
Infrastructural Facilities and Livelihood Activities of Rural Dwellers in Katsina State, Nigeria

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ABSTRACT: *The role of infrastructural facilities in increasing the productive potentials and livelihood activities of rural populace has never been in doubt. Against this background therefore, the study, examined the state of infrastructural facilities provisions and effect on livelihood activities of rural dwellers in Katsina State, Nigeria. Multi-stage sampling technique was used to select 224 respondents. Structured interview schedule was used to collect information on respondents' socio-economic characteristics, availability and conditions of rural infrastructural facilities, livelihood activities, constraints and perceived effect of rural infrastructural facilities. The data were analysed using descriptive statistics and inferential statistics. Most respondents were within 21-30 years of age, married, and had Quranic education and farming as primary occupation. Skills acquisition centres, storage facilities and secondary schools were among non-available infrastructural facilities while processing centres, storage and skills acquisition centres were in poor conditions. Levels of involvements in non-farm and off-farm/processing activities were low while high for agricultural activities. Most respondents' overall level of perception on effect of infrastructural facilities on their livelihood activities was low. Also, levels of perceptions of the effect of infrastructural facilities on non-farm and off-farm/processing activities were low while level of perception on agricultural activities was high. Significant relationships existed between sex ($\chi^2 = 58.017, <p = 0.05$), household size ($\chi^2 = 5.393, <p = 0.05$) and respondents' perceived effect of infrastructural facilities. Also, significant correlations existed between age ($r = 0.143$, access ($r = -0.232$), condition ($r = -0.130$), constraints ($r = 0.143$) and respondents' perceived effect of infrastructural facilities on their livelihood activities. Low effect of infrastructural facilities was informative to the abysmal level of infrastructural provisions and state of available ones in the area. Providing infrastructural framework based on people's felt needs and implementing same accordingly is germane to improved livelihood activities in the area.*

KEYWORDS: infrastructural facilities, non-farm activities, off-farm/processing activities

INTRODUCTION

It is not in doubt that the livelihood of Nigerians who live in rural areas is anchored to rural economies. Also obvious is the fact that rural dwellers significantly contribute to the nation gross domestic product not only in Nigeria but also in developing nations of sub-Saharan African. In Nigeria, for instance rural areas have revealed to be major springing boards for the country's economic development, source of capital formation and principal market for domestic manufactures (Abah, 2010).

It is however, observed that despite these roles, rural areas cannot easily attract people to live in due to absence of basic infrastructure like potable water, electricity and good feeder roads that can improve people's livelihood activities, purchasing power and standard of living (Olayiwola & Adeleye 2005). Rural infrastructural facilities in this context simply mean all public services from law and order through education and public health to transportation, communications and water supply. Ekong (2003) looks at rural infrastructure from the angle of underlying basic physical, social and institutional terms of capital which, enhance rural dwellers' production, distribution and consumption activities and quality of life. They may be classified into physical infrastructure (roads, water, rural electrification, storage and processing facilities), social infrastructure (health and educational facilities, community centres, fire and security services) and institutional infrastructure (credit and financial institutions, agricultural research facilities and social infrastructure. Olayiwola & Adeleye (2005) further see infrastructural facilities as elements in the package of basic needs, which a community would like to procure for better living. This implies that rural areas cannot meaningfully contribute to economic progress of a nation in the absence of such basic facilities.

It is this recognition that necessitated the various rural infrastructural development programmes interventions and projects by successive government regimes over the years in Nigeria. Ibieta & Oghator (2013) corroborated that successive governments have over the years expressed robust desires to transform rural areas nationwide through provision of basic infrastructure, human capacity and socio-political developments. The programmes included Rural Development Projects, Directorate of Food, Roads and Rural Infrastructure, Local Empowerment and Environmental Management Programme (LEEMP), Second National Development Project (NFDP) as well as Community-based Agricultural and Rural Development Programme (CBARDP) (Oyesola, 2010). Incidentally, these programmes were noted to have had limited success in many cases because of what Oyesola (2010) termed as lack of structural support, change of government and non-recognition of diversity in the livelihood activities of rural dwellers across ethnic and ecological zones of Nigeria. Others programmes and projects included Local Empowerment and Environmental Management Programme (LEEMP), Second National Fadama Development Project and Community-based Agricultural and Rural Development Programme.

Despite these efforts, basic infrastructural provisions are reportedly the bane of most rural areas in Nigeria. Laah et al (2013) noted also that despite these countless numbers of rural development policies, programmes and projects introduced at different times by successive governments little or nothing is felt at the rural level as each policy has often died with the government that initiated it. Abah (2010) also added that development strategies and efforts in Nigeria have been more urban based or focused resulting into neglect or apparent dearth of basic infrastructural facilities in the rural areas. Okoli and Onah (2002) also observed that rural areas in Nigeria are characterized by inadequacies of human needs as reflected in the near absence of some basic infrastructures with its attendant features of degradation and deprivation. Ezeah (2005) further corroborated that even though social amenities are also in short supply in some urban areas, the Nigerian rural areas are the most neglected and far worse roads, markets, electricity, pipe borne water provisions.

