Social Protection, Social Inclusion and Sustainable Livelihoods in Kaduna State - Nigeria

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Abstract

The study examines the relationship between among social protection, inclusion and sustainable livelihood in Kaduna State, Nigeria, covering six selected local government areas. The data was obtained using questionnaire. Two stage-least square technique was used for data estimation and analysis. The findings of the 1st stage estimation show that level of benefiting of households on social protection and inclusion, farm work, credit, education, shocks and institutions are significant determinants of sustainable livelihood. The second stage estimates shows that sustainability livelihood, education, sex, transfers, off farm and farm work are significant determinants of household income. It is important to note that the choice of household livelihood strategy and activities affect its sustainability. The laws, institutions, social systems, policies and legal framework for social protection and inclusion are crucial for sustainable livelihood. The study proffered the following suggestions: Implementation of social protection and inclusion programs should be deepened for more household to benefit especially rural households given the high level of poverty in rural communities. Provision of basic services for rural households' access is a sure way for sustainable livelihood. It is desirable transform rural communities to enable rural households diversifying their income sources and sustainability.

Keywords: Social inclusion, Social protection, Sustainable livelihood, 2SLS
***JEL Classification*:** B51, B55, H55, C13

Contribution to/Originality Knowledge:
The study contributed to the body of knowledge in the area of human development through examining the relationship among social protection, inclusion and sustainable livelihood in Kaduna State.

1.0   Introduction

In sub-Saharan Africa (SSA) communities especially in rural areas have difficulty participating fully in economic, social, and political life. Social exclusion of disadvantaged groups on the basis of age, sex, disability, race, ethnicity, origin, religion, socioeconomic and political status require enhance opportunities, access to resources, voice, respect for rights and dignity, better services and livelihood through laws, policies and institutions (Agwa and Juster, 2022). Social protection and inclusion are viewed as development strategies to achieve some of the United Nations prescribed Sustainable Development Goals (SDGs) (particular 1-8) that relate to ending poverty and hunger; inclusive, equitable and quality education; gender equality and empowerment; safe, resilient and sustainable modern energy; and promote just, peaceful and inclusive societies, healthy lives and wellbeing by 2030. The development effort of economies in SSA is geared towards achieving SDGs.

Nigerian economy has great potentials given its enormous human and natural resources, and a population of about 206 million people (World Bank, 2021). However, hunger is one of the major development concerns. The country is ranked 103rd out of 121 countries in the Global Hunger Index (GHI) with a score of 27.3 that signifies hunger is serious. In terms of poverty, 63% of the people (133 million) are multi-dimensionally poor, out of which 65% (86 million) live in Northern part of the country (NBS/UNICEF, 2022). The income measure of poverty shows that 40% (83 million) of the population lives below the International Poverty Line of $1.90 daily, whilst another 25% are vulnerable (World Bank, 2021). The rate of unemployment is about 34% while underemployment is about 28% (NBS, 2022).

Social protection and inclusion intervention programs in Nigeria include protective measures (social assistance), preventive measures (social insurance), promotive measures (productive transfers, subsidies, and work), and transformative measures (social equity measures). Despite these measures, the level of coverage has been low as a result of narrow fiscal space and poor targeting of the beneficiaries thereby, limiting the impact on livelihood and wellbeing. The location and demographic structure of the north part of Nigeria plays significant role in defining the degree of vulnerability, risks and poverty linked to weak resilience and high vulnerability of livelihoods with less economic opportunities.

Sustainable livelihood approaches are based on new ideas on poverty reduction relating to how poor people live their lives and the role of policy framework and governance. Most efforts on poverty reduction by governments and donor agencies have focus more on resource allocation, facilities provision and institutional arrangement rather than engaging more directly with the poor and vulnerable people (Zhang, Liao, Zhang and Hua, 2018; Conway, 2011). Sustainable livelihood is about people and how to improve their livelihood. Guo, Li, Wang and Innes (2022) observed that sustainability of livelihood is achieved when household developed the capacity to make a living by overcoming shocks, stresses and emergencies without having to endanger other people's livelihood in the present or future.

