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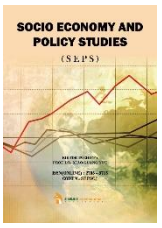

RESEARCH ARTICLE

EFFECTS OF COVID-19 PANDEMIC ON LIVELIHOOD OF RURAL COMMUNITY DWELLERS IN NIGERIA

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ABSTRACT

The study assessed the effects of covid-19 pandemic on the livelihood of the rural community dwellers in Edo State, Nigeria. A multistage sampling procedure was used to select 156 respondents. Structured interview schedule was used to collect data from the respondents which were subjected to descriptive and inferential analyses. The results revealed that the mean age of the respondents was 47.5 ± 16 years, about 61 percent of the respondents were males and majority (86.5%) had formal education with a mean annual income of N1233846.15. Majority engaged in multiple livelihood activities with arable farming (58.3%), agro-marketing (34%) and petty trading (37.4%) taking the lead. Cash at hand (87.1%), access to land (76.9%), skill acquisition centre (86.7%), possession of mobile phones (90.1%), and access to markets (98.1%) were major livelihood assets of the respondents. Many (53.7%) of the respondents had indifferent perception towards Covid-19 pandemic while majority (64 %) indicated that the effects of Covid-19 pandemic on their livelihoods was low. Income, years of education and perception about covid-19 pandemic were significantly correlated with the effects of covid-19 pandemic on respondents' livelihoods. The study concluded that Covid-19 pandemic did not seriously affect livelihoods of rural dwellers in the study area.

KEYWORDS

Covid-19, livelihood assets, impact, perception, rural residents

1. INTRODUCTION

Livelihood is a combination of activities, assets and capabilities that is required to make a living. According to the International Federation of Red Cross and Red Crescent societies (IFRC), livelihood refers to means of making a living which include people's activities, assets, capabilities, income and decision that is required to secure the necessities of life (IFRC, 2019). FAO and WFP conceptualised livelihood assets as the available resource-base of various households which are categorised into natural, human, financial, physical and social asset (FAO and WFP, 2012). Natural assets are the natural resources found in the natural environment and consist of biological assets either produced or wild, land and water areas with their ecosystem, subsoil assets and air while human assets are the economic value of a worker's experience and skills. Human assets are also viewed as the amount and quality of available labour in various households and vary from household based on their leadership potentials, household size and skill level among others (Adisa et al., 2016).

Social assets refer to the social resources upon which people build or form their pursuit of livelihood objectives. Physical assets are the basic infrastructure and goods needed to support livelihood which include equipment, machine, and machineries, landed properties, real estate, and precious metal among others (Adisa et al., 2016; Mwakubo et al., 2009). Financial assets are the resources needed for the acquisition of plants, equipment, and other items needed to build products or offer services. It also includes the resources that are used by people to attain their livelihood objectives (Mwakubo et al., 2009). The various components of livelihood assets are not independent of each other, and they endow the owners the ability to cope and explore the adverse situation of livelihood and also getting out of the same (Mistri and Das, 2020). Livelihood was conceptualised in this study as rural dwellers' activities and assets geared towards making a living.

Covid-19 was originated from the commercial city of Wuhan, China in November 2019. The federal ministry of health in Nigeria confirmed its first case of Covid-19 on the 27th of February 2020 (NCDC, 2020). It came into Nigeria through immigration of a foreign citizen, and later spread across the nation, forcing the government to enforce a national lockdown (NCDC, 2020). In Edo state, a curfew was placed on the citizens from dawn to dusk for ten days. There are overwhelming evidences that the pandemic has put pressures on the economic and other livelihood activities of different countries all over the world although, the effect varies from one geographical locations, economic status and demographic compositions to another (Kasseign and Endri, 2021). In Nigeria, Covid-19 has substantially affected livelihoods, consumption pattern and food security status of the people and also incapacitated farmers by causing shortage of labour as a result of restriction policy implemented by the government thereby, reducing agricultural production (Abiodun et al., 2021).

According to Ozili the effects of the Covid-19 pandemic were high on African countries, due to the imposed social distancing and its strictness level among various countries (Ozili, 2020). It was also observed that these policies created anxiety, a sociological consequence on various households and families in the African region. Elluh in his study concluded that economic activities and supply of goods have reduced in Nigeria due to the restriction policy of government during the pandemic (Elluh, 2020). Otache also found out that the pandemic came at a crucial period for most farmers in Nigeria because the planting season for most cash crops starts around March and April which made it difficult for farmers to have access to farm inputs like seedlings, fertilizers, herbicides, seeds other equipment

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they needed to carry out their farming operations (Otache, 2020). For some of the farmers, it came during the peak of harvest which was detrimental as it disturbed their farming activities and eventually led to their loss of income.