In the same vein, a critical analysis of the introduction, establishment, implementation and perhaps the objectives of these programmes would also reveal that they were aimed at rural development and in an attempt to better the lives of rural dwellers, stimulate and enhance economic growth, as well as get the rural sector to contribute meaningfully to the national economic and social development. Ezeah, (2005) has observed that; what is more worrisome is that the policies and programs initiated and implemented by government over the years have not resulted in meaningful enhancement of the development state of the rural areas and peoples livelihood activities in Nigeria. Kehinde (2011) revealed that people are rather seen languishing in social and physical infrastructural neglect, while their fortune is used to developed and transform the urban areas. In terms of level of economic development, quality of life, access to opportunities, standard of living and general livability, the gap between the urban and rural areas in Nigeria is reportedly very wide (Laah et. al 2013). This led to what the authors further called rural urban dichotomy and rural-urban migration. Eke and Oghator (2011) observe this in their comment that most rural development programmes in Nigeria has ended up in the pages of national newspapers and television announcements with the rural areas languishing in backwardness, stagnation, poverty, misery and glaring presence of general low standard of living among the rural populace (Nweke, 2004).

It is therefore on this premise that the study would assess the effect of infrastructural facilities on the livelihood activities of rural dwellers in Katsina State. The study would also address the following questions: what are the livelihood activities of rural dwellers of Katsina State? What are the available infrastructural facilities in Katsina State? What are the conditions of available infrastructural facilities? What is the perception of rural dwellers of Katsina State on the effect of infrastructural facilities on their livelihood activities?

Objectives of the study

The study was designed to broadly ascertain the effect of infrastructural facilities on the livelihood activities of rural dwellers in Katsina State. Specifically, the objectives of the study included to:

1. find out infrastructural facilities that are available
2. ascertain the conditions of available infrastructural facilities
3. find out respondents' livelihood activities
4. find out rural dwellers' perception on the effect of infrastructural facilities on their livelihood activities

METHODOLOGY

The study is Katsina state located in the North-Western geo-political zone of Nigeria. The state, covers an area of 23,938 sq. km and is located between latitudes 11°08'N and 13°22'N and longitudes 6°52'E and 9°20'E. It is bounded by Niger Republic to the north, by Jigawa and Kano States to the east, by Kaduna State to the South and by Zamfara State to the West. Katsina State has rich cultural heritage with annual rainfall ranging from 800mm to 1000mm. The population of the study included rural dwellers in all the Local Government Areas (LGAs) of the State. The study area is made of predominantly Hausa speaking people with other ethnic groups (Fulani, Ibo and Yoruba). The State has 34 LGAs distributed among the 3 senatorial zones. Multi-stage sampling procedure was used in selecting the respondents. Fourteen 14(40%) LGAs were selected from the three senatorial districts of the state using quota sampling technique. This included Batsari, Danmusa, Kaita, Safana, Danja, Sabuwa, Faskari and Musawa LGAs. Others were Baure, Bindawa, Ingawa, Dutsi, Zango and Maidua LGAs. Four communities from each of the 14 selected LGAs were randomly sampled to give 56 communities. Using simple random sampling technique, four rural dwellers were selected in each of the sampled communities, resulting in a sample size of 224 respondents that was used for the study.

A structured interview schedule containing questions ranging from respondents' socio-economic characteristics, availability and conditions of rural infrastructural facilities, livelihood activities and perception on the effect of rural infrastructural facilities on respondents' livelihood activities was used for data collection. The livelihood activities were operationalized as both economic and social activities that respondents were involved. Respondents were asked to indicate their livelihood activities from the list of economic and social activities of rural dwellers. Availability of infrastructural facilities were measured by presenting to the respondents a list of infrastructural facilities from which they indicated those available on a 2- point scale of Yes (1) and No (0). Condition of infrastructural facilities was measured on a 3-point scale of good (3), fair (2) and poor (1). Respondents' perception on the effect of infrastructural facilities on their livelihood activities was measured on a 5-point scale of Strongly Agree, Agree, Undecided, Disagree and Strongly Disagree. This will be scored 5, 4, 3, 2, 1 for positive statements and 1, 2, 3, 4, 5 for negative statements. The mean perception on the effect of infrastructural facilities was obtained and used to categorize respondents' perception into high (\geq mean score) and low ($<$ mean score) level of perceived effect. Frequency counts, percentages, mean) and inferential statistics (Chi-square and Pearson Product Moment Correlation) were used in analyzing the data.

RESULTS**Respondents' socio-economic characteristics**

The result in Table 1 shows that the distribution of the respondents by age, 36.2% were within the age bracket of 21 – 30 years. The result further revealed that most (75.9%) respondents were males and 24.1% were females. Whereas the result on respondents' marital status showed that 92.0% were married, 49.1% had Quranic education as their highest educational attainment. Islamic faith however, was predominant among 92.0% of the respondents. Most (48.7%) respondents' household size was between 6 and 10 people while farming was a predominant primary occupation among large proportion (67.4%) of the respondents.

