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Impact of Rural Road Networks on the Patronage of Rural Periodic Markets in Lafia Local Government Area, Nasarawa State, Nigeria

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Abstract

This study assessed the impact of rural road networks on the patronage of rural periodic markets in Lafia Local Government Area (LGA), Nasarawa State, Nigeria. The study specifically evaluated the impacts of rural road networks on market patronage and examined how improvements in rural roads influence traders' and consumers' participation in periodic markets. A descriptive survey design was adopted, with data collected from traders and consumers in selected rural periodic markets. A total of 400 questionnaires were administered, of which 340 were retrieved and found valid for analysis. Data were analyzed using frequencies and percentages, while field observations and interviews were used to complement the survey findings. The findings revealed that 50% of respondents patronized the markets weekly, while 24% patronized them every two weeks. Reduced transportation cost (45%) was the major perceived impact of rural road networks, followed by increased market size (21%), improved livelihood opportunities (18%) and increased economic growth (16%). The findings further showed that improved rural roads positively influenced traders' and consumers' participation, with agreement ranging from 76% to 94% across the indicators. The strongest influence was increased quantity of goods brought to the markets (94%), followed by easier consumer access (93%) and reduced transportation costs (92%). The study concludes that improved rural road networks enhance the patronage and participation of traders and consumers in rural periodic markets. It recommends the regular rehabilitation and maintenance of rural roads connecting communities to periodic markets and the integration of road improvement with market infrastructure development.

Keywords: *Consumers, Market Accessibility, Periodic Markets, Rural Roads, and Traders.*

Introduction

Improvements in rural road networks have multifaceted impacts on communities, fostering economic, social, and environmental changes. Enhanced accessibility contributes to economic development by facilitating the transportation of goods and services. Improved rural road networks play a critical role in strengthening the connection between rural producers, traders and market centres by reducing travel time, transportation costs and physical barriers to market participation. Recent evidence from Ethiopia indicates that the construction of rural roads linking agricultural villages to market centres generated significant welfare gains, increased the production of locally productive crops and strengthened rural market integration (Abay, 2024). Similarly, Ma et al. (2024) emphasized that effective market access is important for improving farmers' income, reducing poverty and promoting rural economic development, while constraints such as remoteness and high transaction costs continue to limit farmers' participation in agricultural markets. In the Nigerian context, Ezeudu and Obimbua (2024) identified transportation costs, distance to markets and poor infrastructure as important constraints to rural market access. Thus, the quality and accessibility of rural road networks can influence the frequency with which farmers, traders and consumers patronize rural periodic markets, particularly in areas where such markets serve as important centres for the exchange of agricultural produce and household goods. In rural settings, the periodic rural markets play a crucial role in sustaining livelihoods and fostering community cohesion which farmers bring their fresh produce, livestock, and handmade crafts to sell, creating a marketplace that not only sustains local economies but also provides residents with access to a variety of goods. Periodic rural markets provide important platforms through which farmers, traders and consumers exchange agricultural produce and other goods, thereby supporting rural livelihoods and local economic activities. The effectiveness of these markets, however, depends substantially on the accessibility of the communities they serve. Recent evidence shows that transport infrastructure is a critical component of market access because improved roads reduce the time and financial costs associated with transporting agricultural products and enable rural households to access more markets and marketing opportunities (Marion et al., 2024). Rural road access to periodic market is an important factor for economic development of rural areas (Liu, Zhao, Tang and Gong 2022).

Across rural communities worldwide, road connectivity is a fundamental component of economic and agricultural development because it determines the ease with which people, goods and services move between production areas and markets. Recent evidence indicates that improved rural road connectivity can reduce transportation constraints, strengthen market integration, enhance agricultural productivity and contribute to rural economic prosperity. A study in India found that the provision of rural roads increased agricultural economic growth and promoted rural well-being, demonstrating the broader developmental importance of road connectivity in rural areas (Chakrabarti 2025). Similarly, a global systematic review of 262 market-access interventions across 53 low- and middle-income countries found that farm-to-market transport infrastructure, particularly roads and bridges, can reduce transaction costs and improve farm income and wealth, thereby strengthening the integration of poor and remote farmers into markets (Marion et al., 2024). Consequently, the availability, quality and connectivity of rural road networks are important determinants of the ability of rural households to reach markets, transport agricultural produce and participate effectively in local economic activities.

