Journal of Agripreneurship and Sustainable Development (JASD)
www.jasd.daee.atbu.edu.ng; Volume 5, Number 2, 2022
ISSN (Print): 2651-6144; ISSN (Online): 2651-6365

EVALUATION OF LIVELIHOOD STATUS OF *FADAMA* III TOMATO FARMERS IN KANO STATE, NIGERIA

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ABSTRACT
The study evaluates the livelihood status and its socio-economic determinants among *fadama* III Tomato Farmers in Kano State, Nigeria. Multi-stage sampling procedure were used for the study and primary data were collected from a sample of 312 smallholder tomato farmers using structured questionnaire. The data were analyzed using descriptive such as frequency and percentage, minimum, mean, maximum and standard deviation and inferential statistics such as Livelihood Security Index (LSI) and Propensity Score Matching (PSM). Findings of the study revealed that Result of the study shows that tomato production is dominated among young active (41 years), male (99.4%) people who were married (89.4%) and attended more of western formal education (74.7%). Livelihood status index result indicated that RPCs technologies users had higher livelihood status (0.40) than the livelihood status (0.38) obtained by TWBs technologies users. The high index score obtained could be attributed to better access to empowerment training, availability of food, access and control to economic resources together with availability and access to health care and educational facility and services in the study area. Socio-economic factors such as education, access to credit, farm size, household size, experience and marriage were observed to influence the livelihood condition of the farmers in the study area. The study recommended that rural development policies need to promote awareness on the RPCs technology through relatively experienced farmers that have access to credit with relatively large farm holding to reduce post-harvest losses and subsequently improved the livelihood of *Fadama* III tomato farmers.

Keywords: *Fadama* III, Technology, Livelihood, Tomato, Farmers.

INTRODUCTION
Agricultural practice provides the basic needs of life in terms of food, shelter and clothing, which results in better living standards in Nigeria (Elemasho *et al.*, 2017). This vital sector is mainly characterized with smallholder farmers whose average holdings is between 0.1 to 3.0 hectares (Mgbenka *et al*., 2016), depend on the use of simple tools and primitive ideas which result in low productivity and low income. However, for agriculture to remain the back bone of Nigerian economy, attention should be given to implementation of modern technologies in the processing, storage and marketing of food crops (Elemasho *et al.*, 2017).

Tomato (*Lycopersicon esculentum*) as cash as well as commercial crop worldwide and processed into industrial products such as tomato sauce and tomato paste. Its nutritional value in terms of vitamins A, B and C has made the crop one of the most popular items on menus (Masunga, 2014). Moreover, Food and Agriculture Organization (FAO, 2012) emphasized that world production of tomato was 126 million metric tons with China as the largest producer, producing up to 33.2 million metric tons, followed by USA and Turkey with 11.5 million and 9.9 million metric tons, respectively. In Africa, Egypt was the largest producer with 7.6 million

metric tons, followed by Nigeria, Morocco and Tunisia with production outputs of 1.1 million, 1 million and 898,000 metric tons respectively (FAO, 2012).

However, empirical study in Sub-Saharan Africa shows that 40-50% of tomato produced in Nigeria is lost due to poor handling, storage, processing and preservation technologies (Sahel Research, 2015) and has significant effect to the livelihoods of smallholder tomato farmers in specific and the overall national food security in general. A key premise of the current study is that a complex relationship exists among tomato farmers, organizations and Agricultural technologies in the process of earning livelihood. They argued that technical change is nowadays largely accepted to be an engine of economic growth, researchers have tried to include it explicitly in the economic growth models, either as an exogenous or endogenous factor of influence (Grubb *et al*., 2002). Endogenous or exogenous nature of the technological change refers to its source: endogenous change is internal to the national economy, being created by domestic private or public enterprise, while exogenous change is external, originating from foreign sources (Grubb *et al*., 2002).

