# Livelihood Levels of Green Banana Actors along the Value Chain in Moshi and Meru Districts, Tanzania

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***Abstract***

*The study explored the livelihood levels of green banana actors along the value chain in Moshi and Meru Districts in Tanzania. Descriptive statistics (means, percentages, frequencies and tables) were used to analyse the actors' capital sources, activities, capabilities and assets owned. Binary logistics regression was used to compare the relationships between actors' capabilities and assets owned. Convenient sampling technique was used to select samples of green banana producers, collectors, processors, wholesalers and retailers. The sample size of Farmers was 118, Collectors 96, Processors 46, Wholesalers 112 and Retailers 88 for the two districts. Semi-structured questionnaires were used to interview banana value chain actors to obtain primary data. The study found that the actors have different sources of capital. 94 out of 407 respondents (23.10%) relied on banks for their capital needs. A significant majority of respondents, 288 out of 407 (70.76%), relied on their own assets as a capital source. The findings of livelihood capabilities show that the majority of households (69.53%) fall under the "Low" income level. On average, the surveyed households own 1 house with an average value of 18,300,000 TZS. Again, each surveyed household owns 8 acres of land with an average combined value of 89,900,000 TZS in relation to assets owned by banana value chain actors. In conclusion, it was found that there are several areas where livelihood capabilities can be enhanced. The study recommends that the actors should be assisted by Local Government Authorities to have different sources of capital. This is because most of them sell their personal savings, investments, or other tangible assets to fund their ventures. The study also recommends that the actors should focus more on livestock and land ownership since they are significant in both communication and business running capabilities.*

**Key words:** Livelihood levels, green banana, green banana value chain actors

## 1.0 INTRODUCTION

The majority of rural households in East Africa derive much of their livelihood from agriculture. This activity faces challenges related to declining soil fertility and stagnating crop yields, declining farm size as a result of population growth, poor market access, insecure land rights and climate change (Wichern et *al.*, 2017). As such it drives the region to face food insecurity. Banana was found to be one of the crops that sustain different weather conditions and it is one of the main global crops in agricultural trade (Salas-Zapata *et al.,* 2023; Olivares *et al*., 2020;Amsalu, 2019). Worldwide, bananas are produced in more than 130 countries by small-scale and large-scale farmers. Asia is the leading banana production region, accounting for 54.18% of the total production in 2017, followed by the Americas and the Caribbean (26.33%), Africa (17.57%), Oceania (1.52%), and the European Union (Evans *et al.,* 2020). The crop plays a very important role in contributing to food security and as a source of domestic and export revenue in some economies. The exporting countries with the highest production of bananas are Ecuador, the Philippines, Brazil, India, China, Guatemala, the Dominican Republic, Colombia, and Costa Rica (Bebber, 2022; FAO, 2020). It is sometimes referred as "the food of the poor" due to its ability to sustain difficult environments. Despite the trends of increasing banana production, it entails several threats including different capabilities and little assets ownership of value chain actors.

In Africa, the leading banana production countries are Cameroon, Rwanda, Nigeria, Democratic Republic in Congo, Kenya, Cote d'Ivoire, Tanzania and Uganda (Evariste *et al.,* 2021; Onunka, 2020). Banana production is carried out by smallholder farmers under different production systems and other value chain actors play different roles. Notwithstanding the huge banana production in Africa, it was found that production and marketing of some of the value chain actors are mainly constrained by lack of knowledge, moderate attitude and practice of modern agricultural practices. Not only that but also farm size, location, limited access to agricultural inputs, quality inputs, finance, infrastructure, extension services, market information, water and production technologies and transportation were found to constrain banana value chain actors in Africa (Salas-Zapata *et al.,* 2023). Value chain in Africa is carried out by different players under different production systems, of which each one has a different livelihood level (Evariste *et al.,* 2021). Some of them are found in low, moderate and high levels of livelihood.