Furthermore, some researcher reported that 26% of their sampled population believed that they could contact the disease, 20% perceived the disease as an attack from the western world while 12% believed that the disease was a facade and an overstated event by the government and the public health sector (Ilesanmi and Afolabi, 2020). Although several studies have been carried on the effects of Covid-19 pandemic on food security, food-supply, livelihood assets, economic, education, and health among others. However, there is dearth of empirical evidence on the effects of Covid-19 pandemic on the livelihood of rural community dwellers in Nigeria; hence, the quest to carry out this study among the rural community dwellers of Edo State, Nigeria.

The study specifically profiled the socio-economic characteristics of the rural community dwellers; identified livelihood activities and assets of the respondents; examined their perception about Covid-19 pandemic and determined the effects of the Covid-19 pandemic on respondents' livelihood in the study area. The hypotheses tested in the study were: there is no significant relationship between respondents' socio-economic characteristics and the effects of Covid-19 on their livelihood; and there is no significant relationship between respondents' perception about Covid-19 pandemic and its effects on their livelihood. The study is of importance in the sense that it would enable readers, policy makers and other relevant stakeholders to understand rural dwellers' perception and reaction to pandemic situations and the extent to which rural livelihoods could be susceptible to pandemic.

2. Materials and Methods

2.1 Study Area and Sampling Technique

This study was carried out in Edo State, Nigeria. The State covers an area of approximately 17,802 square kilometres and it is bounded in the northeast by Kogi State, in the southeast by Delta State and in the southwest by Ondo State. It lies in the coordinates of 6.6342°N, 5.9034°E. The State has five (5) major ethnic groups namely: Bini, Esan, Afemai, Owan and Akoko-edo. Primary data were collected using interview schedule while the population for the study were rural community dwellers who engaged in one form of livelihood activity or the other. A multistage sampling procedure was adopted for the study to select the respondents.

At the first stage, one Local Government Area (LGA) each was purposively selected from the 3 agricultural Zones based on the degree of rurality of the LGAs. The selected LGAs were Esan West in Edo Central, Owan West in Edo North and Uhunmueode in Edo South. The second stage involved proportionate selection of a total of twelve (12) communities from the selected LGAs which translated into six (6) communities from Esan West, two (2) from Owan West and four (4) from Uhunmueode. At the final stage, 13 rural community dwellers were randomly selected from each of the chosen communities to make a total of 156 respondents.

2.2 Measurement of Variables

Effects of Covid-19 on livelihood of rural community dwellers was the dependent variable of the study. It was measured using two indicators (livelihood activities and assets) scored on a four-point Likert-like rating scale of no effect (0 point), low effect (1 point), moderate effect (2 points) and high effect (3 points) as used (Yazdanpanah et al., 2021). The total score of each respondent from the two indicators were added together to form the Covid-19 effects score while mean and standard deviation was used for categorization into high, moderate and low levels. The minimum score was zero while the maximum score was 81. Respondents with scores of less than or equal to mean score minus standard deviation were categorized as experiencing low effect of the pandemic on their livelihood but respondents with scores equal to mean plus standard deviation and above were categorized as high, while respondents with scores in between the high and low values were categorized as moderate.

The perception of respondents towards Covid-19 pandemic was measured using a five-point Likert scale (5 = strongly agreed, 4 = agreed, 3 = undecided, 2 = disagreed, 1= strongly disagreed for the positive statement and vice versa for the negative statements). The minimum score was 12 and the maximum obtainable was 60. The overall perception score was generated which was further categorized into favourable, indifferent, and unfavourable perception using equal interval approach. Livelihood assets and livelihood activities were measured by asking the respondents to indicate their livelihood assets under five categories (human, physical, capital, social and natural) and livelihood activities under three categories (on-farm, non-farm and off-farm activities). Affirmative responses for each livelihood asset and livelihood activity were scored one point each. Duly validated and pretested structured interview schedule was used to elicit information from the respondents. Data were processed using Statistical Package for Social Sciences (SPSS) version 23. Descriptive statistics such as frequency counts, percentages, means and standard deviation were used while chi-square and correlation analyses were used to draw inferences.