Across Sub-Saharan Africa, rural road networks constitute an important component of the transport infrastructure required to connect rural settlements, agricultural production areas and local markets. Poor road connectivity can increase travel time and transportation costs, restrict the movement of agricultural produce and limit the participation of rural households in market activities. Recent evidence from Ethiopia demonstrates that the construction of rural roads connecting agricultural villages to market centres generated substantial welfare gains, with improved road access reducing trade costs, increasing the returns to locally productive crops and strengthening rural market integration (Kebede, 2024). In Africa therefore, improving rural road connectivity remains important for integrating remote communities into markets, strengthening agricultural value chains and promoting inclusive rural economic development.

In Nigeria, rural road networks remain an important component of the transportation system that facilitates the movement of people, agricultural produce and other commodities between rural settlements and market centres. Rural communities depend heavily on periodic markets for the exchange of agricultural products, food items, livestock and household goods, making accessibility to these markets an important factor in sustaining rural livelihoods and local economic activities. However, inadequate road infrastructure, poor road conditions, seasonal inaccessibility and high transportation costs continue to constrain the effective movement of people and goods in many rural areas. Recent evidence from North-Central Nigeria indicates that rural transport accessibility has significant implications for agricultural production and farmers' income, while improvements in rural roads can enhance access to economic opportunities and markets (Aboyeji & Aguda, 2024). Similarly, Salami and Toriola (2025) established that road transport infrastructure has a significant long-run relationship with rural agricultural productivity in Nigeria, highlighting the importance of sustained investment in rural transportation infrastructure. Evidence on rural market access in Nigeria also shows that transportation costs, distance to markets and inadequate infrastructure constitute important barriers to the integration of rural producers into markets and agricultural value chains (Ezeudu & Obimbua, 2024).

Poor rural road conditions can therefore have implications beyond the transportation of agricultural commodities, as they may affect the frequency with which traders and consumers participate in periodic markets. Where roads are poorly maintained, impassable during the rainy season or associated with high transportation costs, traders may be discouraged from bringing goods to rural markets, while consumers may reduce their visits because of the difficulties and costs associated with travelling to market centres. Conversely, improved road networks can reduce travel time and transportation costs, increase the movement of agricultural produce and enhance the accessibility of periodic markets. This relationship is particularly important in rural areas where periodic markets serve as major centres of commercial interaction and provide opportunities for farmers, traders and consumers to exchange goods and services.

Despite the importance of rural road networks to rural economic activities and market accessibility, limited empirical attention has been given to the specific relationship between improvements in rural road networks and the patronage of periodic rural markets at the Local Government Area level in Nigeria. This gap is particularly relevant in Lafia Local Government Area of Nasarawa State, where rural periodic markets serve surrounding communities and provide important platforms for the exchange of agricultural produce and household commodities. Understanding the extent to which improved rural roads influence the participation of traders and consumers is therefore necessary for effective rural transport and market planning. Consequently, this study evaluates the impacts of rural road networks on the patronage of rural periodic markets in Lafia LGA.

Objectives

i. Evaluate the impacts of rural road networks on the patronage of rural periodic markets in Lafia LGA.

ii. Examine how improvements in rural road networks influence traders' and consumers' participation in rural periodic markets in the study area.

Literature Review

Rural Road Networks on the Patronage of Rural Periodic Markets in Lafia LGA.

Fato, Omotayo and Fakoya (2023) examined road conditions and the accessibility of agricultural produce to markets among farmers in the Oke-Ogun area of Oyo State, Nigeria. The researchers selected 428 farmers from Orelope, Iwajowa and Kajola and collected information on socioeconomic characteristics, road conditions, transportation access and constraints affecting the movement of farm produce. Their study demonstrated the importance of road conditions in determining how easily farmers could transport agricultural produce to markets. The Nigerian context makes the study particularly relevant to Lafia; however, the focus was on the accessibility of agricultural produce to markets rather than the patronage of rural periodic markets by both traders and consumers.