The Nigerian government (Federal and State) overtime designed and are implementing social protection and inclusion plans, policies and programmes that impact on livelihood of the poor and vulnerable group. Some of the interventions include social intervention and empowerment programmes like conditional cash transfer, old age pensions, disability benefits, health insurance scheme, etc. (FGN, 2019).. These are used as instruments to address social and economic deprivations in the society. It is a globally recognized and deliberate strategy for empowerment, capacity building, protection of rights of poor and vulnerable, and to achieve livelihood sustainability (DFID, 2020).

The household livelihood strategy and activities are essential for sustainability. The laws, institutions, social systems, policies and legal framework are instruments that deepen social protection and inclusion for sustainable livelihood. The high level of poverty in Nigeria has raised concern on government ability to protect and include the poor and vulnerable in their programmes and interventions. This study seeks to address this concern by evaluating the programmes and interventions overtime. To achieve this, the study is structured into 5 parts.

Part 1 is introduction. Part 2 is literature review. Part 3 is methodology. Part 4 is empirical analysis. Part 5 is conclusion and recommendations.

2.0   Literature review

2.1   *Conceptual Issues*

Social protection refers to publicity mandated policies and programmes to address shocks, risks, emergencies and vulnerability among the very poor, poor and vulnerable households. It is a deliberate effort made by government and donors agencies to reduce or eliminate their unnecessary hardships and vulnerability to enable them attains a minimum standard of living (Babajanian, 2013). Flaw (2019) added that it is a set of policies which the government can pursue in order to ensure support to the economically active and less active poor by enabling them to participate more productively in economic activities for the overall benefit of the society.

Social inclusion refers to how members of the society are given support and protection to attain good health and well-being. A social inclusive society is a society where all members have a feeling of being valued, differences are respected and basic needs are provided so that members can live in dignity (Kelly, 2019). It is a community where every member is provided with an equal opportunity to benefit from endowed resources to meet their needs and the needs of others. People participate in a society through markets (labour, land and housing), services (electricity, health, education, water), spaces (political, cultural, physical, social), and increase participation in economic, social and political activities in the society that enhance their ability, dignity, and opportunity (George, Eberechukwu, Ndubueze, Camillings, Paul and Onwuka, 2020). Accordingly, inclusive development is seen as a basic right as claimed by the entitlement theory. It is an instrument to promote social cohesion and peace. According to Playcora, Nadvovaik and Bultasore (2018) promoting social inclusion requires removing barriers to people's participation in societal affairs (including certain laws, policies and institutions) as well as addressing discriminatory attitudes, behaviours, and taking active steps to make such participation easier.

Social protection and inclusion (SPI) are set of interventions which aim to address vulnerability, risk, poverty and strengthen resilience (ODI, 2020; Coleman, 1990). According to Aradom, Roel, Hossein and Frank (2020), the World Bank's Social Risk Management Framework described SPI as mainstream policy instrument for economic protection of the poor and vulnerable. It is a policy tool that promotes far-reaching improvements in human well-being through human capital and long-term economic security. The theoretical approaches to SPI include social risk management, right-based, pro-poor economic growth, and needs-based (Hogen-Zanken and Holmes, 2012). The risk-based approach explains how human beings often experience a myriad of social and economic risks during their lifetime. Their experiences vary and coping with social risks can be challenging for those experiencing multidimensional poverty and vulnerabilities.

Livelihood refers to capabilities, assets (stores, resources, claims and access) and activities required for enhance living standard. Livelihood is sustainable when it can cope with and recover from stress and shocks, maintain or enhance its capabilities and assets, and provide sustainable livelihood opportunities for the next generation; and contributes net benefits to other livelihoods in the short term and long term (Hu, Wen and Fan, 2020; Olivier, 2008). Livelihood strategies and outcomes are not only dependent on access to capital assets or constrained by the vulnerability (Scoones, 1998); but are also transformed by the environment with adequate structures and processes (Yuliati and Isasket, 2018). Processes embrace the laws, regulations, policies, operational arrangements, agreements, societal norms, and practices that, in turn, determine the ways in which structures operate (Farrington, Ramasut and Walker, 2002; DFID, 1999).