3. Results and Discussions

3.1 Socio-Economic Characteristics

The results in Table 1 show that majority of (60.9%) of the respondents were males. This implies that majority of the livelihood activities were carried out by male which suggest that rural communities in the study area are patriarchal in nature where the women are home keepers while the men fend for the family. This is in consonance with the finding of who posited that males dominate various livelihood activities probably because men are more energetic and capable of involving in tedious production activities than women (Ukamaka et al., 2017). The mean age of the respondents was 47.5 ± 16 years, indicating that majority of the respondents were in their middle age, still agile, productive and active; this might give them greater ability to engage in diversified livelihood activities so as to cope with the effects of covid-19. The result agrees with the findings of who posited that respondents with the mean age of 44.58 years are productive and eager to engage in agriculture and other livelihood activities (Abiodun et al., 2019).

Majority (76.9%) of the respondents were married, suggesting that they were people with family responsibilities. This might necessitate their engagement in various livelihood activities as reported (Alabi and Famakinwa, 2019). About 79.5% practised Christianity while few (20.5%) of the respondents practised Islam. This shows that Christianity was the dominant religion in the study area. Religious centres could serve as suitable platform for sensitization and orientation of their members on Covid-19 measures and provide opportunities for information dissemination on different livelihood activities. About 67 percent of the respondents were indigenes of their respective communities. This could enhance their access to locally available resources to cushion the effects of Covid-19 pandemic on their livelihood. Majority (86.5%) of the respondents had one form of education or the other, which implies that they were enlightened and might have exposure to streams of income in a bid to sustaining their livelihood activities as reported (Abiodun et al., 2019). About 66 percent of the respondents had 5 members in their households with a mean household size of 5±2 members.

The implication of the findings is that majority of the rural households in the study area have moderate size as against what used to be obtainable traditionally in most rural areas in Africa where parents with large household size use their children as cheap source of labour for their livelihood activities. This is similar to the findings of who reported that majority of rural community dwellers had a mean household size of 5 members (Alabi et al., 2018). Evidence from Table 1 also show that majority (86.5%) of the respondents were members of social organization while 13.5 percent did not belong to any social organization. This result collaborates the findings of that majority of rural dwellers belonged to social organizations (Adesoji et al., 2020; Middendorf et al., 2021). This implies that respondents would have the opportunity of benefiting from the privileges attached to membership of social organization such as easy access to information, financial resources and agricultural inputs at subsidized price which can enhance their various livelihood activities.

Majority (68.6%) of the respondents had more than 10 years of experience in their various livelihood activities with a mean year of experience of 19.7±4.8. This could be an indication that their various occupations were probably profitable to have continuing doing them for such a long period of time. About one-third (33.3%) of the respondents realised between N500,001 to N1,000,000 per year with a mean income of N1,233,846.15 ± 169514.70. This invariably implies that respondents realized N102,820 per month which is higher than the national minimum wage of N 30,000 monthly in Nigeria, suggesting that majority of the rural community dwellers in the study area had sustainable livelihood as majority of them were living a little above the poverty line of 1USD (N 436.48) per day. This observation maybe due to the fact that Edo is one of the crude oil producing states in Nigeria that enjoy special derivatives from crude oil funds.

Table 1: Distribution of Respondents by Socio-Economic Characteristics n=156			
Variable	**Frequency**	**Percentage**	**Mean± Std. Dev**
Sex			
Male	95	60.9	
Female	61	39.1	
Age (years)			
<30	26	16.7	47.5±16
30-44	44	28.2	
45-59	44	28.2	
≥60	42	26.9	
Religion			
Christianity	124	79.5	
Islam	32	20.5	
Marital status			
Single	23	14.7	
Married	120	76.9	
Divorced	1	0.6	
Widow	12	7.7	
Indigene			
No	52	33.3	
Yes	104	66.7	
Highest level of education			
Primary	18	11.5	
Secondary	60	38.5	
Tertiary	57	36.5	
No education	21	13.5	
Household size			
≤5	102	65.4	5±2
6-10	51	32.7	
≥11	3	1.9	
Years of experience			
≤10	49	31.4	19.7±14.8
10-19	42	26.9	
20-29	21	13.5	
≥30	44	28.2	
Average annual income(₦)			
≤500000	28	17.9	1233846.15±169514.7
500001-1000000	52	33.3	
1000001-1500000	31	19.9	