Berg, Blankespoor and Selod (2018) examined the relationship between market accessibility and rural development in Sub-Saharan Africa using geo-referenced panel data covering several decades of road-network development. Their analysis found that improvements in market accessibility were associated with increased local agricultural activity and provided suggestive evidence of broader local economic effects. The study demonstrates that road development can reduce spatial isolation and strengthen the relationship between rural settlements and markets. Nevertheless, its broad regional scale does not reveal how road accessibility affects attendance and participation in individual periodic markets, creating an opportunity for a more localized study in Lafia LGA.

Mulenga and Mwanaumo (2026) also investigated the effects of rural road rehabilitation on market accessibility and mobility in Nyimba and Chibombo districts of Zambia. Their study used a mixed-methods design involving 372 households located along rehabilitated feeder roads, complemented by focus-group discussions, key-informant interviews and GIS analysis. The study is particularly relevant to the present research because it combines household-level evidence with spatial analysis to examine the relationship between road rehabilitation, mobility and market accessibility. However, its geographical setting differs from Lafia LGA, and it does not specifically focus on the patronage patterns of periodic markets.

Influence of Rural Road Improvements on Traders' and Consumers' Participation in Rural Periodic Markets

Igbalajobi, Ogunleye and Omotoba (2020) examined sustainable transportation solution for improving periodic-market patronage in Ado-Ekiti, Nigeria. Their study reported that road conditions influenced transport costs, periodic-market patronage and commodity prices. The findings indicated that better road infrastructure could improve mobility and reduce transportation costs, thereby encouraging greater market attendance, while poor roads could discourage patronage and increase transportation costs. This study is closely related to the present research because it directly addresses periodic-market patronage. However, the Ado-Ekiti study focused on a different geographical and socioeconomic environment, while the present study will specifically examine rural periodic markets in Lafia LGA and the implications of the rural road network connecting surrounding settlements to these markets.

Kebede (2024) examined the welfare effects of new rural roads connecting agricultural villages to market centres in Ethiopia. Using micro-level agricultural and road-construction data, the study found that improved rural road access reduced trade costs, strengthened market integration and generated substantial welfare gains for rural communities. Road connections also increased the relative prices and production of locally productive crops, indicating that improved connectivity enabled rural producers to respond more effectively to market opportunities. The study is relevant to the present research because it demonstrates how improvements in rural road infrastructure can reduce mobility constraints and strengthen participation in market activities. However, Kebede's study focused on welfare and agricultural responses to road construction in Ethiopia, whereas the present study specifically examines how rural road improvements influence the participation of traders and consumers in periodic rural markets in Lafia LGA, Nasarawa State, Nigeria.

Gizaw (2026) investigated access to rural road transport and smallholder commercialization in Ethiopia using data from 1,967 rural households drawn from nationally representative socioeconomic surveys. The study employed a double-hurdle model to examine how access to rural road transport affects smallholder commercialization. The study provides recent evidence that rural road accessibility is important for enabling rural households to engage more effectively with markets and commercial activities. The study is particularly relevant to the present research because commercialization represents an important dimension of market participation. Nevertheless, Gizaw's study focused on smallholder commercialization rather than the participation of both traders and consumers in periodic rural markets. The present study therefore extends the discussion by examining participation from the perspective of both market users in rural communities of Lafia LGA.

Theoretical Framework: Critical Rural Theory

This study is anchored on Critical Rural Theory (CRT) developed by Thomas, Lowe, Fulkerson and Smith (2011). The theory explains rural communities in relation to the broader structural, spatial and socioeconomic forces that shape access to resources and opportunities. It emphasizes that rural areas may experience inequalities in infrastructure and economic opportunities as a result of differences in resource distribution, policy priorities and relationships between rural and urban spaces (Thomas et al., 2011). Recent scholarship also recognizes the relevance of the theory for understanding rural places, policies, community resources and processes that influence rural development (Pfrenger, 2024).

The theory is relevant to this study because rural road networks constitute an important spatial infrastructure connecting rural settlements with periodic markets. Poor road conditions can increase travel time and transportation costs, restrict the movement of agricultural produce and discourage traders and consumers from participating in periodic markets. Conversely, improved road networks can enhance accessibility, reduce transportation constraints and encourage greater market participation. In Lafia LGA, differences in the quality and connectivity of rural roads may therefore create differences in the ability of traders and consumers to access and patronize periodic markets.