Different approaches are used to explain the nexus among social protection, inclusion and sustainable livelihoods. For instance, the rights-based approach recognized citizens as right holders and states as duty bearers and central elements to SPI (Brunori and O'Reilly, 2010). The development of social rights such as equality, inclusion and non-discrimination influences the contributions to, and arguments for, rights-based approach which tend to advance the course of designing and implementing social protection programmes and policies on the basis of social and economic rights. The social contract perspective argues in support of rights-based approach to social protection through the pursuit of social justice and promotion of social citizenship (Chopra, 2011).

The sustainable livelihood framework enhances livelihood opportunities and interrelationship. A central notion is that various households have different access to livelihood assets, which the sustainable livelihood aims to expand (Ashley and Carney, 1999). The livelihood assets that the poor make choices by trade-offs comprise of human capital (health, nutrition, education, knowledge and skills, capacity to work); social capital (networks and connections, relations of trust and mutual understanding and support, formal and informal groups); natural capital (land and produce, water and aquatic resources, trees and forest products, wildlife, wild foods and ibers, biodiversity, environmental services); physical capital (transport, roads, buildings, water supply and sanitation, energy, communications); financial capital (savings, credit and debt), and remittances, pensions, and wages (Chambers and Conway, 1992).

Olivier (2008) asserts that livelihood comprises the capabilities, assets, and activities required for a means of living. It is deemed sustainable when it can cope with and recover from stresses and shocks and maintain or enhance its capabilities, assets, and activities both now and in the future without undermining the natural resource base. It is based on based on the fact that poor and vulnerable live their lives infleunced by institutions and policies which connects people and environment. Therefore, sustainable livelihoods approach (SLA) deepens understanding of the livelihoods of the poor, constraning factors, livelihood opportunities and interrelationship.

2.2   Theoretical Framework

Sen's capability approach (Sen, 1999) focuses directly on the quality of life that individuals are able to achieve which is analysed in terms of the core concepts of 'functionings' and 'capability'. Functionings are states of 'being and doing' such as being employed, healthy or having shelter. Capability is seen as set of valuable functionings that a person has effective access to as free agency. A person's capability represents the effective freedom of an individual to choose between different functioning combinations that is , different kinds of life that a person has reason to value like literacy, health, economic or political freedom. Burger and Christen (2011) emphasised that institutions and instrumental perspective of capability include political freedom, economic facilities, social opportunities, transparency guarantees, and protective securities which are seen as rights and opportunities that advance general capability of a person which public policy can foster for quality of life, well-being and human development.

Nussbaum developed the capability theory further as a systematic, extensive, and influential capability theory of justice based on human dignity and threshold as against Sen's emphasis on freedom. The threshold is 'sufficientarian' principle that specifies the minimum requirements of justice everyone is entitled to and access to these capabilities is required by human dignity (Nussbaum, 2011). Lienert and Burger (2020) developed a framework that incorporates four levels of social protection and inclusion provision as protective, preventative, promotive, and transformative by drawing largely from risk-based, right-based, pro-poor and capability approaches.