Source: Field survey, 2021

Table 2: Respondents' On-farm, Off-Farm and Non-farm Activities		
****Variable**	**Frequency**	**Percentage**
On-farm		
Arable crop production	91	58.3
Tree crop production	46	29.5
Livestock production	27	17.3
Fish production	5	3.2
Off-farm		
Agro-marketing	53	34
Agro-processing	16	10.3
Wage-labour	10	6.4
Sales of input supply	9	5.8
Non-farm activities		
Petty trading	58	37.2
Hair salon/barbing	16	10.3
Tailoring	13	8.3
Civil service	11	7.1
Carpentry	10	6.4
Commercial motorcycling	8	5.7
Craftsmanship	4	2.6
Vulcanizing	2	1.3

** Multiple responses

3.2 Livelihood Activities

The results in Table 2 show that respondents engaged in multiple livelihood activities across the on-farm, off-farm and non-farm sectors. The on-farm livelihood activities they engaged in include arable crop production (58.3 %), tree crop production (29.5%) and livestock production (17.3%). This suggests that although rural community dwellers in the study area engaged in many on-farm livelihood activities, arable crop production was the most prominent. This confirms the works of that majority of rural dwellers engaged in arable crop production (Middendorf et al., 2021). The off-farm livelihood activities engaged in include agro-marketing (34%), followed by agro-processing (10.3%), wage labour (6.4%), and input supply (5.8%).

The result implies that some of the respondents diversified into off-farm activities to support their livelihoods. This is similar to the results of which reported that rural dwellers still fall back on off-farm activities during agricultural off seasons to supplement their household income (Amare et al., 2021). Information on Table 2 shows further that petty trading (37.2%) took the lead among the non-farm activities, followed by hair dressing/barbing (10.3%), tailoring (8.3%), civil service (7.1%) and carpentry (6.4%) among others. This result implies that petty trading and hair dressing or barbing were the most prominent non-farm livelihood activities of rural community dwellers in the study area. This is similar to the findings of who established that small business holding (petty trading) was among the most prominent non-farm livelihood activities of rural households (Alabi et al., 2017; Mulat et al., 2021; Faborode and Fakoyede, 2021).

The overall implication is that although rural dwellers engaged in on-farm activities as their main source of livelihood but they still diversified into off-farm and non-farm activities to meet their household needs during off seasons. This finding agrees with the submission of who opined that most rural households in Africa engage in on-farm activities as their main source of livelihood (Bilah et al., 2015). Also, the finding shows that there are untapped potentials in both off-farm and non-farm livelihood activities in the study area that could enhance sustainable economy of rural community dwellers as reported (Faborode and Fakoyede, 2021).

Table 3: Respondents' Livelihood Assets

**Variable	Frequency	Percentage
Financial Assets		
cash at hand	135	87.1
Savings from enterprise	105	67.7
Access to loans	82	52.6
Gifts from others	82	52.6
Remittance	54	34.6
Salary	20	12.8
Pension	4	2.6
Human assets		
Access to skill acquisition centre	132	85.6
Access to health	110	70.9
Access to education	96	61.5
Access to extension service	82	52.2
Natural assets		
Access to land for activities	120	76.9
Possession of livestock	63	40.4
Possession of tree/economic crop	60	38.5
Hunting of wildlife	11	7.6
Possession of fish	4	2.6
Physical assets		
Mobile phone	140	90.3
Machines, tools for enterprise	127	81.9
Possession television or radio	123	79.3
Storage facilities	102	78.8
Means of mobility	84	53.8
Landed properties	66	42.3
Personal house	66	42.3
Pumping machine	41	26.3
Processing facilities	32	20.8
Irrigation facilities	7	4.5
Social assets		
Access to market	153	98.1
Access to place of worship	152	97.4
Participation in ceremonies	146	93.6
Association membership	132	84.6
Access to GSM network	123	78.8
Political participation	77	49.4

** multiple responses

Source: Field survey, 2021

3.3 Livelihood Assets

Results in Table 3 show that respondents possessed financially assets like cash at hand (87.1%), credit saving (67.7%), and loans (52.6%) among others. This shows that cash at hand and credit savings were the main financial assets among rural dwellers in the study area. This agrees with the work of who also reported that cash at hand and credit saving were the major financial assets of rural dwellers in Akwa Ibom State, Nigeria

(Udoh et al., 2017). Among the human assets indicated by the respondents, access to skill acquisition centre (85.6%) took the lead followed by access to health facilities (70.9%) and access to primary education (61.5%). This implies that rural dwellers in the study area were having access to relevant human assets such as vocational skills, health and educational facilities which could enhance their physical and mental development. This supports the finding of who reported that most rural farming communities in their study had access to skill acquisition centre, health facilities, education and extension service (Udoh et al., 2017).