In Tanzania, green banana is widely cultivated in Kagera, Kilimanjaro, Arusha, Mbeya, Coast, Iringa, Tanga and Manyara Regions and it is the leading source of

household income (Meya *et al*.,2020; Otieno *et al.*, 2018). The crop is the key to the livelihood of residents of Arusha and Kilimanjaro regions particularly in Meru and Moshi Rural Districts (Kilimanjaro Region Investment Guide, 2018; Banano, 2016). Most of the households in the two districts depend on green banana for their livelihood. The green banana value has equal value and the entire population livelihood tied to the green banana value chain (Habiyaremye *et al.*, 2021). The Green Banana actors in the study area sell their bananas in markets within and without the study area. The common banana markets in the study area are Tengeru, Msorongo and Kikatiti in Meru District and Mwika, Marangu Mtoni and Himo in Moshi District. Some actors transport banana to Soko la Ndizi, Kariakoo and Buguruni Markets in Dar es Salaam. Others transport and sell in the neighboring country (Kenya).

The government of Tanzania intervened to boost up the banana value chain though roads construction, banana markets rehabilitation, improving the agricultural research centres and agricultural inputs provision due to its importance in the livelihood of the actors in the study area (Kimaro, 2020). Non-governmental organizations like TAHA, Rikolto and RECODA were introduced to help banana value chain. RECODA came up with RIPART approach whose intervention was intended to find sustainable, low-cost solutions to the challenges faced by small-scale farmers by providing proper tools, techniques and information in a participatory help-to-self-help approach**;** which deliberately takes its starting point in the fact that one-size does *not* fit all.

Regardless of the above efforts taken, it was found that the livelihood of the banana value actors does not match with the available opportunities, hence the need for this study. Therefore, this study intended to examine capability levels of actors; identify activities undertaken by actors; and determine assets owned by actors along the value chain in Moshi and Meru Districts, Tanzania.

## 2.0 LITERATURE REVIEW

### 2.1 Farm Household Production Theory

Farm Household Production Theory (FHPT) examines the policy implication on production among small-scale farmers and different interventions that seek to increase the output of the agricultural sector (Schultz, 1964). This is done by raising farm output prices or by lowering the cost of variable inputs and hence predicting profit to be generated in a given production activity among small-scale farmers. The theory explains that smallholder farmers produce under a high level of uncertainty induced by natural hazards and man-made factors.

According to Kimaro (2020) and Schultz (1964) there is a general perception that small-scale farmers in developing countries are very poor and inefficient in economic production related activities. As a result, for them to produce better and improve their general livelihood conditions, they have to be motivated in different dimensions. Evidence from different countries such as Ethiopia and Zambia show that majority of small-scale farmers have limited knowledge, inadequate capital, poor assets endowment and limited formal protection which limits their capability to invest (Gebre *et al.,* 2020;and Makate *et al.,* 2016). Farm Household Production Theory has proved to be useful in analysing production, market, profitability, price and general sustainability among small-scale farmers in different developing countries (Quick, 2020; Mendola, 2007).

The theory provides insights into the way peasant households manage the trade-off between income risks and expected returns from the production process. Unfortunately, the theory fails to clearly depict where small-scale farmers could get support for their production related activities but it will be useful in analysing the smallholder green banana farmers' livelihood outcomes and the diversification strategies in ensuring sustainable livelihood development. Smallholder farmers depend on farming activities to raise their livelihood outcomes. This can be attained through the proper use of their knowledge, attitudes and practices on farming activities. The outcomes of their efforts will be land ownership, education standards, health services, financial liquidity, home assets and fixtures etc.

## 2.2 Sustainable Livelihood Framework

The sustainable livelihoods framework is a way of understanding how households derive their livelihoods by drawing on capabilities and assets to develop livelihood strategies composed of a range of activities (Livelihoods *et al.,* 2008). The framework defines and categorizes the different types of assets and entitlements which households have access to. The framework examines the different factors in the local and wider environment that influence household livelihood security. The framework looks at the connections between the local or micro situation and actors, institutions and processes at work in the wider world. Working with a framework requires understanding its different elements and the connections between them. Because people view the world in different ways and theorise the relations between things differently, frameworks are constantly contested, adapted and refined (Jeckoniah & Israel, 2020). A number of variations of the basic livelihoods' framework have been described by different development actors. They use different terms to describe similar things (Machimu, 2017). Sometimes the language or concepts are so complex that only

academics and policy developers are likely to use them. It can be argued that the livelihoods framework does not require participatory or appreciative planning approaches to put it into practice. Okonya *et al.,* (2019) argues that the framework is built on a participatory paradigm. The precise mix of tools and methods used to investigate elements of the livelihood's framework will vary from practitioner to practitioner and situation to situation. Due to its nature, the study opted to complement the above theory with this framework so as to cover its weaknesses.