Thus, the capabilities and functionings are relevant elements to evaluative space for wellbeing, that is, as ends; capital assets; the prevailing social, economic, and micro and macro-level environment; choices and livelihood strategies; and feedback loops the present intergenerational concerns (Bebbington, 1999). The relations show that capital assets are direct input factors for one's capability space; macro-conditions build the broader opportunity space, and micro-conditions impact on choices and livelihood strategies as depicted in Fig. 1.
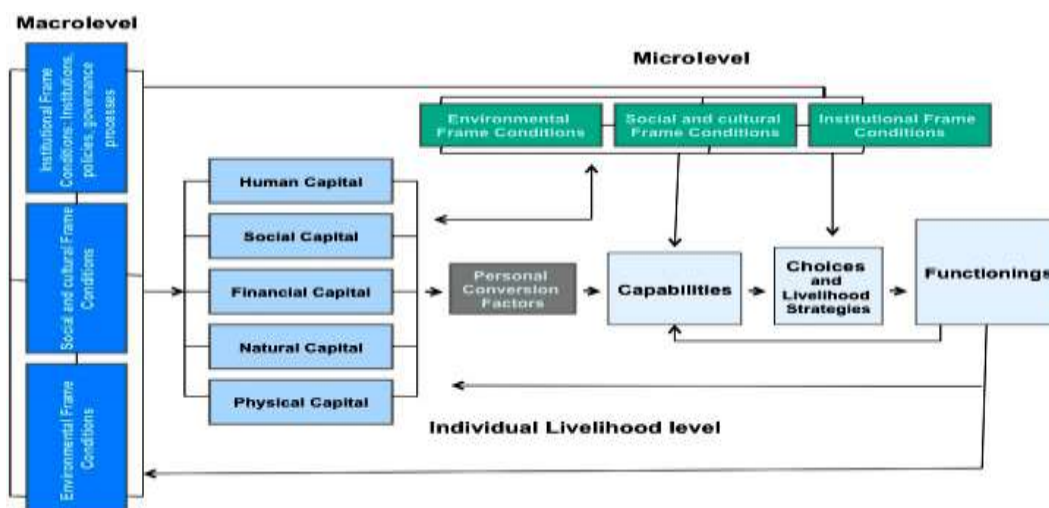
Source: Conway, 2011

Fig. 1:

2.3   *Empirical Review*

There are studies on the nexus between social protection, social inclusion and sustainable livelihoods employing mix-methods and across regions. For instance in more recent studies, Mesfin, Mulugeta and Woldegiorgis (2022) investigated the nexus among inequality, social protection policy, and inclusion: pertinent. The study used panel data approach in 34 African countries. The fixed effects regression indicates that income inequality is a negative driver while social redistribution policies are positive drivers of inclusive development in the long run. The variables of labour force participation rate, freedom score, life expectancy at birth, enrolment rate in secondary school and share of employment in industry show a positive correlation with inclusion.

Similarly, Guo, Li, Wang and Innes (2022) examined the links between livelihood sustainability and environmental protection in China. They found that the links are generally weak, with low levels of both livelihood sustainability and environmental protection. Household-level distribution shows significant differences in the strengths of the links among different demographic groups, and regression results show that higher levels of average education, loan amount, and asset holdings, as well as lower proportions of the elderly and non-agricultural activities were associated with stronger links. Agwa and Juster (2022) examined the impact of social protection fund approaches on sustainable livelihoods in Kisumu County, Kenya. The findings show that provisional social protection fund had a significant impact on sustainable livelihoods. The study concluded that there are higher expectations related to dependency syndrome among those who would otherwise be able to wean off the programme.

Furthermore, Lienert and Burger (2020) analysed the effect of biological resources on livelihoods and income in Nepal. The capability and sustainable livelihood approaches were used to examine sustainability livelihood framework. The study found that the creation of capabilities is strongly dependent on the set of capital assets available (form of natural capital). Developing livelihood strategies increase people's opportunity spaces and enable them to cope with shocks and vulnerability. Aradom, Roel, Hossein and Frank (2020) examined the links between social status and income of rural households in Tigray region state of Ethiopia by employing two-stage least-squares (2SLS) estimation technique. Latent class analysis model was employed to identify the number of classes for the variable of social status. The results indicated that livelihood income is significantly affected by households' social status. Household heads' access to off-farm work, size of owned land, exposure to multimedia, livestock ownership and spatial proximity positive and significantly impact on livelihood income.

Aiyede, Haruna, Ogunkola and Best (2015) examined the political economy of social protection in Nigeria. The findings revealed that there is no overarching policy on social protection in Nigeria currently. There are pilot programmes led by the federal government and other programmes implemented in an ad hoc manner at state level. They concluded that an uptake in social protection may occur only if the political leadership is convinced that it is sustainable and would enhance their political fortune. Babajanian (2013) conducted a study

on social protection and its contribution to social inclusion. He found that social protection contributes to tackling social exclusion and promoting social inclusion in terms of well-being including food consumption, access to health and education.