With respect to natural assets, respondents had access to land (76.9%). livestock (40.4%) and tree crops (38.3%). This shows that land was the major natural asset which most respondents could easily access to support their livelihood activities as reported (Udoh et al., 2017). The results show further that respondent possessed the following physical assets namely: mobile phone (90.3%), machine or tools (81.9%), radio or television (79.3%), and means of mobility like motorcycles, cars and bicycles (53.8%). It can be inferred that the majority of the respondents possessed infrastructure or tools needed for their various occupations which are basic necessity of livelihood sustainability. This supports the findings of that majority of rural dwellers possessed basic tools or machines needed for their production activities (Adisa et al., 2016). On social assets, 98.1 percent had access to market; place of worship (97.4%), participation in ceremonies (93.6%), association membership (84.6%) and GSM network (78.8%). This suggests that rural dwellers in the study area have access to some social services and facilities in their various communities which might likely enhance their social interaction with other community members and necessary support towards the sustainability of their livelihood activities (Udoh et al., 2017).

3.4 Perception About of Covid-19

The results in Table 4 show the mean scores for the perception statements as indicated by the respondents. The findings revealed that respondents agreed to the following positive perception statements; Nigeria weather does not support the spread of covid-19 (mean=4.14); Covid-19 is a disease that can be cured by herbal mixture (mean= 4.05); Covid-19 is a punishment from God (mean= 3.69), Covid-19 is non-existent in Nigeria (mean=3.57). This implies that rural community dwellers in the study area believed that the spread of Covid-19 was not possible due to the hot weather conditions of Africa and that the disease was not as deadly and serious as the western nations presented it because ordinary herbal mixture can cure it. They also perceived that Covid-19 came into existence as a result of many heinous sins committed by people.

The results show further that respondents were indifferent to the negative perception statements that: Covid-19 is a biological weapon of destruction by China (mean =3.00); Covid-19 is a disease of the rich (mean=2.96), Observing Covid-19 prevention measure is not necessary (mean=2.90), Covid-19 is a deception from foreigners (mean=2.63). Moreover, the respondents agreed to the negative statements that: Covid-19 is a means of government to control the masses (mean=2.35); Covid-19 is a man-made disease (mean=2.10); Covid-19 is similar to malaria (mean=1.74) and Covid-19 is a ploy of the government to embezzle funds (1.72). It can be deduced that respondents had disposition that Covid-19 symptoms are similar to malaria and therefore it is not as deadly as the western world announced it to be.

Also, the fact that none of their community members was infected and died of the disease but they only heard about it from the news could account for their wrong perception that Covid-19 was a ploy to deceive the people by the government and to embezzle funds. Further information in Figure 1 shows that majority (53.7%) had indifferent perception about Covid-19 pandemic while few (25.9% and 20.4%) of respondents had unfavourable and favourable perception respectively. This suggests that the larger percentage of the respondents had unfavourable disposition to corona virus pandemic in the study area which could be due to their poor knowledge of the pandemic as they did not see it as a threat to human lives.

Table 4: Respondents' Mean Score of Perception Statements

Variable	Mean	Rank	Remark
Our weather doesn't support the spread of covid-19	4.14	1st	Agree
Covid-19 is a disease is cured by herbal mixture	4.05	2nd	Agree
Covid-19 is a punishment from God	3.69	3rd	Agree
Covid-19 is non-existent in Nigeria	3.57	4th	Agree
Covid-19 is a biological weapon by China	3.00	5th	Undecided
Covid-19 is a disease of the rich	2.96	6th	Undecided
Observing Covid 19 prevention measures is not necessary	2.90	7th	Undecided
Covid-19 is a deception from foreigners	2.63	8th	Undecided
Covid-19 is a means of government to control the masses	2.35	9th	Agree
Covid-19 is a man-made disease	2.10	10th	Agree
Covid-19 is similar to malaria	1.74	11th	Agree
Covid-19 is a ploy of the government to embezzle funds	1.72	12th	Agree