Table I: distribution based on respondents' socio-economic characteristics

Socio-economic characteristics	F	%	Mean
Age:			37.8571±12.10630
less or equal 20	11	4.9	
21-30	81	36.2	
31-40	50	22.3	
41-50	51	22.8	
51-60	22	9.8	
61-70	8	3.6	
above 70	1	.4	
Gender:			
Male	170	75.9	
Female	54	24.1	
Marital status:			
Married	206	92.0	
Single	18	8.0	
Educational qualification:			
No formal	37	16.5	
Quranic	110	49.1	
Primary	43	19.2	
Secondary	28	12.5	
Tertiary	6	2.7	
Religious affiliation:			
Christian	18	8.0	
Islam	206	92.0	
Household size:			
1-5	43	17.2	
6-10	109	48.7	
11-15	72	32.1	
16-20	0	0.00	
above 20	0	0.00	
Primary occupation:			
Petty trading	56	25.0	
Farming	151	67.4	
Almajiri	3	1.3	
Artisan	13	5.8	
civil servant	1	.4	

Available infrastructural facilities

Table 2 shows that processing facilities and skills acquisition centers (99.6%), storage facilities (97.3%), secondary school (85.7%), and market (83.7%) were not available. Also not available in the area were electricity (80.8%), hospital (51.3%), irrigation facility (56.7%) and access road (54.9%). The study further revealed that primary schools (79.9%) and borehole/water supply were available. The result is an indication that most infrastructural facilities in the area are either inadequate or non existence. However, primary school (mean = 1.66), access road (mean = 1.58), borehole/water supply (mean = 1.51) and irrigation (mean = 1.40) ranked 1st, 2nd, 3rd and 4th respectively as available infrastructural facilities in the area.

Table 2: Distribution of respondents based on availability infrastructural facilities

Infrastructural facility	Yes		No		Mean	Rank
	F	%	F	%		
Access road	101	45.1	123	54.9	1.58	2 nd
Hospital	109	48.7	115	51.3	1.31	5 th
Public transportation	30	13.4	194	86.6	1.24	6 th
Market	36	16.1	188	83.9	1.13	8 th
Primary School	179	79.9	45	20.1	1.66	1 st
Secondary school	32	14.3	192	85.7	1.19	7 th
Electricity	43	19.2	181	80.8	1.10	9 th
Borehole/water supply	138	61.6	86	38.4	1.51	3 rd
Storage facilities	6	2.7	218	97.3	1.03	10 th
Irrigation	97	43.3	127	56.7	1.40	4 th
Skill acquisition centers	1	.4	223	99.6	1.01	11 th
Processing centers	1	.4	223	99.6	1.01	11 th

Conditions of available infrastructural facilities

Table 3 is the results of respondents' perception of the conditions of infrastructural facilities in the study area. The result revealed that processing centers (99.6%), skill acquisition centers (99.1%), and storage facilities (98.2%) market (91.6%) and electricity (90.6%) were in poor conditions. Secondary schools (86.2%), public transportation (84.4%), hospital/clinics (71.9%) and access road and irrigation facilities (66.5%) were also revealed to be in poor conditions.

Table 3: distribution of respondents based on conditions of infrastructural facilities

Available Infrastructural facility	Good		Fair		Poor	
	F	%	F	%	F	%
Access road	55	24.6	20	8.9	149	66.5
Hospital	7	3.1	56	25.0	161	71.9
Public transportation	18	8.0	17	7.6	189	84.4
Market	9	4.0	10	4.5	205	91.5
Primary School	41	18.3	66	29.5	117	52.2
Secondary school	11	4.9	20	8.9	193	86.2
Electricity	1	.4	20	8.9	203	90.6
Borehole/water supply	27	12.1	60	26.8	137	61.2
Storage facilities	3	1.3	1	.4	220	98.2
Irrigation	14	6.3	61	27.2	149	66.5
Skill acquisition centers	1	.4	1	.4	222	99.1
Processing centers	1	.4	0	0.00	223	99.6

Access to infrastructural facilities

Result on access to infrastructural facilities (Table 4) shows that most respondents did not have access to processing centers (99.1%), skill acquisition centers (98.7%), storage facilities (98.7%) and market (84.4%). Also 84.4%, 84.4%, 71.9%, 56.7%, 55.4%, 54.0% and 43.3% of the respondents adjudged electricity, secondary school, public transportation, irrigation facility, borehole, hospital and roads as inaccessible. However, majority (54.0%) accessed primary school. The result further revealed that primary school (mean = 2.02), road (mean = 1.38), hospital (mean = .96) and borehole (mean = .91) rank 1st, 2nd, 3rd and 4th respectively as infrastructural facilities the respondents accessed.