Overall the findings of the studies suggest that there is a nexus among social protection, inclusion and sustainable livelihood. However, the degree of relationship varies across countries or regions. Thus, the need for this study as more states in Nigeria are beginning to implement social protection and inclusion policies with a view to enhance livelihoods especially in rural communities.

3.0   Methodology

3.1   *Research Design*

The study adopts a survey-based data collection approach. Primary data was collected using questionnaire as the main instrument. The ordinary least square (OLS) method is used for data analysis. Specifically, two-stage-least-square (2SLS) method is adopted for model estimation. The study was conducted in six (6) local government areas (LGAs) of Kaduna State, Nigeria. The selected LGAs include Giwa LGA, Kudan LGA, Kubau LGA, Lere LGA, Sabo LGA and Zaria LGA.

3.2   *Data and Sources*

The data for the study were collected from both primary and secondary sources. The primary data were collected using household-level survey questionnaire. It basically solicited data on demographic, socioeconomic characteristics and the income generating activities of the sample households. Effort was made to measure livelihood income sustainability based on some indicators obtained through questionnaire. Factors such as household heads' benefiting from social protection and inclusion programs, access to health and education, transfers, trainings, social networks, etc. were chosen as indicators. Based on these indicators, a latent class analysis was carried out to determine the number of sustainable livelihood classes and to assign households to these latent classes.

3.3   *Sampling Techniques and Sample Size*

In selecting the rural communities cluster random sampling technique and purposive sampling were used. Accordingly, two clusters (comprising four randomly drawn communities each, were drawn purposively. To select households from each community within a given cluster, the Probability Proportionate to Size (PPS) technique was used. In selecting the sample household heads, emphasis was also given to their level of benefiting in social protection and inclusion programs. This strategy provides us with an opportunity to generate the required variables in a manner that is mainly related to benefiting in social protection and inclusion and model its effect on livelihood income sustainability from a spatial perspective.

To determine the number of respondents to administer questionnaire, Yamane formula was used It is stated thus

$$n = \frac{N}{1 + N\left(e\right)^2}$$

Where,

n= sample size

N = total number of beneficiaries

e= Margin error (5% assumed)

A total of 413 questionnaires were administered in selected households in 24 selected communities.

3.4   Model Specification

The income-sustainable livelihood theoretical framework is used for model formulation. The model is specified in line with 2SLS approach accompanied by instrumental variable, which is an extension of OLS method. In obtaining the 2SLS estimates, the endogenous variable in the equation to be estimated on all exogenous variables, including the instrumental variable regressed in the simultaneous equation model using the OLS estimator.

The estimation strategy is to estimate a two-equation system consisting of equations for income and sustainable livelihood following the works of Agwa and Juster (2022); and Aradom, Roel, Hossein and Frank (2020), the model is specified as follows:

$$
\begin{aligned}
Incom = \beta_0 &+ \beta_1 suslivh + \beta_2 health + \beta_3 educ \\
&+ \beta_4 sex + \beta_5 transf + \beta_6 lansiz + \beta_7 offawk + \beta_8 credit \\
&+ \beta_9 farmwk + \beta_{10} socialnk + \beta_{11} shocks + \beta_{12} institn + \varepsilon_1
\end{aligned}
\tag{1}
$$

$$
\begin{aligned}
Suslivh = \alpha_0 &+ \alpha_1 \deg ofben + \alpha_2 health + \alpha_3 edu \\
&+ \alpha_4 sex + \alpha_5 transf + \alpha_6 lansiz + \alpha_7 offawk + \alpha_8 credit \\
&+ \alpha_9 farmwk + \alpha_{10} socialnwk + \alpha_{11} shocks + \alpha_{12} institn + \varepsilon_2
\end{aligned}
\tag{2}
$$

where the endogenous variables *Incom* and *Suslivh* denote the household's livelihood income and sustainable livelihood respectively; the *β's* and *α*'s are the parameters to be estimated, and ε_1 and ε_2 are the stochastic disturbances term for the endogenous variables. The variable of household head's degree of benefits in social protection and inclusion programs is chosen as an instrumental variable.