Source: Field survey, 2021

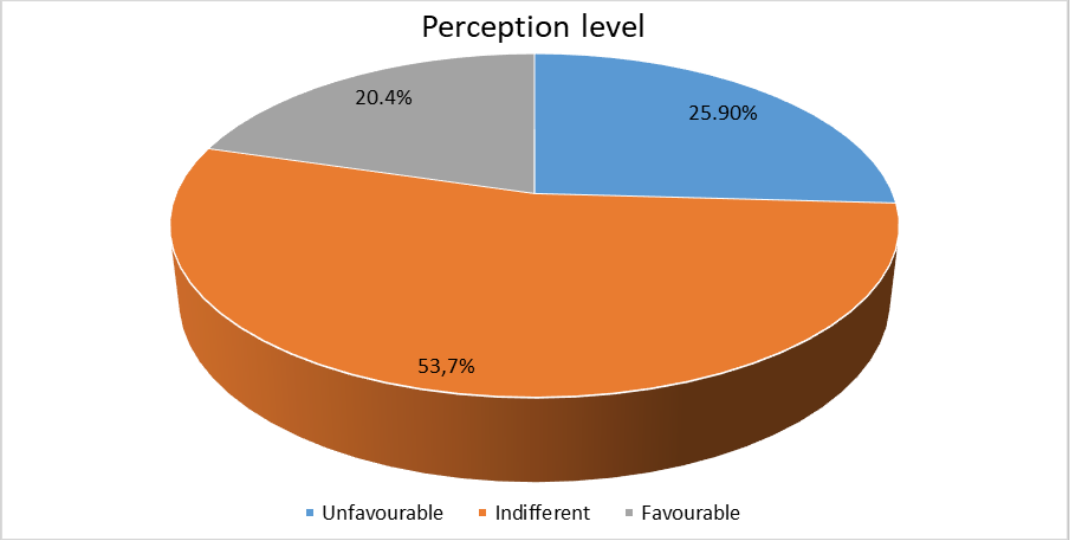

Figure 1: Distribution of Respondents by Level of Perception

3.5 Effects of Covid-19 on Rural Livelihood

The results in Table 5 show the mean scores of the effects of covid-19 pandemic on the livelihood activities and assets of the respondents. On crop and animal production activities, the respondents indicated that the effects of the pandemic on labour hiring (mean =1.03) and cropping activities (mean =0.91) was low. This is because restriction of movement in the rural areas of Nigeria during the Covid-19 pandemic lockdown was not as strict as in the cities. This finding opposes the report of who stated that the greater percentage of rural populations in Iran had the problem of hiring labours for farm works which led to delay in cropping seasons due to the pandemic (Mulat et al., 2021). However, the respondents indicated that the pandemic disrupted supply chain of agricultural produce (mean=1.96) and ability to access agricultural inputs (mean=1.74) moderately. This may be due to the ban placed on transport service which supposed to convey their products to markets, limited buyers; and closure of markets in the city centres leading to inability to purchase agricultural inputs needed for farm operations. This corroborates the findings of who reported that the pandemic disrupted supply chain of agricultural produces and farm input accessibility (Mulat et al., 2021; Middendorf et al., 2021; Khan, 2022).

Results show further that off farm and non-farm activities like agro-processing, agro marketing and petty trading were moderately affected by the pandemic. For instance, respondents indicated that Covid-19 had moderate effects on supply of raw materials for agro-processing (mean=1.82) due to lack of transportation to convey raw materials thereby reducing outputs and income of agro-processors in the study area. This is similar to the findings of who reported that Covid-19 significantly reduced the income rural households in Ethiopia (Asegie et al., 2021). Sales of petty traders and agro marketers (mean=1.63) were moderately affected because certain business activities that involved social gatherings were banned by the government to avoid the spread of the infection thereby leading to insufficient buyers and reduction in income. This confirms to the findings of (Mulat et al., 2021).

Concerning the physical assets, results reveal that Covid-19 had moderate effects on supply of work inputs (mean =1.70), this is because majority of rural dwellers work inputs were not available due to movement restrictions, and financial shortage. Perishable food crops (mean =1.69) was also seriously affected by the pandemic because respondents could not sell their perishable crop harvested due to insufficient buyers and closure of major markets. Evidence on human assets show that Covid-19 negatively impacted education of rural households' children as a result of closure of all schools to prevent the spread of the disease (mean =2.82). Covid-19 had low effects on access to adequate health information (mean =1.01) because health information was readily available on radio and television. The effects on social assets were moderate such as social participation in ceremonies and festivals (mean =2.19), social trust (mean =1.90), and social solidarity (mean =1.72) among respondents in the study area. Even though the lockdown was not totally implemented in the rural areas where people still move freely but the fear of voilating government restriction policies in line with (Kansiime et al., 2020). This result gives credence to the findings of that covid-19 pandemic has significantly reduced social participation and cooperation of rural community dwellers in Iran (Shokati Amghani et al., 2022).