## 3.0 METHODOLOGY

The study was conducted in Meru and Moshi Rural Districts in Tanzania on green banana value chain. In order to undertake this study, a purposive sampling technique was used to collect primary data using a structured questionnaire in 2022. A total of 407 sample respondents were taken from all units of analysis. The study included five actors who were farmers (14,291), collectors (11,627), processors (5,934), wholesalers (14,775) and retailers (10,658) which led to the proportional sample allocated procedure of sample size of each actor to have a representative sample. The sample size of the actors was determined by Oka and Yamane formula (1967). This formula is used to compute the finite population (the known population), which is given by $n = \frac{N}{1+Ne^2}$ , Where, n= Sample size= N=Total population and e= Acceptable error sampling (At 95 % =0.05 confidence interval). The allocation brought in resulted to the sample size of Farmers (118), Collectors (96), Processors (46), Wholesalers (112) and Retailers (88) for the two districts. District-wise, the sample size was computed by equal division of actors' sample size as seen above during the field work.

This study adopted a cross-sectional research design. The design enabled data collection at a single point in time (Kinyondo & Magashi, 2017). It allows description of the characteristics of a population or differences between two or more populations and can specify based on the correlation survey data. The study used both qualitative and quantitative approaches for analysis. Qualitative analysis used content analysis to analyse the collected qualitative data from actors. SPSS Software Version 22 was used to analyse both descriptive and inferential analysis. Descriptive statistics analysis was used to analyse the actors' capital sources, activities, capabilities and assets owned by calculating their frequencies and percentages. Binary logistics regression analysis as a part of inferential statistics was used to compare the relationships between actors' capabilities and assets owned. The general equation of binary logistic model used was as follows;

$$ln\left(\frac{u_i}{1-u_i}\right)=\beta_0+\beta_1 x_{i1}+\beta_2 x_{i2}+\ldots\ldots\ldots+\beta_p x_{ip}$$

Whereby: $\beta_0$, $\beta_1$, $\beta_2$ and $\beta_p$ are coefficients and $x_{i1}$,$x_{i1}$, $x_{i2}$ and $x_{ip}$ are variables
Therefore;$\beta_0+\beta_1 x_{i1(\ Motorcycyle\ number)}+\beta_2 x_{i2}(\ Livestock\ number)+$
$\beta_3 x_{i3(bicycle\ number)}+\beta_4 x_{i4}(Cart\ number)+\beta_5 x_{i5(Land\ size)}+$
$\beta_6 x_{i6(Fridge\ number)}+\beta_7 x_{i7(Furniture\ number)}+\beta_8 x_{i8(Tv\ number)}+$
$\beta_9 x_{i9(Mobile\ number)}+\beta_{10} x_{i10(House\ number)}+\beta_{11} x_{i11(Car\ number)}$
A multistage sampling technique was used to select samples of green banana producers, collectors, processors, wholesalers and retailers as adopted from Sharma *et al. (*2021). Multistage sampling involves dividing a population into multiple stages or levels with sampling occurring at each stage. This technique is used when it is impractical or too expensive to collect data from the entire population (Parajuli *et al.*, 2021). The same applies to convenient sampling which involves the selection of participants based on their easy availability or accessibility. Given the coverage of the two districts, the study adopted the same techniques.