On the other hand, livelihood security, according to Frankenberger (1998) is the extent of 'adequate and sustainable access to income and resources to meet basic needs (including adequate access to food, potable water, health facilities, educational opportunities, housing, time for community participation and social integration)'. Livelihoods can be derived from a range of on-farm and off-farm activities, which together provide a variety of procurement strategies for food and cash. Thus, each household can have several possible sources of entitlement, which constitute its livelihood. These entitlements are based on the household's endowments and its position in the legal, political and social fabric of society. The risk of livelihood failure determines the level of vulnerability of a household to income, food, health and nutritional insecurity. Subsistence producers and small farm wage laborers in the rural areas of low-income countries constitute over two thirds of the global poor and food insecure populations (Gautam & Andersen, 2016). Indices for economic and social status are composite indicators of the economic and social well-being at the community, state, national and international levels. These social indicators are used to monitor the social system and help in the identification of problem areas that need policy planning and require intervention to alter the course of social change (Frankenberger *et al.*, 1998). There are several indices developed for measuring economic and social status of people (United Nations Development Program [UNDP], 1998; Sharpe, 1999; Dierner, 1995). The development of livelihood security index is one of the most important social indicators for assessing the quality of life, coupled with meeting the basic needs of human beings. The basic aim of using this index is to make cross-locational welfare comparison among *Fadama* III tomato farmers.

Fadama III additional financing project is a World Bank assisted project promoting increase in income among rural water users in Nigeria. The project identified six States with comparative advantages to promote production of Rice, Sorghum, Cassava and Tomato within the Staple Crop Processing Zones (SCPZ). Each State has been mandated to promote production along the value chains. The project aimed at sustainable increase of tomato production through provision of advisory services and agricultural inputs support as well as promotion of improved agricultural practices including RPCs technology particularly for improving the wellbeing of the smallholder tomato farmers. Several studies have analyzed postharvest loss and its technological options to manage such losses particularly in the context of tomato traders (Kitinoja, 2013: Rapusas and Rolle, 2009). However, there is a remains of knowledge gap on the actual livelihood condition of the adopters of the technology.

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MATERIALS AND METHODS

The Study Area

The study was conducted in Kano State, Nigeria and is divided into 44 Local Government Areas. According to NPC (2006), the State had a population of 9.4 million out of which, 4,947,952 males and 4,453,336 females as at 2006 census. It has an annual growth rate of 2.9% which gives a projected figure of 12,985,526.74 populations in the year 2019. Kano State Agricultural and Rural Development Authority (KNARDA) is the technical and management unit responsible for Agricultural extension service of the state Government. KNARDA is divided into three Agricultural zones namely, Zone I, Zone II and Zone III with their respective Local Governments Areas (LGAs) as follows: Zone I has 15 number of LGAs with Headquarter at Rano LGA. Similarly, Zone II has 14 has number LGAs with Headquarter at Danbatta LGA. Zone III has 16 number of LGAs with head quarter at Gaya LGA (KNARDA, 1998). Fadama III Project in Kano State covers all the three zones under KNARDA with a coordination office in KNARDA headquarters (National *Fadama* Development Project [NFDP], 2017).

Agriculture is the primary source of livelihood for the smallholder farmers in the study area, which comprises of cultivation of crops such as Tomato, Sorghum, Millet, Maize, Cowpea, Soybean, Rice and Groundnut. Cattle, Sheep and Goat, Poultry and Fish and artisanal fishing are the major form of livestock reared among the farmers in the study area. Fresh tomato drying and other form of fruit vegetable, marketing of agricultural product, farm labour supply to other farms, rice processing, maize flour processing, groundnut oil processing, groundnut cake production forms the major prevailing off-farm activities in the study area. Non-farm activities such as Blacksmithing, Carpentry, transportation of agricultural produce, Weaving, Rope making, Tricycle driving, Vulcanizing, bricks laying, non-farm business activities, remittance, western and Islamic school teaching supplement the livelihood of smallholder tomato farmers in the study area.