Thus, Critical Rural Theory provides a framework for examining the relationship between rural road improvements, accessibility and market participation**.** It supports the assumption that better road connectivity should facilitate traders' and consumers' participation in rural periodic markets, while poor or inadequate roads may constrain patronage. The theory therefore provides an appropriate basis for evaluating how improvements in rural road networks influence the patronage of periodic rural markets in Lafia LGA.

Methodology

The study adopted a descriptive survey research design to examine how improvements in rural road networks influence traders' and consumers' participation in rural periodic markets in Lafia Local Government Area (LGA), Nasarawa State, Nigeria. Lafia LGA comprises 13 wards, of which four wards with identified rural periodic markets. Assakio, Agyaragu, Keffin/Wambai and Shabu/Kwandare were purposively selected. The markets covered were Assakio and Ashangwa Markets in Assakio Ward, Agyaragu Market in Agyaragu Ward, Barikin Abdullahi (B.A.D.) Market in Keffin/Wambai Ward and Alhamis Market in Shabu/Kwandare Ward. The study population comprised traders and consumers patronizing selected rural periodic markets in Lafia Local Government Area (LGA), Nasarawa State. The population of Lafia LGA is 567,694 based on the population projection provided by the National Population Commission (NPC 2022), while traders and consumers patronizing the selected markets constituted the study population. A purposive sampling technique was used to select the wards and markets, while traders and consumers patronizing the selected markets were sampled during market days. A total of 400 copies of questionnaires were administered, of which 340 were retrieved and considered valid for analysis, representing an 85% response rate. Primary data were obtained through structured questionnaires, field observation and interviews, while secondary data were sourced from relevant government agencies and published literature. The questionnaire obtained information on frequency of market patronage, road accessibility, transportation conditions and the perceived influence of rural road improvements on traders' and consumers' participation, including regular market attendance, ease of access, transportation costs, quantity of goods brought to markets, participation of traders from neighboring communities and travel time. Field observation was used to assess the condition and accessibility of roads linking the sampled communities to the periodic markets. Quantitative data were analyzed using frequencies and percentages and presented in tables, while information obtained from interviews was interpreted and used to complement the questionnaire findings**.**

Discussion of Findings

Impact of Rural Road Networks on Patronage of Rural Periodic Markets

Patronage of Rural Periodic Markets

The patronage of rural periodic markets provides an indication of the frequency with which traders and consumers participate in market activities. The selected markets serve as important centres for the exchange of agricultural produce, food items, livestock and household commodities among rural communities.

Table 1: Frequency of Patronage of Rural Periodic Markets

Wards	Daily No.	%	Weekly No.	%	Every 2 Weeks No.	%	Monthly No.	%	Total No.	%
Assakio	–	–	106	31	49	14	21	6	176	52
Agyaragu	18	5	9	3	6	2	5	2	38	11
Keffin/Wambai	–	–	20	6	11	3	7	2	38	11
Shabu/Kwandare	26	8	34	10	17	5	11	3	88	26
Total	**44**	**13**	**169**	**50**	**83**	**24**	**44**	**13**	**340**	**100**

Table 1 presents the frequency of patronage of rural periodic markets among respondents in the selected wards of Lafia LGA. The result shows that 169 respondents (50%) patronized the markets weekly, representing the highest proportion. This was followed by 83 respondents (24%) who patronized the markets every two weeks, while 44 respondents (13%) each reported daily and monthly patronage. The predominance of weekly patronage indicates that the rural periodic markets constitute important and regularly patronized commercial centres for traders and consumers in the surrounding communities. At the ward level, Assakio recorded the highest number of respondents, with 176 (52%), of which 106 respondents (31%) patronized the market weekly, 49 (14%) every two weeks and 21 (6%) monthly. Shabu/Kwandare followed with 88 respondents (26%), comprising 26 respondents (8%) who patronized the market daily, 34 (10%) weekly, 17 (5%) every two weeks and 11 (3%) monthly. Agyaragu and Keffin/Wambai each recorded 38 respondents (11%). In Agyaragu, 18 respondents (5%) reported daily patronage, while 9 (3%) patronized the market weekly, 6 (2%) every two weeks and 5 (2%) monthly. In Keffin/Wambai, 20 respondents (6%) patronized the market weekly, 11 (3%) every two weeks and 7 (2%) monthly. The findings therefore show that weekly and fortnightly patronage account for 74% of the respondents, indicating a relatively high level of regular participation in the rural periodic markets. The pattern may be associated with the importance of these markets to the movement and exchange of agricultural produce and other commodities within the rural communities. It also provides an important basis for evaluating the role of rural road networks in market patronage, since the condition and accessibility of roads can affect the ease, cost and frequency with which traders and consumers travel to the markets.