3.5   Variables and Measurement

The variables included in the model are defined and measurement provided. The nature of the relationship is also provided in *Table 3.1.*

Table 1: Variables and measurement

Variables	Measurement
Livelihood income	Household expenditure in ₦ per annum or year (enhanced by capabilities assets like farm, house, bicycle, etc.)
Sustainable livelihood	Capabilities assets that help household to cope with and recover from shocks, stresses and emergencies like diseases, sickness or death, drought, inflation, etc.
Sex of household	Gender of household (male of female)
Health	Access to healthcare in km (< 1 km; 1-2km; > 2km)
Education	Access to basic education (primary and secondary) in km (< 1 km; 1-2km; > 2km)
Transfers	In kind or cash transfer by family, state and non-state actors, in ₦ per month
Off-farm work	Income generated from other activities that are not farm related (providing services and selling of goods) in ₦ per month.
Land size	The size of land owned by house hold in acres.
Social network	Number of membership of groups or associations that comes with social benefit
Farm work	Income generated from farm activities (farming or livestock) in ₦ per month
Shocks	Hazards or stresses that households are subjected to (death, drought, diseases, death, etc.)
Credit	Access to credit facilities from financial institutions – total amount in ₦ per year
Institutions	Policies, laws, processes, people, environment

3.6   Data Analysis

Moreover, to empirically test the relation between social protection and inclusion, and sustainable livelihood, we proposed applying two-stage least-squares (2SLS) estimation to household-level data from the selected communities (Asteriou and Hall, 2011). In contrast to ordinary least square (OLS) method, the 2SLS estimation approach enables us to capture the

measurement error by introducing the so-called instrumental variable (IV). The analysis was carried out in two steps. Statistical analyses were performed using STATA version 13. Latent class analysis (LCA) was done using Latent Gold 5.0 software (Goodman, 2002). The latent class model assumes that the observations can be divided into a finite number of groups, or classes, according to some combination of characteristics (Goodman, 2002).

4.0   Empirical Analysis

4.1   *Latent Class Analysis*

The study conducts latent class modelling to determine the number of classes and assign cases to the latent variable sustainable livelihood. Items such as household heads' degree of benefit, access to health and education, sex, transfers, land size, off farm and farm work, credit, shocks, social network and institutions were chosen as indicators for latent class analysis (LCA). Table 1 summarizes the results for the 1, 2 and 3 class solutions. These different solutions are compared based on statistical information criteria like the Bayesian information criteria (BIC) and Akaike information criteria (AIC). Both the BIC and AIC penalize the log-likelihood function differently. Whereas the AIC adds the penalty for the number of parameters (Burnham and Anderson, 2004), the BIC includes this penalty for the number of parameters as well as the number of observations (Kass and Wasseman, 1995).

Table 2: Summary of the Latent Class Model

Models	Number of class	BIC	AIC	Npar
Models 1	Class 1	2873.3021	2549.4274	16
Models 2	Class 2	2590.8526	2375.2273	38
Models 3	Class 3	3041.7411	2749.3882	54

Source: Authors' computation; Note: BIC - Bayesian Information Criterion; AIC - Akaike Information Criterion; Npar – Number of parameters.

When comparing model fits using information criteria, the decision guide is to select the model with the lowest AIC and BIC values (Burnham and Anderson, 2004). Accordingly, the 2 class solution was selected. More specifically, the results show that compared to other solutions, the 2 class solution seems more parsimonious and justifiable. This provides a reasonable statistical platform for the identification of proper classes for the latent variable.