The results also reveal that Covid-19 pandemic had no effects on the use of natural assets like land, water streams among others (mean=0.47) and agricultural output (mean=0.24). This may be due to the fact that restriction of movement in the study area was not strict to have warranted inability to use land and natural resources for economic activities, or disturb or delay agricultural activities such as planting, weeding and harvesting of crops which can lead to poor output. In fact, respondents indicated that many people used the period to diversify into farming as coping strategy to cushion the effects of the pandemic. Lastly on financial assets, respondents claimed that Covid-19 had low effects on some financial asset indicators. For instance, respondents indicated that Covid-19 had no effects on prices of food crops (mean=0.40), this is because food crops were produced and readily available to them. Besides, the pandemic had no effects on employment of rural dwellers (mean=0.32). This is because no job loss was reported by the respondents as the pandemic did not prevent majority of them from doing their jobs except for a few civil servants among them, unlike what happened in the cities and urban centres where a lot of people lost their jobs to Covid-19 pandemic as a result of total lockdown for more than six months. Covid-19 had low effects on cost of living (mean=0.82) and purchasing power or spending ability (mean=1.10) as a result of little rise in prices of goods and services. This is contrary to the report of Kumar and Guwahati (2021) who reported that rural dwellers spending ability were greatly affected by the pandemic.

The overall level of effects as presented in Figure 2 reveals that majority (64%) of the respondents indicated that Covid-19 pandemic had low effects on their livelihoods while 36 percent claimed that the effects was high on their livelihood. This implies that livelihood of majority of rural community dwellers in the study area were not seriously affected by Covid-19 pandemic. This is because lockdown policy that had negative effects on the livelihood of city dwellers was not strictly enforced in the rural areas as they had freedom to go about their livelihood activities with little or no restriction. This finding contradicts the results of that effects of Covid-19 had caused decline in income of rural areas due to reduction in the extraction of agricultural products as a result of the lack of transport facilities during the closure, and sudden drop in bulk demand for agricultural products in urban areas; and sudden labour and income losses to rural households in India (Yazdanpanah et al., 2021; Reddy and Mamgain, 2020).

3.6 Hypothesis Testing

The results in Table 6 reveals that only ethnicity (x^2=24.912; p≤0.01) and religious affiliations (x^2=13.479; p≤0.01) were significantly associated with the effects of Covid-19 on rural livelihood. This implies that ethnicity and religious affiliations could influence the effect of Covid-19 pandemic on livelihood. The result of correlation analysis in Table 7 shows that income (r=-0.313; p≤0.01) and years of education (r=-0.186, p=0.05) had negative but significant relationship with the effect of Covid-19 on respondents' livelihood. This implies that as income of the respondents increases, the effect of Covid-19 pandemic on their livelihood decreases. Besides, as the years of education increase, the effects of Covid-19 pandemic also decrease. This suggests that people with enough income are likely to cope better with the effects of Covid-19 pandemic better than those with low income.

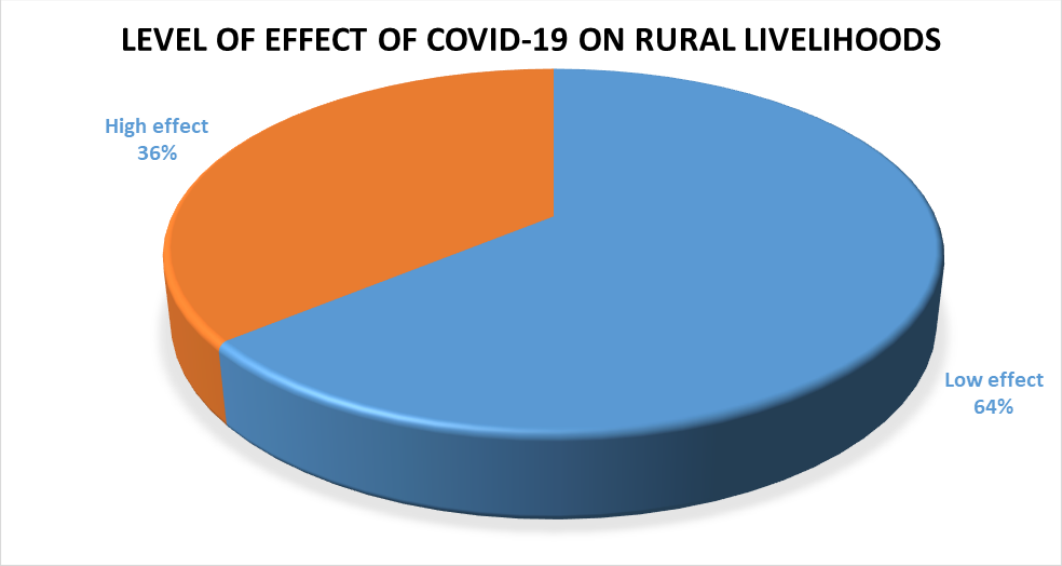

Figure 2: Distribution of respondents based on level of effects of Covid-19 Pandemic on their livelihoods