Perceived Impacts of Rural Road Networks on Market Patronage

The study further examined the major ways through which rural road networks influence the activities and patronage of periodic markets. Respondents identified livelihood opportunities, economic growth, reduction in transportation costs and expansion of market size as the major impacts.

Table 2: Perceived Impacts of Rural Road Networks on Rural Periodic Markets

Wards	Livelihood Opportunities No.	%	Increased Economic Growth No.	%	Reduced Transport Cost No.	%	Increased Market Size No.	%	Total No.	%
Assakio	25	7	21	6	93	27	37	11	176	52
Agyaragu	16	5	11	3	5	2	6	2	38	11
Keffin/Wambai	21	6	13	4	–	–	4	1	38	11
Shabu/Kwandare	–	–	10	3	55	16	23	7	88	26
Total	**62**	**18**	**55**	**16**	**153**	**45**	**70**	**21**	**340**	**100**

Table 2 presents the perceived impacts of rural road networks on rural periodic markets in Lafia LGA. The result indicates that reduced transportation cost was the most prominent impact, accounting for 153 respondents (45%). This was followed by increased market size, with 70 respondents (21%), while improved livelihood opportunities accounted for 62 respondents (18%) and increased economic growth accounted for 55 respondents (16%). This shows that the most noticeable effect of the rural road network on market activities is the reduction in the cost of transporting people and goods to and from the periodic markets. At the ward level, Assakio recorded the highest number of respondents (176 or 52%). Within the ward, 93 respondents (27%) identified reduced transportation costs as the major impact of rural roads, followed by 37 respondents (11%) who reported increased market size, 25 respondents (7%) who identified improved livelihood opportunities and 21 respondents (6%) who reported increased economic growth. This suggests that road connectivity around Assakio has considerable importance for facilitating movement and market activities. In Agyaragu, 16 respondents (5%) reported improved livelihood opportunities, 11 (3%) indicated increased economic growth, 5 (2%) identified reduced transportation costs and 6 (2%) reported increased market size. Keffin/Wambai recorded 21 respondents (6%) for livelihood opportunities, 13 (4%) for economic growth and 4 (1%) for increased market size, while no respondent identified reduced transportation cost as the major impact. In Shabu/Kwandare, reduced transportation cost was reported by 55 respondents (16%), followed by increased market size with 23 respondents (7%) and increased economic growth with 10 respondents (3%). No respondent in this ward identified livelihood opportunities as the major impact. The overall result that 45% of respondents identified reduced transportation costs indicates that the rural road network is particularly important in lowering the financial burden associated with travelling to markets and transporting agricultural produce and other commodities. This can encourage traders to bring more goods to the markets and make it easier for consumers from surrounding settlements to attend. The 21% reporting increased market size further suggests that improved road connectivity may enable periodic markets to attract traders and consumers from a wider geographical area. Similarly, the 18% reporting improved livelihood opportunities indicates that accessible rural roads can support the economic activities of traders, farmers, transport operators and other market-dependent residents. The 16% reporting increased economic growth also suggests that the benefits of improved rural roads extend beyond market attendance to the wider economic activities generated around the periodic markets. Overall, Table 2 demonstrates that rural road networks have important perceived impacts on the patronage and functioning of periodic rural markets in Lafia LGA. The dominance of reduced transportation costs, followed by increased market size, livelihood opportunities and economic growth, suggests that better rural road connectivity can facilitate the movement of traders, consumers and commodities and thereby encourage greater participation in rural periodic markets. This finding directly addresses the objective of evaluating the impacts of rural road networks on the patronage of rural periodic markets in Lafia LGA.