4.2   *Descriptive Analysis*

Table 4.2 presents the measurement attributes and summary of the descriptive statistics of the selected key variables. The average household's income is about ₦16,976.78 per year from all income sources. The mean transfer to households per year is ₦4675.903. The mean size of farm land owned by households is 0.53 hectares, which is smaller than the regional average of 0.84 hectares. The mean distance to access health and education in the localities is 1.13 km and 0.96 km respectively. This shows that access to basic education and health still covers some distance which can affect access and completion of education. The communities on the average travel almost a kilometre to access to access basic health care. These are not favourable indices for sustainable livelihood especially access to basic services.

Table 3: Summary of Descriptive Statistics

Variables	Measurements attributes	Symbols	Valid No	Mean	SD	Min	Max
Dependent variable: Livelihood income	-Log of total household expenditure in ₦ per year -Total household expenditure in ₦ per year	Income	413 413	11.21 16976.78	1.05 7670.395	6.82 3004	11.67 5200
Endogenous variables: Sustainable livelihood	1 – Low; 2 – Middle; 3 – High	Suslivh	413	-	-	1	3
Instrumental variables: Degree of benefiting in social protection and inclusion programs	1 – None; 2 – Somewhat benefiting; 3 – Benefiting	Degofben	413	-	-	1	3
Explanatory variables							
Sex of HH head	1- Male; 2 – Female	Sex	413	-	-	1	2
Health	1-<1km; 2- 1-2km; 3-> 2km	Health	413	1.13	0.53	1	3
Education	1-<1km; 2- 1-2km; 3-> 2km	Edu	413	0.96	0.27	1	3
Transfers	1 - Yes; 0 - No	Transf	413	4675.903	2114.000	0	1
Off farm work	1 if Yes; 0 if No	Offawk	413	-	-	0	1
Land size	Total land size measured in acres	Lansiz	413	0.53	0.31	0.105	2
Social network	1 – Yes; 0 – No	Socialnwk	413	-	-	0	1
Farm work	1 – Yes; 0 – No	Farmwk	413	-	-	0	1
Shocks	1- Yes; 0 – No	Shocks	413	-	-	0	1
Credit	1 if Yes; 0 if No	Credit	413	-	-	0	1
Institutions	1 – Not available, 2 – Available but not effective; 3 – Effective; 4 – Very effective	Institn	413	-	-	1	4

Source: Authors' computation

4.3   Test of Endogeneity

To determine the use of an instrumental variable, a test for endogeneity was done using Durbin–Wu–Hausman test. The test checks whether the regressor is an exogenous or endogenous variable. In other words, this test compares the OLS and IV estimates to check for significant differences. If there are significant differences, then the regressor is endogenous. The results in Table 4.3 revealed that there is a problem of endogeneity because the results show significant differences. Hence the use of an instrumental variable in our analysis is desirable.

Table 4: Test of Endogeneity

Tests of endogeneity		
H₀: Variables are endogenous		
Durbin (score) chi2(1)	*Wu-Hausman F(1249)*	*P-value*
15.63	*13.81*	*0.0000*

Source: Authors' computation

4.4   Test of Validity of Instrument

The instrument is weak if the partial F-statistic testing the significance of the coefficient of the instrument is less than 10. A low correlation between the instrument and the endogenous variable would indicate a weak instrument. Our findings of the F-statistic result in Table 4.4 shows that it is higher than 10, indicating that the chosen instrumental variable is strongly correlated with the endogenous variable.

Table 5: Test of Validity of Instruments

			First stage Regression Summary Statistics		
Variable	*R2*	*Adjusted R2*	*Partial R2*	*Robust F(1250)*	*Prob > F*
Social status	*0.16*	*0.09*	*0.10*	*15.10*	*0.000*
Minimum eigen value statistic – 26.07			*Endogenous regressors: 1*		
H₀: Instruments are weak			*Excluded instruments: 1*		
			5%	*10%*	*20%*	*30%*
2SLS relative bias			*Not available*			
			10%	*15%*	*20%*	*25%*
2SLS size of normal 5% Wald test			*17.42*	*7.85*	*6.59*	*5.66*
LIML size of normal 5% Wald test			*17.42*	*7.85*	*6.59*	*5.66*

Source: Authors' computation

4.5 Model Estimation

The results of the first stage estimation in Table 4.5 show the relevance of the instrument variable, i.e., degree of benefiting from social protection and inclusion. The instrument variable is relevant because it is positive and statistically significant at a 5% probability level. Furthermore, farm work, credit, education are positive and significant factors of sustainable livelihood, while shocks and institutions have negative influence on sustainable livelihood. The estimates of the second stage (households' income) model show that sustainability livelihood, education, sex, transfers, off farm and farm work are positive and statistically significant determinants of household income at different level of significance.