Table 4: distribution of respondents based on access to infrastructural facilities

Infrastructural facility	Always		Occasionally		Rarely		Never		Mean	Rank
	F	%	F	%	F	%	F	%		
Access road	80	35.7	22	9.8	25	11.2	97	43.3	1.38	2 nd
Hospital	36	16.1	41	18.3	26	11.6	121	54.0	.96	3 rd
Public transportation	16	7.1	22	9.8	25	11.2	161	71.9	.52	6 th
Market	8	3.6	23	10.3	4	1.8	189	84.4	.33	8 th
Primary School	121	54.0	33	14.7	23	10.3	47	21.0	2.02	1 st
Secondary school	24	10.7	1	.4	9	4.0	190	84.8	.37	7 th
Electricity	1	.4	17	7.6	8	3.6	198	88.4	.20	9 th
Borehole/water supply	29	12.9	46	20.5	25	11.2	124	55.4	.91	4 th
Storage facilities	1	.4	0	0.00	2	.9	221	98.7	.02	11 th
Irrigation	21	9.4	53	23.7	23	10.3	127	56.7	.86	5 th
Skill acquisition centers	1	.4	1	.4	1	.4	221	98.7	.03	10 th
Processing centers	0	0.00	0	0.00	2	.9	222	99.1	.01	12 th

Involvement in livelihood activities

Non-farm based activities: Table 5 shows that most respondents were not involved in non-agricultural livelihood activities such as tie-dye (100.0%), pottery (99.1%), bricklaying (96.4%), carpentry/furniture (99.6%), transportation 97.3%, and motor mechanic (100.0%). Also not involved were barbing (99.1%), blacksmithing (100.0%), and bricks making (99.6%) soap making/selling 100.0%, welding (99.6%), vulcanizing (99.6%) and Clergy work (99.6%). Others included hair making (96.4%), shoe making (98.2%), tailoring (92.9%), trading (71.0%), and civil servant as well as casual labours (99.1%), rentals (100.0%), weaving (100.0%) and water sales (99.1%). In the same vein, estate management (100.0%), basket making (99.6%), sales/processing of agricultural products (96.4%) and night/day guard (99.6%) were among non-agricultural livelihood activities the respondents were not involved in.

Off-farm/processing livelihood activities: The result on off-farm/processing livelihood activities as also shown in Table 5 revealed that most respondents were also not involved in milk processing (99.6%), yoghurt 99.6%), butter (99.6%), cereal meals (99.6%) and fish(100.0%). Grinding of tomatoes/pepper (99.6%), selling of fire wood (99.1%), gathering/selling of non-timber forest product (99.6%), hunting (99.6%), milling of farm products (100.0%) and food vending (96.4%) were among the non-farm/processing livelihood activities that did not record most respondents' involvement.

Agricultural based livelihood activities: The result on Table 5 further reveals that majority of the respondents were involved in selling of farm waste (93.3%), on farm crop processing (83.9%), rearing and sales of goats (78.1%), poultry keeping 96.8%), arable crop farming (67.4%), sheep rearing and sales (62.5%), vegetable farming (62.1%) and cattle rearing and sales (60.0%). However, fish farming (99.6%) bee keeping (98.2%), tree crop (90.6%) rearing of rabbit (88.8%) were agricultural based livelihood activities the respondents did not practice. Table 6 gives a summary of respondents' level of involvement in livelihood activities. The result shows that the overall level of involvement in livelihood activities of most (57.6%) respondents was low. It also revealed that most respondents' levels of involvement in non-farm (53.1%) and off-farm/processing (91.1%) activities were low. However, level of involvement of majority (58.0%) in agricultural based activities was high.

Table 5: distribution of respondents based on livelihood activities involved

Variables	Yes		No	
	F	%	F	%
Non-farm based activities:				
Tie-dye	0	0.00	224	100.0
Pottery	2	.9	222	99.1
Bricklaying	8	3.6	216	96.4
Carpentry/furniture	1	.4	223	99.6
Transportation	6	2.7	218	97.3
Motor mechanic	0	0.00	224	100.0
Barbing	2	.9	222	99.1
Blacksmithing	0	0.00	224	100.0
Brick making	1	.4	223	99.6
Soap making/selling	0	0.00	224	100.0
Welding	1	.4	223	99.6
Vulcanizing	1	.4	223	99.6
Clergy work	1	.4	223	99.6
Hair plaiting	8	3.6	216	96.4
Shoe making	4	1.8	220	98.2
Tailoring	16	7.1	208	92.9
Trading	65	29.0	159	71.0
Civil servant	2	.9	222	99.1
Casual labourer	7	3.1	217	96.9
Rentals	0	0.00	224	100.0
Weaving	0	0.00	224	100.0
Water selling	2	.9	222	99.1
Estate management	0	0.00	224	100.0
Basket making	1	.4	223	99.6
Sale of processed agric products	8	3.6	216	96.4
Night/day guard	1	.4	223	99.6
Off-farm/processing activities				
Processing milk (Nunu)	1	.4	223	99.6
Processing of Yoghurt (Kindirimu)	1	.4	223	99.6
Processing of butter (Mai shanu)	1	.4	223	99.6
Processing of cereal meals (ura/Dekere)	1	.4	223	99.6
Processing of fish	0	0.00	224	100.0
Grinding of pepper/tomatoes	1	.4	223	99.6
Selling of firewood	2	.9	222	99.1
Gathering/selling of non timber forest products (NTFPs)	1	.4	223	99.6
Hunting	1	.4	223	99.6
Milling of farm products	0	0.00	224	100.0
Food vending	8	3.6	216	96.4
Agricultural based activities:				
Vegetable farming	139	62.1	85	37.9
Rear cattle and sale	135	60.3	89	39.7
Rear goats and sale	175	78.1	49	21.9
Rear sheep and sale	140	62.5	84	37.5
Poultry	154	68.8	70	31.3
Arable crops farming	151	67.4	73	32.6
Rabbitary and sale	25	11.2	199	88.8
Selling of farm waste	209	93.3	15	6.7
Tree crops	21	9.4	203	90.6
Bee keeping	4	1.8	220	98.2
On farm crop processing	188	83.9	36	16.1
Fish farming	1	.4	223	99.6