Field Observation

Field observation revealed that some roads connecting surrounding settlements to the periodic markets were narrow, unpaved and poorly maintained, while some paved roads had potholes and deteriorated surfaces. These conditions can increase the difficulty and cost of transporting agricultural produce and travelling to the markets, particularly during the rainy season.

Interview Evidence

The interviews conducted with selected community members and market participants further indicated that road conditions are an important consideration in deciding whether to travel to the markets and how frequently goods are transported there. Participants generally explained that improved road accessibility makes movement easier, reduces transportation difficulties and encourages traders and consumers to patronize the markets. Conversely, poor road conditions were interpreted as discouraging regular market participation because of increased transport difficulties and costs. These interview responses support the quantitative finding that reduction in transportation costs was the most prominent perceived impact of the rural road network.

Influence of Rural Road Improvements on Traders' and Consumers' Participation in Rural Periodic Markets

Table 3: Influence of Rural Road Improvements on Traders' and Consumers' Participation in Rural Periodic Markets

S/N	Indicators of Influence	Strongly Agree	Agree	Disagree	Strongly Disagree	Total
1	Improved roads encourage traders to attend the periodic markets more regularly	202 (59%)	108 (32%)	20 (6%)	10 (3%)	**340 (100%)**
2	Improved roads make it easier for consumers to access the periodic markets	215 (63%)	102 (30%)	18 (5%)	5 (2%)	**340 (100%)**
3	Improved roads reduce the cost of transporting goods to the markets	192 (57%)	120 (35%)	18 (5%)	10 (3%)	**340 (100%)**
4	Improved roads increase the quantity of goods brought to the markets by traders	168 (50%)	149 (44%)	15 (4%)	8 (2%)	**340 (100%)**
5	Improved roads encourage traders from neighboring communities to participate in the markets	154 (45%)	141 (41%)	19 (6%)	26 (8%)	**340 (100%)**
6	Improved roads reduce travel time to the periodic markets	178 (52%)	99 (29%)	30 (9%)	33 (10%)	**340 (100%)**
7	Improved roads encourage more frequent market participation	170 (50%)	88 (26%)	46 (14%)	36 (10%)	**340 (100%)**

Table 3 presents the influence of improvements in rural road networks on traders' and consumers' participation in rural periodic markets in Lafia LGA. The results generally indicate a positive influence of improved rural roads on market participation, as the majority of respondents either strongly agreed or agreed with all the indicators presented. The result shows that 202 respondents (59%) strongly agreed and 108 (32%) agreed that improved roads encourage traders to attend periodic markets more regularly. Only 20 respondents (6%) disagreed and 10 (3%) strongly disagreed. This indicates that 91% of respondents agreed that better roads promote regular participation by traders. Improved road conditions therefore appear to make it easier and more convenient for traders to access the markets. Similarly, 215 respondents (63%) strongly agreed and 102 (30%) agreed that improved roads make it easier for consumers to access the periodic markets. Only 18 respondents (5%) disagreed and 5 (2%) strongly disagreed. Thus, 93% of respondents expressed agreement**,** making consumer accessibility one of the strongest reported effects of rural road improvements. This suggests that improved road connectivity can encourage consumers from surrounding settlements to visit rural periodic markets more easily. The findings further reveal that 192 respondents (57%) strongly agreed and 120 (35%) agreed that improved roads reduce the cost of transporting goods to the markets. In contrast, only 18 respondents (5%) disagreed and 10 (3%) strongly disagreed. Overall, 92% of respondents agreed that improved roads reduce transportation costs. This reduction can encourage traders to transport larger quantities of agricultural produce and other commodities to the markets while also potentially lowering the cost burden on consumers. Regarding the quantity of goods brought to the markets, 168 respondents (50%) strongly agreed and 149 (44%) agreed that improved roads increase the quantity of goods brought by traders. Only 15 respondents (4%) disagreed and 8 (2%) strongly disagreed. Therefore, 94% of respondents agreed with the statement. This represents the highest overall agreement among the indicators and suggests that better rural roads facilitate the movement of greater quantities of goods to the periodic markets. The result also indicates that 154 respondents (45%) strongly agreed and 141 (41%) agreed that improved roads encourage traders from neighboring communities to participate in the markets. Meanwhile, 19 respondents (6%) disagreed and 26 (8%) strongly disagreed. Thus, 86% of respondents agreed that improved road networks attract traders from neighboring communities. This implies that improved connectivity can expand the geographical catchment of rural periodic markets and increase the number of traders participating in market activities. With respect to travel time, 178 respondents (52%) strongly agreed and 99 (29%) agreed that improved roads reduce travel time to periodic markets. However, 30 respondents (9%) disagreed and 33 (10%) strongly disagreed. Overall, 81% of respondents agreed, indicating that improved road conditions generally facilitate faster access to the markets, although a relatively larger proportion expressed disagreement compared with some of the other indicators. Finally, 170 respondents (50%) strongly agreed and 88 (26%) agreed that improved roads encourage more frequent market participation. Conversely, 46 respondents (14%) disagreed and 36 (10%) strongly disagreed. Thus, 76% of respondents agreed that improved roads increase the frequency of market participation. Although this was the lowest level of agreement among the indicators, it still demonstrates that a substantial majority associated better roads with more frequent participation. The overall results demonstrate that improvements in rural road networks have a positive influence on traders' and consumers' participation in rural periodic markets in Lafia LGA. Agreement across the seven indicators ranged from 76% to 94%**,** indicating a consistently positive perception of the role of road improvements. The strongest influence was the increase in the quantity of goods brought to the markets (94%)**,** followed by easier consumer access (93%)**,** reduced transportation costs (92%), and more regular trader attendance (91%)**.** The findings therefore suggest that improved rural road networks enhance market participation by reducing transportation constraints, facilitating the movement of goods and people, attracting traders from neighboring communities and encouraging more regular interaction with rural periodic markets.