Table 6: 2SLS Estimates of Regression Coefficients

Variables	Estimation	
	Sustainable livelihood	*Income*
	1st stage 2SLS estimates	*2nd stage 2SLS estimates*
Constant	1.781	2.520**
	(1.05)	(10.05)
Suslivh		0.618*
		(2.59)
Health	0.007	0.266
	(0.63)	(1.30)
Edu	0.013***	0.201**
	(4.25)	(2.38)
Sex	0.005	0.016**
	(1.69)	(2.48)
Transf	-0.105	0.014***
	(-1.02)	(2.68)
Lansiz	0.002	-0.053
	(0.14)	(-0.71)
Offawk	0.026	0.166**
	(0.60)	(11.39)
Credit	0.001**	0.057**
	(3.13)	(2.43)

Farmwk	*0.030***	*0.019****
	(4.28)	*(2.76)*
Socialnwk	*0.008*	*0.019*
	(0.04)	*(0.52)*
Shocks	*-0.410***	*-0.027*
	(-2.95)	*(-0.98)*
Institn	*-0.023****	*0.120*
	(-1.01)	*(0.72)*
Instrument		
Degree of benefiting in social protection and inclusion	*0.211***	
	(5.11)	
R^2	*0.51*	*0.69*
F-statistic	*10.47*	
Wald chi2		*397.80*
Observations	*413*	

Note: t-values in bracket in 1st stage and Z-ratio in the 2nd stage; p-value where ***significant at 1% probability level; **significant at 5% probability level; *significant at 10% probability level.

Household livelihood strategy is the choice of livelihood activities carried out by households in meeting their needs. The attainment' strategy in fulfilling the shortfall of the household needs is dominated by the strategy of utilizing the available social protection and inclusion programs, transfers received and productive engagement that provide for sustainable livelihood of households. From the study on significant variables, the findings corroborate that rural households' livelihood sustainability, instrumented by degree of benefiting from social protection and inclusion significantly and positively impact on sustainable livelihood. This implies that more access to basic services and assets households have significantly makes sustainable livelihood more achievable.

5.0   Conclusions and Recommendations

The study examines the nexus among social protection, inclusion and sustainable livelihood in Kaduna State, Nigeria, covering six selected local government areas. The data was obtained through survey questionnaire. Two-stage-least square was adopted as the estimation technique. The findings of the 1st stage estimation show that level of benefiting of households on social protection and inclusion influence their livelihood sustainability. Furthermore, farm work, credit, education, shocks and institutions are other important determinants. The second stage estimates shows that sustainability livelihood, education, sex, transfers, off farm and

farm work are important determinants of household income. It is important to note that the choice of household livelihood strategy and activities affect its sustainability. It is vital to evaluate how government programs on access to basic services like education, health care, skills acquisition; cash transfers and assistance; access to credit; acquiring assets; institutional arrangements; and addressing shocks is influencing household sustainable livelihood. The laws, institutions, social systems, policies and legal framework for social protection and inclusion are crucial for sustainable livelihood.

The following suggestions are proffered based on findings of the study:

i. The implementation of social protection and inclusion programs should be deepened for more household to benefit especially rural households given the high level of poverty in rural communities.
ii. It is desirable to provide basic services (available and accessible) to rural households for sustainable livelihood.
iii. A deliberate policy and program required to transform rural communities for more households to transit from farm work to off or non-farm work as a way of diversifying income sources thereby making it more sustainable.

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