Table 6: Respondents' level of involvement in livelihood activities

Livelihood activities	F	%	Minimum score	Maximum score	Mean score	Standard deviation
Overall livelihood activities						
High (< mean)	95	42.4	0.00	18.00	8.1830	3.60088
Low (\geq mean)	129	57.6				
Total	224	100				
Non-farm:						
High	105	46.9	.00	6.00	1.0938	1.22937
Low	119	53.1				
Total	224	100				
Off-farm/processing activities						
High	20	8.9	.00	4.00	.1920	.66544
Low	204	91.1				
Total	224	100				
Agricultural based activities:						
High	130	58.0	.00	16.00	6.8973	3.90736
Low	94	42.0				
Total	224	100				

Perceived effect of infrastructural facilities on respondents' livelihood activities

Non-farm based livelihood activities: Table 7 shows respondents' perceived effect of infrastructural facilities on their involvement in non-agricultural based activities. The result revealed that infrastructural facilities had no effect on respondents' involvement on tie-dye (97.8%), pottery (97.8%), motor mechanic (98.7%), blacksmithing (98.7%), soap making/selling (98.7%), rentals (98.7%), weaving (98.7%), estate management (98.7%) and basket making (98.7%). Also no effect was recorded on involvement in carpentry (98.2%), welding (98.2%), vulcanizing (98.2%), clergy work (98.2%), hair plaiting (98.2%), shoe making (98.2%) and night/day guard (98.2%). Others include water trading (97.8%), barbing (97.6%), and civil service (97.2%), sale of processed agricultural products (96.0%), casual labour (96.0%), transportation (96.0%), bricklaying (95.1%), tailoring (94.2%) and shoe making (94.2%). This means that available infrastructural facilities in the area were adjudged to have had no effect on most respondents' involvement in non-agricultural based livelihood activities in the area. However, both pottery (mean = 2.98), bricklaying (mean = 2.98), carpentry (mean = 2.98), brick making (mean = 2.98), welding (mean = 2.98), vulcanizing (mean = 2.98), clergy work (mean = 2.98), hair plaiting (mean = 2.98), shoe making (mean = 2.98), trading (mean = 2.98), civil service (mean = 2.98), casual labourer (mean = 2.98) and night/day guard (mean = 2.98) ranked 1st as non-agricultural livelihood activities that recorded no effect in respondents' level of involvement due to available infrastructure. These were followed by barbing (mean = 2.97), soap making/selling (mean = 2.97), rentals (mean = 2.97), weaving (mean = 2.97), estate management (mean = 2.97), basket making (mean = 2.97) sale of processed agricultural products (mean = 2.97), transport (mean = 2.97), motor mechanic (mean = 2.97) that ranked 2nd and tie-dye (mean = 2.96), casual labourer (mean = 2.96), tailoring (mean = 2.91) that ranked 3rd and 4th respectively. The result further showed in

Table 11 that most (80.4%) respondents' perception of the effect of infrastructural facilities on their non-farm based activities was low.

Off-farm/processing based livelihood activities: The result also revealed that most respondents perceived their involvement in milk processing (98.7%), butter (98.7%), fish (98.7%), gathering/selling of non timber forest products (98.7%), and milling of farm products (98.7%) as having not being affected by any of the available facilities. Processing of yoghurt (98.2%), cereal meals (98.2%), hunting (98.2%), selling of firewood (96.9%) and food vending (96.0%) were also not affected. On the other hand, processing of yoghurt (mean = 2.98), butter (mean = 2.98) and firewood sales ranked 1st as off-farm/processing as livelihood activities respondents' involvements in them were not affected by available facilities. Overall, the result in Table 8 revealed that 95.1% respondents perceived level of infrastructural effect on off-farm based activities to be low.

Agricultural based livelihood activities: Infrastructural facilities were also perceived to have had no effect on respondents' involvement in agricultural based activities such as fish farming (97.8%), bee keeping (95.1%), selling of farm waste (94.6%), tree crops (93.8%) and rabbitary and sale (91.1%). No effects were also perceived on farm crop processing (83.5%), vegetable farming (63.4%), rearing and sale of cattle (58.0%), arable crop farming (45.1%), rearing and sale of sheep (44.2%), poultry (43.3%), rearing and sale goat (36.2%). The study further indicated that arable crop (mean = 3.04), poultry (mean = 2.98), fish farming (mean = 2.96) and rabbitary and sale (mean = 2.96), farm waste sales (mean = 2.96) and vegetable farming (mean = 2.93) ranked 2nd, 3rd, and 4th respectively as agricultural based activities perceived to have not recorded effect. However, result on Table 11 summarily revealed that whereas, 62.9% perceived the effect of available facilities on their agricultural based activities high, 80.4% perceived involvement in non-farm activities low. On the overall, 57.6% of the respondents perceived the effect of infrastructural facilities on their level of involvement in livelihood activities low.