Sampling Procedure

Multi-stage sampling procedure was used in the study. In the first stage, six Local Government Areas were purposively selected, two (2) each from the three Agricultural zones under Kano State Agricultural and Rural Development Authority (KNARDA). The LGAs were selected based on participation in Fadama III project. The selected LGAs were Garun Mallam, Kura, Bagwai, Makoda, Albasu and Warawa. Stage two involved purposive selection of two villages each from the selected LGAs based on the concentration of the project beneficiaries. The selected villages (production clusters) are Dorawar sallau and Yadakwari from Garun Mallam LGA; Butalawa and Kura from Kura LGA; Bagwai and Gurdo from Bagwai LGA;Satame, and Jigawa satame from Makoda LGA; Gagarame and Panda from Albasu LGA; Garun dau and Katarkawa from Warawa LGA. However, sample frame comprising 1,650 smallholder tomato producer's beneficiaries was collected from Fadama III project with the help of *Fadama* III Tomato value chain community facilitators. The third stage involved random selection of 312 tomato farmers using Raosoft sample size calculator at 5% margin error and 95% confidence level (Raosoft, 2019). The calculated sample was proportionately distributed according to the estimated number of tomato farmers in each of the selected production clusters. The estimated sample is given in Table 1.

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Table1: Summary of Sampling Procedure for *Fadama* III Tomato Farmers

Agricultural Zones	Selected LGA's	Selected Villages (Production clusters)	Sampling Frame	Sample Size
Rano Zone	Garum Mallam	Dorawar Sallau	137	26
		Yadakwari	110	21
	Kura	Butalawa	123	23
		Kura	147	28
Danbatta Zone	Bagwai	Bagwai	134	25
		Gurdo	159	30
	Makoda	Satame	138	26
		Jigawa Satame	145	27
Gaya Zone	Albasu	Gagarame	139	26
		Panda	145	27
	Warawa	Garun dau	138	26
		Katarkawa	135	26
Total			**1650**	**312**

Source: Field survey, 2019.

Method of Data Collection

Primary data were used as source of information for this study. The data were collected from a sample of tomato farmers, extension workers, using questionnaire. The questionnaire-based interview was used to collect data related to socio- economic and institutional variables of smallholder tomato farmers such as age, sex, education level, marital status, farm size, the size of the household, income, access to credit and extension, post-harvest storage technologies in use among *Fadama* III projects smallholder tomato farmers, livelihood status of RPCs and TWBS technologies adopters.

Analytical Tools

The analytical tools used in the study include descriptive statistics and Propensity Score-Matching (PSM) Model were used to achieve the objective of the study. **Descriptive statistics**

Descriptive statistics is a scientific method used for analyzing, summarizing and presenting collected data. Descriptive statistics such as frequency and percentage table were used for the present study.

Following the work of Hahn *et al.* (2009), Rahman and Akter (2009) and Usman (2013), the household livelihood security index (HLSI) was constructed to estimate the livelihood status of cowpea farmers in Kano State. In this study eleven (11) livelihood status indicators were identified and broadly grouped under five (5) status domains as follows economic status, health status, educational status, food status and empowerment status (Lindenberg, 2002). The computation of each indicator value was shown as follows:

$$Z_j = \frac{X_j - Min_j}{Max_j - Min_j} \quad \ldots(1)$$

where;

Z_j = standardized subcomponent J

X_j = unstandardized subcomponents (X_1, X_2, X_3 , …… X_{22})

Economic indicators are as follows:

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X_1 = Annual income of tomato farmers
X_2 = Value of farm land owned by tomato farmers
X_3 = Value of livestock owned by tomato farmers
X_4 = Number of household facilities owned by tomato farmers (e.g television, radio, refrigerator, handset etc.)
X_5 = Accessibility of tomato farmers to portable water, scored as
1 = Accessible 0 = Not accessible
X_6 = Accessibility of tomato farmers to electricity, scored as
X_7 = Types of accommodation, scored as
1 = mud house with thatched roof
2 = mud house with zinc
3 = concrete house with zinc,
4 = concrete house with aluminum roof
Health status indicators are as follows:
X_8 = Affordability of tomato farmers to healthcare services, scored as
1 = Affordable 0 = Not affordable
Educational status indicators are as follows:
X_9 = Number of children sponsored to school (primary, secondary and tertiary levels)
X_{10} = highest educational qualification (Literacy)
Food status indicators are as follows:
X_{11} = Number of times the tomato farmer is able to feed his family per day
X_{12} = Value of crop stock's own by tomato farmers
Empowerment status indicators area:
X_{13} = Number of times household participated in community activities
X_{14} = Access to extension services (yes = 1, no = 0)
Min_j = minimum value of the indicator obtained from the study area
Max_j = maximum value of the indicator obtained from the study area

Once each indicator representing major components is standardized, then the relevant household livelihood status index for each of the major component was constructed by averaging the standardized indicators as follows:

$$M_i = \frac{\sum_{i=1}^{J} Z_j}{J} \quad \ldots(2)$$

where;
M_i = major component livelihood status index of the farmer
J = number of subcomponents used to construct the index

Once each LS index for each major component is constructed, then the composite overall livelihood status index for the household was constructed using the following formula as follows:

$$LS_i = \frac{\sum_{i=1}^{n} W_i M_i}{\sum_{i=1}^{n} W_i} \quad \ldots(3)$$

where;
LS_i = overall livelihood status index of the farmer
W_i = are the weights determined by the number of indicators used to construct each LS index.

The sum of the weight of economic status, food status, health status, educational status and empowerment status was equal to 1.00.
Thus;
W_1 = Economic status = 0.2
W_2 = Food status = 0.2

W_3 = Health status = 0.2
W_4 = Education status = 0.2
W_5 = Empowerment status = 0.2
Total weight = 1.0

RESULTS AND DISCUSSION

Socio-Economic Characteristics of the Smallholder Tomato Farmers

The result of Table 2 revealed that 43% of the tomato farmers were between 18–29-year-old followed by 30.1% of the tomato farmers which were between 42-53 years old, then 15.6% of the farmers interview were between 18-29 years old, another group of 8.9% of the farmers interview were between 54-65 years old and 1.2% of the farmers interview were between 56 and above years. The tomato farmers had a mean age of 41 years with minimum and maximum age of 18 and 70 years, respectively, and standard deviation of 11. This indicated that majority of tomato farmers were young within their active age group and are believed to be flexible in decision making towards using RPCs technology in the study area. The findings in respect to age of tomato farmers showed possibility of sustainable tomato production in the area. This agreed with Jabil and Abdu (2012) in North Central Zones of Plateau State, Nigeria who reported that young farmers are willing to adopt new technology like RBCs than the older ones and they are not aversive to risk

The result of Table 2 also showed that 45.2% of the tomato farmers interviewed had 10-17 number of persons per household, 40.7% of the tomato farmers had 2-9 number persons per household, 12.1% of the tomato farmers had 18-25 number of persons per household whereas 1.2% and 0.6% of the tomato farmers interview had 26-33 number persons and 34≥ number persons per household respectively. The tomato farmers had a mean household size of 11 members with minimum of 2 members and maximum of 34 members and standard error of 0.33. In most part of Nigeria, this is not unconnected with availability of labour to enable them participate in commercial tomato production. This could likely influence tomato farmer's decision to the use of RPCs technology to reduce level of tomato fruit losses thereby increasing farmer's profit. This is consistent with the findings of Elemasho *et al*., (2017) who reported that family labour availability for the postharvest activities enhance income and could be used for purchasing and adopting new packages like RCPs technologies.