The study collected both qualitative and quantitative data from primary and secondary sources. Semi-structured questionnaires were used to interview banana value chain actors to obtain primary data. Independent variables collected from banana value chain actors were other activities apart from banana (farming of other crops, livestock rearing, business/entrepreneurship activities, carpentry and employment), livelihood capabilities of banana value chain actors (household income, information communication, environmental care and sickness control) and assets owned by banana value chain actors (number of houses owned, televisions, cars, radios, livestock, motorcycles, mobile phones, bicycles, carts, land size, fridges and employees. The structure of the questionnaires was designed as both open and close ended questions. In addition, interview checklist was developed for key informants to supplement the findings. The key informants were banana experts from institutions in the study area. Secondary data was acquired from published reports in district statistics offices, districts and wards agricultural extension officers, markets as well as online sources such as internet, intranet and websites.

## 4.0 FINDINGS AND DISCUSSIONS

### 4.1 Capital sources

The study found the actors had different sources of capital, with Banks the most commonly used capital source, with 94 out of 407 respondents (23.10%) relying on banks for their capital needs. Again, a significant majority of respondents, 288 out of 407 (70.76%), rely on their own Assets as a capital source. This indicates that individuals are using their personal savings, investments, or other tangible

assets to fund their ventures. Support by others was found to be another source of capital. A considerable portion, 82 out of 407 (20.15%), reported receiving support from others as a capital source. This could include financial assistance from family, friends, or business partners. Not only that but also Pension. A small number of respondents, 12 out of 407 (2.95%), mentioned being pensioners as their source of capital. This suggests that they might be utilizing their pension funds or retirement savings to invest in businesses or start new ventures. Around 39 out of 407 respondents (9.58%) mentioned Groups or Cooperatives as their capital source. This indicates that they might be part of collective organizations or cooperative societies that pool their resources to support business activities. Others: Only one respondent (0.25%) reported using an alternative or unspecified capital source that doesn't fall into any of the mentioned categories. The nature of this source remains unclear based on the given information. It's worth noting that some respondents may have mentioned multiple capital sources, which is why the total percentages sum up to more than 100%. The distribution of capital sources provides insights into the financing strategies and preferences within the surveyed population.

### 4.2 Activities carried out by actors

The study involved 407 respondents (actors) who engaged in various activities. It was found that those actors who involved themselves in farming were 124 (30%) while 141 (35%) were livestock keepers. This indicates that since a significant portion of the participants are involved in farming and livestock activities it would be beneficial to encourage them to diversify their practices. This could involve exploring different crops, livestock breeds, or agricultural techniques to increase productivity and reduce risk. Kimaro (2020) cemented on the actors to engage themselves in crop diversification. Science (2020) asserts that banana and plantain production enterprises in West Africa have great prospects in the area of employment generation, contribution to national income and gross domestic product, poverty alleviation, economic and industrial growth and rural development. This is the same case in the study area, where the results show that a big population benefits from both activities. The total number of business participants was 228 (56%). This shows that a considerable number of participants are engaged in business activities meaning that in the study area, business activities are the leading. A small percentage of participants are involved in skilled professions like carpentry, teaching, and other forms of employment. This can open up additional job prospects and potentially lead to higher income levels. This is shown in Table 1 below.

**Table 1: Activities of banana actors**

| *Variables/Other activities* | *Percentages N (%) N=407* |
|---|---|
| *Farming* | *124 (30)* |
| *Livestock* | *141 (35)* |
| *Business* | *228 (56)* |
| *Carpenter* | *1(0.3)* |
| *Employed* | *1(0.3)* |
| *Leader* | *1(0.3)* |
| *Security guard* | *1(0.3)* |
| *Teacher* | *1(0.3)* |

**Some banana varieties that are found in the study area**

The districts are rich with different kinds of banana varieties. In Moshi, *kitarasa* variety seems to be grown there more compared to Meru. The study opted to take some photograps of three varieties for representation. These are as shown below;


This banana variety bunch worth an average of TZS 45,000/= is known as *ndizi mshare* in Kiswahili. It is popularly cooked with meat, beans, fish and sometimes itself.


### 4.3 Livelihood capabilities of banana actors

The findings of livelihood capabilities show that at household income level, the majority of households (69.53%) fall under the "Low" income level, which might indicate a need for income enhancement programs or livelihood support for this

group. There is a smaller proportion of households with "Very Low" (7.13%) and "No" income (1.97%). Identifying the reasons behind their low income and providing targeted assistance could be beneficial.