Table 7: distribution of respondents based on perceived effect of infrastructural facilities

Variables	Greatly improved	Slightly improved	No effect	Slight reduced	Greatly reduced	Mean	Rank
Non-farm based activities:							
Tie-Dye	0(0.00)	0(0.00)	219(97.8)	1(.4)	4(1.0)	2.96	3 rd
Pottery	3(1.3)	2(.9)	219(97.8)	0(0.00)	0(0.00)	2.98	1 st
Bricklaying	0(.00)	6(2.7)	213(95.1)	0(0.00)	5(2.2)	2.98	1 st
Carpentry/furniture	0(0.00)	1(.4)	220(98.2)	0(0.00)	3(1.3)	2.98	1 st
Transportation	2(.9)	1(.4)	215(96.0)	1(.4)	5(2.2)	2.97	2 nd
Motor mechanic	0(0.00)	0(0.00)	221(98.7)	0(0.00)	4(1.8)	2.97	2 nd
Barbing	0(0.00)	1(.4)	219(97.6)	0(0.00)	4(1.8)	2.97	2 nd
Blacksmithing	0(0.00)	0(0.00)	221(98.7)	0(0.00)	3(1.3)	2.97	2 nd
Brick making	0(0.00)	1(.4)	220(98.2)	0(0.00)	3(1.3)	2.98	1 st
Soap making/selling	0(0.00)	0(0.00)	221(98.7)	0(0.00)	3(1.3)	2.97	2 nd
Welding	0(0.00)	1(.4)	220(98.2)	0(0.00)	3(1.3)	2.98	1 st
Vulcanizing	0(0.00)	1(.4)	220(98.2)	0(0.00)	3(1.3)	2.98	1 st
Clergy work	0(0.00)	1(.4)	220(98.2)	0(0.00)	3(1.3)	2.98	1 st
Hair plaiting	0(0.00)	1(.4)	220(98.2)	0(0.00)	3(1.3)	2.98	1 st

Shoe making	0(0.00)	1(.4)	220(98.2)	0(0.00)	3(1.3)	2.98	1 st
Tailoring	0(0.00)	0(0.00)	211(94.2)	6(2.7)	7(3.1)	2.91	4 th
Trading	2(.9)	28(12.5)	171(76.3)	10(4.5)	13(5.8)	2.98	1 st
Civil servant	0(0.00)	2(.9)	219(97.8)	0(0.00)	3(1.3)	2.98	1 st
Casual labourer	0(0.00)	3(1.3)	215(96.0)	1(.4)	5(2.2)	2.96	3 rd
Rentals	0(0.00)	0(0.00)	221(98.7)	0(0.00)	3(1.3)	2.97	2 nd
Weaving	0(0.00)	0(0.00)	221(98.7)	0(0.00)	3(1.3)	2.97	2 nd
Water trading	0(0.00)	1(.4)	219(97.8)	0(0.00)	4(1.8)	2.97	2 nd
Estate management	0(0.00)	0(0.00)	221(98.7)	0(0.00)	3(1.3)	2.97	2 nd
Basket making	0(0.00)	0(0.00)	221(98.7)	0(0.00)	3(1.3)	2.97	2 nd
Sale of processed agric products	0(0.00)	3(1.3)	215(96.0)	3(1.3)	3(1.3)	2.97	2 nd
Night/day guard	0(0.00)	1(.4)	220(98.2)	0(0.00)	3(1.3)	2.98	1 st
Off-farm/processing activities							
Processing milk (Nunu)	0(0.00)	0(0.00)	221(98.7)	0(0.00)	3(1.3)	2.97	2 nd
Processing of Yoghurt (Kindirimu)	0(0.00)	1(.4)	220(98.2)	0(0.00)	3(1.3)	2.98	1 st
Processing of butter (Mai shanu)	0(0.00)	0(0.00)	221(98.7)	0(0.00)	3(1.3)	2.97	2 nd
Processing of cereal meals (ura/Dekere)	0(0.00)	1(.4)	220(98.2)	0(0.00)	3(1.3)	2.98	1 st
Processing of fish	0(0.00)	0(0.00)	221(98.7)	0(0.00)	3(1.3)	2.97	2 nd
Grinding of pepper/tomatoes	0(0.00)	0(0.00)	219(97.8)	0(0.00)	4(1.6)	2.96	3 rd
Selling of firewood	0(0.00)	3(1.3)	217(96.9)	0(0.00)	4(1.8)	2.98	1 st
Gathering/selling of non timber forest products (NTFPs)	0(0.00)	0(0.00)	221(98.7)	0(0.00)	3(1.3)	2.97	2 nd
Hunting	0(0.00)	0(0.00)	220(98.2)	1(.4)	3(1.3)	2.97	2 nd
Milling of farm products	0(0.00)	0(0.00)	221(98.7)	0(0.00)	3(1.3)	2.97	2 nd
Food vending	1(.4)	1(.4)	215(96.0)	2(.9)	5(2.2)	2.96	3 rd
Agricultural based activities:							
Vegetable farming	3(18.3)	41(18.3)	142(63.4)	13(5.8)	25(11.2)	2.93	4 th
Rear cattle and sale	2(.9)	43(19.2)	130(58.0)	19(8.5)	30(13.4)	2.86	8 th
Rear goats and sale	8(3.6)	66(29.5)	81(36.2)	30(13.4)	39(17.4)	2.89	6 th
Rear sheep and sale	7(3.1)	58(25.9)	99(44.2)	22(9.8)	38(17.0)	2.88	7 th
Poultry	4(1.8)	70(31.3)	97(43.3)	23(10.3)	30(13.4)	2.98	2 nd
Arable crops farming	4(1.8)	74(33.0)	101(45.1)	16(7.1)	29(12.9)	3.04	1 st
Rabbitary and sale	2(.9)	8(3.6)	204(91.1)	0(0.00)	6(2.7)	2.96	3 rd
Selling of farm waste	0(0.00)	4(1.8)	212(94.6)	2(.9)	6(2.7)	2.96	3 rd
Tree crops production	1(.4)	4(1.8)	210(93.8)	1(.4)	8(3.6)	2.96	3 rd
Bee keeping	0(0.00)	1(.4)	213(95.1)	1(.4)	9(4.0)	2.92	5 th
On farm crop processing	1(.4)	1(.4)	187(83.5)	27(12.1)	8(3.6)	2.82	10 th
Fish farming	0(0.00)	0(0.00)	219(97.8)	0(0.00)	5(2.2)	2.96	3 rd