Table 2 Result of the study revealed that majority (75.6%) of the tomato farmers earned between ₦5,000-₦1,104,000 per annum which was followed by 14.7% of the tomato farmers that earned between ₦1,104,001-₦2,203,001 per annum, then 6.1% of the tomato farmers earned ₦2,203,002-₦3,302,002 per annum, only 1.5% of the tomato farmers earned ₦4,401,004≥ per annum whereas 0.9% of the tomato farmers between ₦3,302,003-₦4,401,003 per annum. Findings of the study revealed that tomato farmers earned an average of ₦805,310.00 per annum in tomato production with minimum and maximum of ₦5,000.00 and ₦5,500,000.00 and standard error of ₦55,709.30. This indicates that tomato farmers earned considerable amount of income sufficient to purchase and use RPCs technology to reduce the level of their tomato losses there by improving their livelihood status.

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www.jasd.daee.atbu.edu.ng; Volume 5, Number 2, 2022
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Table 2: Quantitative socio-economic variables of smallholder tomato farmers

Variable	Frequency	Percentage	Mean	Std. dev.	Min.	Max.
Age						
18-29	49	15.6	41	11	18	70
30-41	137	43.6				
42-53	94	30.1				
54-65	28	8.9				
66 ≥	4	1.2				
Household size						
2-9	127	40.7	12	6.01	2	34
10-17	141	45.2				
18-25	38	12.1				
26-33	4	1.2				
34≥	2	0.6				
Annual income						
5,000-1,104,000	239	75.6	805,314.03	984,022.56	5,000	5,500,000
1,104,001-2,203,001	46	14.7				
2,203,002-3,302,002	19	6.1				
3,302,003-4,401,003	3	0.9				
4,401,004 ≥	5	1.5				
Sex						
Male	310	99.4				
Female	2	0.6				
Marital status						
Single	32	10.3				
Married	279	89.4				
Widow	1	0.3				
Highest educational qualification						
No formal education	79	25.3				
primary education	95	30.4				
Secondary education	93	29.8				
Tertiary education	45	14.5				

Source: Field survey, 2019

Findings of this study in Table 2 established dominance of male (99.4%) tomato producers in the study area. Only 0.6% of the farmers were female. Low involvement of female in tomato farming could be attributed to the fact that in those areas some agricultural activities including tomato farming are male specific. However, participation of female into tomato production could in many ways help in increasing production, technology development and post-harvest handling processes. This implied that cultural barriers could influence low participation of women into tomato production activities which could deprive many women from the use of the RPCs technology in the study area.

Result of the study shows that majority (89.4%) of tomato farmers were married, while 10.3% of these farmers were single. Only 0.3% of the respondents were widowed in the study area. Married tomato farmers have social responsibilities to cater for the family which could facilitate farmers decision to adopt the use of RPCs technology reduces the level of their tomato losses there by improving their living condition in the study area. Similarly, Shanker *et al.* (2015) further indicated that married people would be more responsive to new innovation like RPCs since they have family responsibility.

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Table 2 further revealed that 30.4% of the farmers had primary education, while 29.8% of the respondents received secondary education, 25.3% of the respondents acquired Islamic education, only 14.5% of the respondents were reported to have tertiary education. Formal education serves as valuable resource to tomato farmers and guide their attitudes and influence the use of RPCs technology in order to improve their level of productivity in the study area. Furthermore, Elemasho *et al*. (2017) in Rivers State, Nigeria reported that literacy could encourage effective use of post-harvest technologies such as RPCs technology.