Field Observation

Field observation during the study revealed that the condition of rural roads connecting the sampled communities to the periodic markets had a noticeable influence on the movement of traders, consumers and agricultural commodities. The researcher observed that accessible and relatively improved road sections facilitated the movement of motorcycles, tricycles and other vehicles**,** particularly on market days. Traders were observed transporting agricultural produce and other commodities to the markets, while consumers from surrounding settlements used the road network to access the market centres.

The observation also showed that poorly maintained and unpaved road sections, potholes and muddy surfaces during the rainy period could slow movement and make transportation more difficult**.** In some locations, motorcycles were more commonly used because they could navigate narrow and poorly maintained sections more easily than larger vehicles. These observations support the responses in Table 3, particularly the high proportions of respondents who agreed that improved roads reduce transportation costs, facilitate consumer access, increase the quantity of goods brought to markets and encourage regular participation.

Interview Findings

The interviews conducted with selected traders and consumers further supported the quantitative findings in Table 3. Traders explained that better road conditions make it easier to transport agricultural produce and other goods to the markets, while poor roads increase transport difficulties and costs. Some traders indicated that when roads are accessible, they are more willing to attend the markets regularly because they can move their goods with less difficulty.

Consumers similarly reported that improved roads make travelling to the periodic markets easier and reduce the time and cost involved in reaching the markets. They noted that poor road conditions, particularly during the rainy season, can discourage market trips or make travelling more expensive. Participants also explained that accessible roads enable traders from neighbouring communities to bring a wider variety and greater quantity of goods to the markets.

The interview responses further indicated that road improvements can expand participation beyond the immediate communities. Traders reported that better connectivity makes it possible for them to reach markets that would otherwise be difficult to access, while consumers benefit from improved access to a wider range of agricultural produce and household commodities.

Overall, the interview findings corroborate the results presented in Table 3. The participants' accounts indicate that improvements in rural road networks facilitate the movement of people and goods, reduce transportation difficulties and costs, shorten travel time, and encourage more regular participation by traders and consumers. Thus, both the quantitative results and field evidence demonstrate that rural road improvements contribute positively to participation in rural periodic markets in Lafia LGA.