Table 8: Respondents' level of perceived effect of infrastructural facilities on their livelihood activities

Livelihood activities	F	%	Minimum score	Maximum score	Mean score	Standard deviation
Overall livelihood activities						
High (< mean)	95	42.4	0.00	18.00	8.1830	3.60088
Low (\geq mean)	129	57.6				
Total	224	100				
Non-farm:						
High	44	19.6	26.00	81.00	77.28	6.033
Low	180	80.4				
Total	224	100				
Off-farm/processing activities						
High	11	4.9	11.0	35.00	32.69	2.56
Low	213	95.1				
Total	224	100				
Agricultural based activities:						
High	141	62.9	14.00	49.00	35.13	6.26
Low	83	37.1				
Total	224	100				

Relationship between variables

The Chi-square analysis result on Table 9 shows that significant relationship exist between sex ($\chi^2 = 58.017$, $p = 0.05$), household size ($\chi^2 = 5.393$, $p = 0.05$) and respondents' perceived effect of infrastructural facilities.

Table 9: showing chi-square analysis of the relationship between respondents' selected socio-economic characteristics and level of involvement in livelihood activities

Variables	χ^2	Df	P	Decision
Sex	58.017	1	0.000	S
Marital status	0.099	1	0.753	NS
Education	28.896	4	0.000	NS
Religion	0.033	1	0.856	NS
Household size	5.393	2	0.047	S

The study further revealed (Table 10) that a significant correlations exist between age ($r = 0.143$), access ($r = -0.232$), condition ($r = -0.130$), constraints ($r = 0.143$) and respondents' perceived effect of infrastructural facilities on their livelihood activities.

Table 10: showing a PPMC analysis of the relationship between age, availability, access to, condition of, constraints to use of infrastructure and livelihood activities

Variables	r	P	Decision
Age	0.143	0.032	S
Availability	0.072	0.283	NS
Access	-0.232	0.000	S
Condition	-0.130	0.050	S
Constraints	0.143	0.032	S
Perceived effects	-0.015	0.828	NS

DISCUSSION OF FINDINGS

The result on age implies that the respondents are still young and vibrant to diversify their livelihood activities if provided with basic enabling environment. It is always a factor that determines and widens ones behavior and vision through experience. The result concurs with that of (Tyabo *et al* 2015) on rural dwellers of Niger State, Nigeria. The result that most respondents were males is an indication that more men were aware of infrastructural provisions and involved in most livelihood activities. The result also confirms the common saying in the area that women do not have a voice on most issues but could be heard through their husbands. Galadima (2014) also made similar finding attributing it to the cultural barrier in the area that do not allow women to freely come out to participate in developmental programmes and projects. The result on respondents' marital status (married) is an indication that they can easily get involved in one form of livelihood activities or the other to cope with the responsibilities associated with marital life. The result is in conformity with the research finding of Oladeji & Thomas (2010) that marriage confers responsibility on people to cater for their households through various livelihood activities. The Quranic educational status depicts low level of education attainment. This infers that they will find it difficult to read and understand important and available infrastructural facilities and technicalities. The AED (2003) revealed the low literacy level in many rural areas and emphasized that the scenario poses a lot of challenges. In corroboration, Mamen (2000) revealed that good level of education can influence individual's ability to higher economic returns, better access to technology and sources of information. The investigation of Umar & Musa (2015) among small scale farmers in Katsina State also revealed that all the farmers acquired various levels of Qur'anic education via the traditional Qur'anic school.