Post-harvest Storage Technologies in Use Among Small Holder Tomato Farmers

The study described the different types of post-harvest storage technologies in use among small holder tomato farmers using frequency and percentage table presented in Table 3. Findings of the study presented in Table 3 revealed that more than half (63.78%) of the respondents were found using Traditional Woven Baskets (TWBs) to store their tomato fruits. The remaining 36.22% were found using Returnable Plastic Crates (RPCs) to store their tomato fruits in the study area. Low percentage of RPCs technology could be attributed to the high cost of buying RPCs technology, insufficient knowledge on the use of the RPCs technology and unavailability of RPCs technology in the study area. However, the result disagreed with that of Adegbola *et al*. (2011) who reported that few respondents were then found using RPCs technology in Kano State, Nigeria. The findings are however in line with that of Nwabuogo *et al*. (2019) who reported low usage of RPCs technology among traders in Lagos State Nigeria.

Table 3: Respondents based on post-harvest storage technologies in use among tomato farmers

Tomato storage technology	Frequency	Percentage
TWBs	199	63.78
RPCs	113	36.22

Source: Field survey, 2019

Livelihood Status of Smallholder Tomato Farmers in Kano State

The study measures the livelihood status of RPCs and TWBs users among tomato farmers in Kano State, using 5 livelihood status domain such as economic, food, health, education and empowerment. Indices of each were computed based on a number of components under each domain. The value of status index is non-negative and lies between 0 and 1. The index value close to one indicates the higher-level status while index value close to 0 indicates the lower-level status. Figure 1 provides the status of RPCs and TWBs users with respect to different sub-indices and Overall Livelihood Status Index.

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www.jasd.daee.atbu.edu.ng; Volume 5, Number 2, 2022
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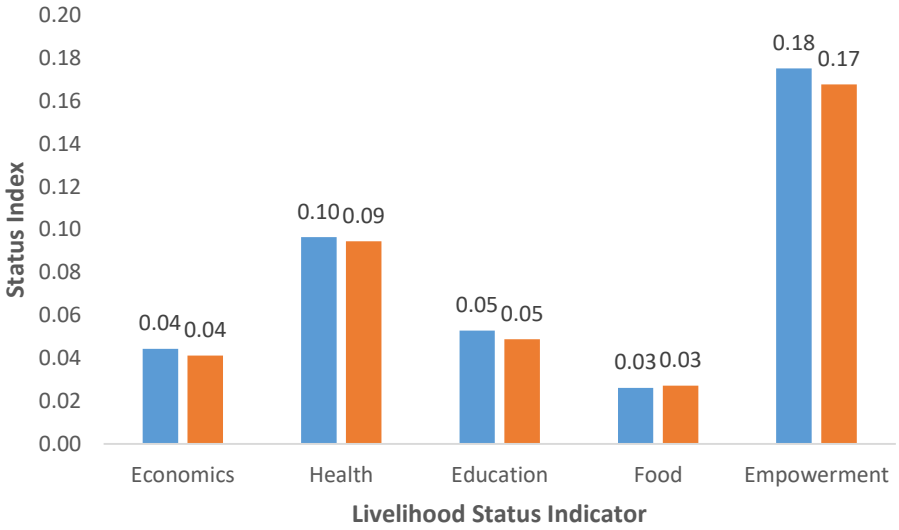

Figure 1: *Livelihood Status Indicators of RPCs technology and TWBs technology users*

Economic Status Index (ECSI) revealed that each of the RPCs and TWBS users had each has an average index of 0.04. Health Status Index (HSI) result indicates that RPCs users had an average index of 0.10, TWBS users were found with an average index of 0.09 (Figure 2). This implied that adequate access to health care services and facilities among tomato farmers may attribute to adoption of RPCs in the study area. Educational Status Index (EDSI) result revealed that RPCs and TWBS users had an average index of 0.05. Food Status Index (FSI) result indicated that RPCs and TWBS users each has an average index of 0.03. This could be attributed to number of times tomato farmers was able to feed his family in a day, number of food groups household members consumed a day and number of months food was found to be convenient to the household members. Empowerment Status Index (EMSI) result shows that RPCs users had an average index of 0.18 whereas WBS users had an index of 0.17. This indicated that tomato farmers improvement in terms of good access to government and non-governmental agricultural advisory services together with household members participation in community planning may facilitate awareness about and adoption of RPCs in the study area.