Table 5: Effects of Covid-19 on Respondents' Livelihood		
Variable	**Percentage**	**Remark**
Livelihood activities		
Crop and animal productions activities		
Labour hiring ability	1.03	LE
Supply chain of agricultural produce	1.96	LE
Access agricultural input	1.74	LE
Delay in farm work	0.91	LE
Agro processing, agro marketing and petty trading		
Supply rural materials for processing	1.82	ME
Reduction in sales and income	1.63	ME
Physical assets		
Supply of work inputs	1.70	ME
Perishability of goods in store	1.17	NE
Human assets		
Closure of schools in rural area	2.80	HE
Health information	1.73	ME
Social assets		
Social participation in ceremonies.	2.09	ME
People's trust in each other	1.90	ME
Social solidarity	1.72	ME
Crime rate	0.25	NE
Natural assets		
Agricultural output	0.47	NE
Hinder agricultural activities	0.24	NE
Financial assets		
Purchasing power of rural dwellers	1.10	LE
Cost of living in rural dwellers	0.82	LE
Prices of food crops	0.40	NE
Employment of rural populations	0.32	NE

HE = high effect, ME =moderate effect, LE = low effect, NE = No effect
Source Field survey, 2021

Table 6: Chi-Square Analysis Between Socioeconomic Characteristics and The Effects of Covid-19 Pandemic on Respondents' Livelihood			
Variables	**Chi-Square Coefficient**	**Degree of Freedom**	**P-Value**
Sex	0.144	1	0.413
Ethnicity	24.912	6	0.000
Religion	13.479	1	0.000
Indigene	0.2310	1	0.568
Major Occupation	10.427	7	0.166

Source: Field survey, 2021

Table 7: Correlation Analysis Between Socioeconomic Characteristics and The Effect of Covid-19 On Respondents' Livelihood		
Variable	**Correlation coefficient**	**P-value**
Age in years	-0.012	0.880
Household size	-0.135	0.092
Years lived in the community	-0.050	0.537
Years of education	-0.186*	0.020
Agricultural production	-0.090	0.266
Years of experience	0.126	0.118
Annual income	-0.313**	0.000
Membership of social organization	0.110	0.172

*Significant at theb0.05 level (2- tailed), **Significant at 0.01 level
Source: Field survey, 2021

Table 8: Correlation Analysis Between Respondents' Perception and Effects of Covid-19 On Their Livelihood		
Variable	**Correlation coefficient**	**p-value**
Perception	-0.453	0.00

The result in Table 8 shows that the respondents' perception about covid-19 pandemic(r=-0.353) had a negative but significant relationship with the effect of the pandemic on their livelihood at $p \leq 0.01$ level of significance. This implies that the more respondents have favourable

disposition about covid-19 pandemic, the less the effects of the pandemic will be on their livelihood.

4. Conclusions

Majority of respondents engaged in multiple livelihood activities with arable farming, agro-marketing and petty trading being their prominent livelihood activities. Cash at hand, land, skill acquisition centre, possession of mobile phones, and access to markets among others were identified as the major livelihood assets of the respondents. Many of the respondents had indifferent perception towards Covid-19 pandemic. Majority of the respondents reveal that Covid-19 pandemic did not seriously affect their livelihood. It was therefore recommended that rural dwellers should be properly sensitized whenever there is the emergence of any disease outbreak like Covid-19 and the risks associated. Rural dwellers should be encouraged by relevant stakeholders to improve on their livelihood activities by organizing workshops and training for them to overcome the setbacks they might have suffered during the pandemic. They should also be encouraged to diversify into non-farm and off-livelihood activities to tap the potentials inherent in them. It is recommended that future research can focus on potentials of off-farm and non-farm livelihood activities for mitigating emergent challenges among rural households, and the roles of institutions in alleviating effects of pandemic on rural households.

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