The finding that majority belonged to the Islamic faith is typical of a Northern States in Nigeria where Islamic religion dominates. The finding was in tandem with that of Ikwuakam *et. al* (2016) on rural households in Katsina State though, contrary to a situation in the Southwest Nigeria (Judamat *et. al* 2010). The household size of between 6 and 10 is informative that the respondents have large household size. This could translate into having cheap labour within the household and which the respondents could use to prosecute their livelihood activities. Such also will mean increase in productivity and benefits. In line with this Thabane (2015) stated that children are

instrumental economic resources of a family unit who generate income to the household. Regassa (2011) also found a positive relationship between household size and the level of coping strategies used by a households as against Zarai & Gebreegziabher (2011) who contrarily stated that large household are more vulnerable to food insecurity because the dependant often times are unemployed and usually in school, thus, increasing the demand in food and other household resources. The result however, corresponds with the findings of Ikwuakam *et al* (2016) on rural households in Katsina State. That the primary occupation of the respondents is farming was expected as majority of rural populace is associated with land resources for agriculture. The result conforms to Oladeji & Thomas (2010) and Olayemi (2002) that agriculture is a predominant occupation and principal source of livelihood among rural dwellers.

The non-availability of most infrastructural facilities as the study revealed was typical of most rural communities visited. This has implication for rural-urban drift of young and active youths; thereby abandoning agriculture in the weak hands of aged rural men and women. Decline in agricultural production is also unavoidable as well as inability of rural populace to open up new opportunities, diversify their livelihood activities and income. Idachaba (1989) had in affirmation stated that it is difficult for rural sector to contribute significantly to real economic progress in the absence of basic infrastructural facilities. The result is in tandem with Galadima (2014) who observed that rural communities are seriously marginalized in terms of basic elements of development such as, electricity, health care, educational and recreational facilities.

The poor state of available infrastructural facilities has serious implications on the living condition of rural people. It goes to show that rural people are worse off because of the denials and state of these basic facilities. Olawoye (2003) has also revealed that as precarious as the facilities are; the rural populace has continued to find it difficult to break out of the cycle of poverty often associated with their rural communities. The result corresponds to Yomi Afred (2011) who described rural areas as being agrarian with its attendant lack or deplorable state of electricity, communication facilities, markets, health centers, roads and educational infrastructure. The scenario is made more complex with limited access the respondents had to the available facilities. Field experience showed that in some communities, where the facilities were available, they were either locked or dysfunctional. Ashimolowo (2011) affirmed that rural populace lack access to basic infrastructural facilities such as electricity and energy, telecommunications, roads and education, a scenario which makes them highly vulnerable to abject poverty.

The overall low levels of involvement in livelihood activities and specifically in non-farm and off-farm/processing livelihood activities may be due non-availability and lack of access to infrastructural facilities that support respondents' involvement in activities in the area. This is in conformity with finding of Janowski (2003) who found that most rural areas were involved in most off-farm activities depending on availability and access to resources. However, respondents' high level of involvement in agricultural based livelihood activities could be attributed to the natural

endowment of the area rather than available infrastructural facilities. The result is consistent with the findings of Oladeje and Thomas (2010) in Ogun State.

The perception that infrastructural facilities in the area had low level of effect on respondents' livelihood activities is attributable to limited available facilities, their poor conditions and low accessibility. Ekong (2003) looked at rural infrastructure as underlying basic physical, social and institutional terms of capital which enhance rural dwellers' production, distribution and consumption activities and ultimately the quality of their life. However, where they are lacking or in short supply, little or nothing should be expected to improve among the rural populace

There is significant relationship existing between sex, household size and respondents' perceived effect of infrastructural facilities is an indication that sex and household size played important role in the way respondents perceived the effect of infrastructural facilities on their livelihood activities. Sex and household size in most areas are factors that shape people's role performance and involvement in livelihood activities. The way they perceive an intervention scheme often times is predicated upon the effects of such interventions on their gender roles as a female or male and household size. In the same vein, the significant correlation between age, condition of available infrastructure, and respondents' perception on the effect of infrastructural facilities the level they were factored into respondents' level of involvement in livelihood activities as well as what and how they perceived the effect. It also is therefore important to note that the r-value that is negative for access and condition of infrastructural facilities infers that as these items continue get worse off, so will respondents who perceive the effect of being low or negative or unfavourable increase in numbers. Experience comes with age and therefore has correlation with the manner people perceive developmental efforts and how such affect what they do for a living.

CONCLUSION/RECOMMENDATIONS

Based on the findings of the study, it is concluded that most respondents were in their active productive age that could enable them break even in their primary farming occupation and other livelihood activities. It is further concluded that the perceived low levels of involvement in livelihood activities and effect of infrastructural facilities were due to abysmal levels of infrastructural provisions, access and poor state of available ones in the area.

It is therefore recommended that:

1. providing infrastructural framework based on people's felt needs and implementing same accordingly by the government and relevant private rural development agencies/donors is a *sin qua non* to improved level of livelihood activities among rural dwellers of the study area.
2. Effective monitoring with a view to ensuring that available infrastructural facilities are in good working conditions and maintained properly by relevant agencies is crucial

3. Establishing relevant skills acquisition centres is necessary in building appropriate and enough human capital to complement government' efforts in the area of maintenance culture. Intervention programmes/projects have always had sustainable impact/effects when people (users) have the managerial skills to run such themselves

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