Overall Livelihood Status result indicated that RPCs users had an average index of 0.40, WBS users were found with an average index of 0.38 (Figure 2). Overall Livelihood Status score of 0.38 among RPCs users implied that smallholder tomato farming household have better access to empowerment training, availability of food, access and control to economic resources together with availability and access to health care and educational facility and services in the study area.

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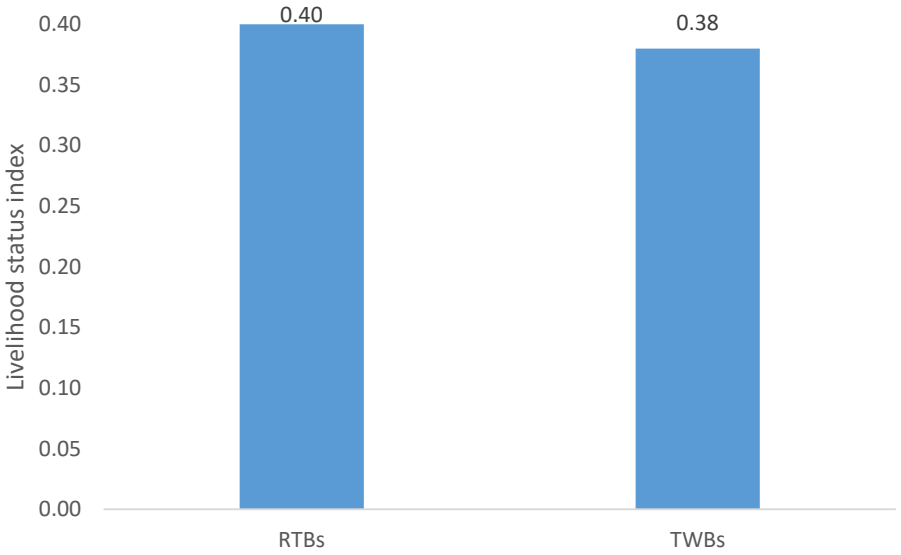

Figure 2: Overall Livelihood Status Index of RPCs technology and TWBs technology users

Socio-Economic and Institutional Factors Influencing Livelihood Status of Smallholder Tomato Farmers

Ordinary Least Square model was used to examine socio-economic and institutional factors influencing livelihood status of smallholder tomato farmers in Kano state. Factors included in the model ware age, marriage, education, farm size, household size, membership with farmers group, access to credit, availability of input source, experience and distance to market. Table 4 presents Ordinary least square regression model result. Table 4 presents Ordinary least square regression model result which indicated that there was a positive and significant impact of education, access to credit, farm size, household size, experience and marriage at $p<0.01$, $p<0.05$ and $p<0.1$, respectively, in influencing livelihood status of smallholder tomato farmers. Regression coefficient for education was positive and at $p<0.01$ in influencing livelihood status of smallholder tomato farmers. This implied that 1% change in formal education is expected to increase the livelihood status of smallholder tomato farmers by 7.4%. Educated farmers are endowed with knowledge and skills which help them to acquire better information to improve their agricultural productivity through the use of modern technology such as RPCs. This finding corroborates with that of Rahman and Akter (2009) who stated that 10% increase in education result in the rise in overall livelihood security by 0.94% in Tongi province in place of 1.13% in Jessore province of Bangladesh.

Access to credit was positive and significant at $p<0.01$ in influencing livelihood status of smallholder tomato farmers. This means that 1% increase in access to credit is expected to increase the livelihood status of smallholder tomato farmers by 3.8%. This implied that credit access helps to improve tomato productivity and investment capacity of poor resource base tomato farmers which enable them to access and adopt new technology, earn more income and improve living condition of the farmers. This result is consistent with that of Apata (2010) who established that access to credit is found to be a welfare improving factors among rural households in Nigeria. Regression coefficient for farm size was positive and significant at $p<0.05$ in influencing livelihood status of smallholder tomato farmers. This implied that 5% increase in farm size is expected to increase the livelihood status of smallholder tomato farmers by 1.2%. This indicated that tomato farmers with large fertile farm, apply

modern agronomic practices, have productive family member are more likelihood to realized high yield, earn more income improve their living condition.