Discussion of Findings

i. **Impact of Rural Road Networks on the Patronage of Rural Periodic Markets**

The findings show that rural road networks have a positive impact on the patronage of rural periodic markets in Lafia LGA. The majority of respondents (50%) patronized the markets weekly, while 24% did so every two weeks, indicating regular participation. Reduced transportation cost (45%) was identified as the major impact of rural roads, followed by increased market size (21%), improved livelihood opportunities (18%) and increased economic growth (16%). This suggests that improved road connectivity reduces the financial and physical difficulties associated with travelling to markets and transporting goods. The finding agrees with Fato, Omotayo and Fakoya (2023), who found that road conditions influence the transportation of agricultural produce to markets in Oyo State. It also supports Kebede (2024), who reported that rural roads reduced trade costs and strengthened market integration in Ethiopia. Similarly, Gizaw (2026) found that rural road access enhances smallholder commercialization and market participation. The finding further agrees with Igbalajobi, Ogunleye and Omotoba, who established that road conditions influence transportation costs and periodic-market patronage in Ado-Ekiti. However, Årethun and Bhatta (2012) observed that improved road accessibility does not always result in increased market participation, suggesting that other factors may also influence patronage. Overall, the present finding demonstrates that rural road networks are an important factor supporting regular patronage and the economic functioning of periodic markets in Lafia LGA.

ii. **Influence of Rural Road Improvements on Traders' and Consumers' Participation in Rural Periodic Markets**

The findings indicate that improvements in rural road networks positively influence traders' and consumers' participation in periodic markets. Agreement across the seven indicators ranged from 76% to 94%. The highest agreement was recorded for increased quantity of goods brought to markets (94%), easier consumer access (93%), reduced transportation costs (92%) and more regular trader attendance (91%). Furthermore, 86% agreed that improved roads encourage traders from neighboring communities to participate, while 81% reported reduced travel time and 76% agreed that road improvements encourage more frequent participation. These findings indicate that improved roads facilitate the movement of people and goods, reduce transportation difficulties and expand the catchment area of rural periodic markets. The findings are consistent with Kebede (2024) and Gizaw (2026), who established that improved rural road access strengthens rural market participation and commercialization. They also agree with Mulenga and Mwanaumo (2026), who found that rural road rehabilitation improved mobility and market accessibility in Zambia. The field observations and interviews further supported the survey results, as respondents indicated that poor roads, particularly during the rainy season, increase transportation difficulties and can discourage market participation. Thus, improvements in rural road networks contribute significantly to traders' and consumers' participation in rural periodic markets in Lafia LGA.

Overall, the findings demonstrate that improvements in rural road networks positively influence both traders' and consumers' participation in rural periodic markets in Lafia LGA. The evidence indicates that the main mechanisms are reduced transportation costs, easier consumer access, increased quantities of goods transported, shorter travel time and greater participation by traders from neighboring communities. This supports the central proposition of Critical Rural Theory that the distribution and quality of rural infrastructure can shape the opportunities available to rural populations and influence their integration into economic activities.

Conclusion

The study concludes that rural road networks play an important role in the patronage and functioning of rural periodic markets in Lafia Local Government Area. The findings show that the majority of respondents patronize the markets regularly, with 74% attending either weekly or every two weeks, demonstrating the continuing importance of periodic markets to rural economic activities. The study further concludes that rural road networks have a generally positive influence on market patronage. Reduced transportation costs emerged as the most prominent perceived impact, while increased market size, livelihood opportunities and economic growth were also identified. Improvements in rural roads were similarly found to encourage traders' regular attendance, facilitate consumer access, reduce the cost of transporting goods, increase the quantity of goods brought to markets, attract traders from neighbouring communities and reduce travel time. Although road improvements alone do not determine patronage, the evidence indicates that they constitute an important enabling factor for stronger participation in rural periodic markets.

Recommendations

i. Government and relevant rural infrastructure agencies should prioritize the rehabilitation and regular maintenance of rural roads connecting surrounding communities to periodic markets in Lafia LGA. Particular attention should be given to unpaved sections, potholes, drainage problems and road sections that become difficult to use during the rainy season. Improving the condition and reliability of these roads will reduce transportation difficulties and costs, facilitate the movement of larger quantities of agricultural produce and encourage more regular participation by traders and consumers.

ii. Local government authorities and market management stakeholders should integrate rural road improvement with market-development initiatives. Improved roads should be complemented by better market facilities, loading and unloading spaces, transport arrangements and market-day services to encourage traders from neighboring communities and consumers to participate more frequently. Such an integrated approach will help maximize the benefits of improved road connectivity and strengthen the role of rural periodic markets as centres of trade, employment and rural livelihood development.

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