on Friday. According to the informants, the designation of specific market days allows traders and consumers to move between different market centres and participate in trading activities at different locations within the weekly cycle. Market days are generally associated with increased movement of people, goods and transportation activities within the host settlements.

The interviews further revealed that the major trading activities include the sale and purchase of agricultural produce, grains, tubers, vegetables, fruits, livestock, provisions, clothing, household goods and other locally demanded commodities across all the periodic markets. Agricultural products constitute an important component of trading because farming is a major livelihood activity in the surrounding rural communities. Livestock trading and petty commercial activities were also identified as important activities in some of the markets.

Regarding catchment areas, key informants indicated that the markets serve both the immediate host settlements and neighboring rural communities. Traders and consumers travel from surrounding settlements to participate in market activities, with the extent of the catchment area influenced by the range of commodities available, road connections, distance and the reputation of individual markets. This indicates that the functional influence of the markets extends beyond the specific locations represented on the GIS map.

The historical development of the markets, according to key informants, is largely associated with the commercial needs of the surrounding rural populations. Some began as relatively small local trading points and gradually developed as the number of traders and consumers increased. The continuation of established market days, population growth, increasing agricultural production and improved connections with neighbouring settlements have contributed to their continued operation and relevance.

DISCUSSION OF FINDINGS

The findings from field observation, photographic evidence in Plates 1–3 and key informant interviews demonstrate that rural periodic markets in Lafia LGA are multifunctional commercial centres that facilitate the exchange of agricultural produce, livestock, provisions and household goods, while also promoting social interaction among surrounding communities. This finding agrees with Agboola (2022), who established that rural markets in Nigeria perform important economic, social and cultural functions beyond buying and selling. The present study further shows that the markets operate on designated market days, allowing traders and consumers to participate in different markets within the weekly trading cycle. The study revealed that the markets are characterized by basic trading spaces and structures, including open spaces, permanent stalls, semi-permanent sheds and temporary facilities. However, inadequate sanitation, drainage, water supply and storage facilities were observed in some market centres. These infrastructural limitations may reduce the efficiency and environmental quality of the markets. The finding supports Agboola's (2022) observation that the physical characteristics of rural marketplaces influence their wider economic and social functions. The findings also established that road connections are important to the

operation of the markets, as they facilitate the movement of traders, consumers and agricultural commodities between surrounding settlements and market centres. This agrees with Ojo et al. (2021), who found that market access and travel time influence agricultural productivity among farmers in Niger State, Nigeria. The implication is that the functional importance of a market depends not only on its location but also on its connection to surrounding settlements and production areas. The interviews further revealed that the markets have catchment areas extending beyond their host settlements, attracting traders and consumers from neighboring communities. Their development has been influenced by population growth, agricultural activities, transportation connections and increasing demand for goods. This finding is consistent with Singh and Sarkar (2022), who demonstrated that the spatial distribution and accessibility of facilities influence opportunities available to rural settlements.

Finally, the GIS mapping complements the field findings by showing that the identified markets are spatially dispersed across Lafia LGA, making them important nodes within the rural commercial system. This finding is broadly consistent with Amare et al. (2024), who demonstrated the importance of spatial relationships among Nigerian markets. Overall, the study shows that the location, accessibility, infrastructure, market-day arrangements and catchment areas jointly influence the role of periodic markets in supporting rural economic activities in Lafia LGA.

CONCLUSION

The study concludes that rural periodic markets in Lafia Local Government Area are spatially distributed across different settlements and serve as important centres for the exchange of agricultural produce, livestock, provisions and household goods. The markets also facilitate interaction among traders and consumers from surrounding communities, thereby contributing to rural livelihoods and local economic activities. However, field observations revealed that inadequate trading structures, sanitation, drainage, water supply and storage facilities limit the effectiveness of some market centres. Strengthening these basic facilities and improving their connections with surrounding settlements would enhance the functionality, accessibility and contribution of rural periodic markets to rural development in Lafia LGA.

Recommendations

- i. The government should integrate the mapped locations of rural periodic markets into rural development and transportation planning by improving the roads and access routes linking the markets with surrounding settlements and agricultural production areas. Priority should be given to markets with wider catchment areas and those serving communities with limited access to alternative commercial centres, as improved connectivity would facilitate the movement of people and agricultural commodities and strengthen the contribution of the markets to rural economic development.
- ii. The Nasarawa State Government and Lafia Local Government Council should upgrade the basic infrastructure of rural periodic markets by providing durable trading stalls, adequate drainage channels, potable water, sanitation and waste-disposal facilities, storage spaces and other essential amenities. Such improvements would provide a safer and more conducive trading environment, reduce environmental problems and enhance the capacity of the markets to accommodate increasing numbers of traders and consumers.

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