Table 4: Estimated OLS model for socio-economic and institutional factors influencing livelihood status of smallholder tomato farmers

Livelihood status index	Coef.	Std. Err.	T-value
Age	-0.001	0.001	-1.31
Marriage	0.030	0.017	1.77*
Education	0.074	0.014	5.36***
Farm size	0.012	0.006	2.08**
Household size	0.002	0.001	2.33**
M. farmers group	0.002	0.015	0.13
Access to credit	0.038	0.013	2.86***
Availability of input source	0.004	0.005	0.87
Experience	0.001	0.001	2.05**
Distance to market	-0.001	0.001	-1.12
Constant	0.257	0.035	7.38***
Prob > F	0.00		
R-squared	0.23		
Adj R-squared	0.21		

Source: Field survey, 2019

Household size was positive and significant at $p<0.05$ in influencing livelihood status of smallholder tomato farmers. This implied that 5% increase in household size is expected to increase the livelihood status of smallholder tomato farmers by 0.2%. Adoption of new technology is labour intensive in which large family members could support to reduce labour input cost thereby improve tomato farmer's productivity, earn more income and improve living condition. This result contradicts that obtained by Ogwumike and Akinnibosun (2013) who reported that household size was found to decrease the welfare status of farmers by 8.24 percent among farming households in Nigeria.

The coefficient of experience exerts positive and significant impact in influencing livelihood status of smallholder tomato farmers at $p<0.05$. This implied that a year increase in years of experience is more likely to increase the livelihood status of smallholder tomato farmers by 0.1%. This showed that considerable years of experience in tomato production help farmers to make appropriate decision to adopt modern technology to improve their livelihood status. This result is in line with that of Sanusi *et al*. (2013) who established that farming experience of the household head was found to increase welfare status by 28% among farming household in Ikorodu LGA of Lagos State, Nigeria.

The coefficient of marriage is positive and statistically significant in influencing livelihood status of smallholder tomato farmers at $p<0.1$. This implied that 10% increase in married farmers is likely to increase the livelihood status of smallholder tomato farmers by 3.0%. This could be attributed to the fact that married farmers had social and economic obligation to discharge to the household which compel them to adopt RPCs technology to improve their productivity, increase their income and improve their livelihood status. This finding contradicts with that obtained by Ogwumike and Akinnibosun (2013) who reported

that marriage increase the probability of making farmers to be poor among farming household in Nigeria.

CONCLUSION AND RECOMMENDATIONS

The study evaluates the livelihood status and its socio-economic determinants among *fadama* III Tomato Farmers in Kano State, Nigeria. Findings of the study revealed that Result of the study shows that tomato production is dominated among young active, male people who were married and attended more of western formal education. Livelihood status index result indicated that RPCs technologies users had higher livelihood status than the livelihood status obtained by TWBs technologies users. The high index score obtained could be attributed to better access to empowerment training, availability of food, access and control to economic resources together with availability and access to health care and educational facility and services in the study area. Socio-economic factors such as education, access to credit, farm size, household size, experience and marriage were observed to influence the livelihood condition of the farmers in the study area. The following recommendations were suggested based on the findings of the study:

1. To improved livelihood of the smallholder farmer's rural development policies, need to promote awareness on the impact RPCs technology through relatively experience tomato farmers that have access to credit with relatively large farm holding.
2. To improve on the livelihood status of the farmers, development programs aim to support tomato farmers should provide adequate access to empowerment training, food, economic resources together with health care and educational facility among farmers in the study area.

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