Again, on Owning vehicles, the majority of households (57.25%) have "Moderate" vehicle ownership. This indicates that a significant portion of the population has access to transportation, which could facilitate livelihood activities. There is still a notable percentage of households with "Very Low" (5.41%) and "Low" (15.97%) vehicle ownership. Efforts to improve transportation infrastructure or support public transportation could help address mobility challenges.

Ability to access Information communication; the majority of households (59.21%) have access to information and communication facilities. However, there is a significant portion with limited access to communication facilities. Expanding access to Information and Communication Technology (ICT) could help enhance livelihood opportunities, especially in today's digital age.

In Running a business; a substantial percentage of households (63.39%) are engaged in running a business, which indicates entrepreneurial potential and economic activity in the community. However, there is still room for growth, as some households have "Very Low" (0.74%) and "Low" (6.39%) engagement in business activities. Providing training, financial support, and mentorship programs for budding entrepreneurs might be beneficial.

On Environment care; a considerable proportion of households (35.87%) prioritize environmental care, which is a positive sign for sustainable development. However, there is room to increase awareness and engagement in environmental care for the remaining households, especially those with lower scores in this variable. Community-based environmental initiatives and awareness campaigns could be implemented.

Lastly is in Sickness Control; the majority of households (45.45%) demonstrate a good level of health management and control of sickness. However, there are still households with lower scores in this variable, indicating a need for better healthcare access and awareness. Strengthening healthcare services and health education programs could improve overall well-being and productivity. This can be supported by Table 2 below.

**Table 2: Livelihood Capabilities of Banana Value Chain Actors**

| Variable | Number (%) N=407 |
|---|---|
| *Household income level* | |
| *1=Very low* | *8(1.97)* |
| *2=Low* | *29(7.13)* |
| *3=Moderate* | *283(69.53)* |
| *4=High* | *50(12.29)* |
| *5=Very high* | *31(7.62)* |
| *Own vehicle* | |
| *0=No* | *1(0.25)* |
| *1=Very low* | *22(5.41)* |
| *2=Low* | *65(15.97)* |
| *3=Moderate* | *233(57.25)* |
| *4=High* | *47(11.55)* |
| *5=Very High* | *31(7.62)* |
| *Information communication* | |
| *2 =Low* | *35(8.60)* |
| *3=Moderate* | *241(59.21)* |
| *4=High* | *80(19.66)* |
| *5=Very high* | *47(11.55)* |
| *Run business* | |
| *1 =Very low* | *3(0.74)* |
| *2=Low* | *26(6.39)* |
| *3=Moderate* | *258(63.39)* |
| *4=High* | *67(16.46)* |
| *5=Very High* | *49(12.04)* |
| *Environment care* | |
| *2 =Low* | *23(5.65)* |
| *3=Moderate* | *137(33.66)* |
| *4=High* | *98(24.08)* |
| *5=Very high* | *146(35.87)* |
| *Control sickness* | |
| *1 =Very low* | *1(0.25)* |
| *2=Low* | *21(5.16)* |
| *3=Moderate* | *136(33.42)* |
| *4=High* | *61(14.99)* |
| *5=Very High* | *185(45.45)* |

### 4.4 Asset ownership among banana value chain actors

The findings represent a list of various assets along with their average numbers and average values in Tanzanian Shillings (TZS). The following are their implications;

For a House, on average, the surveyed individuals or households own 1 house with an average value of 18,300,000 TZS. This indicates the housing situation and potentially the wealth distribution within the surveyed actors.

On Furniture, the average number of furniture items owned is 7, with an average combined value of 1,631,121 TZS. This suggests the level of comfort and amenities in the households, as well as their investment in furnishing their living spaces.

On TV sets owned, on average each surveyed household owns 1 television set with an average value of 353,179 TZS. This reflects the prevalence of entertainment and media consumption within the population.
Car owned; the average number of cars per surveyed household is 1, with an average value of 10,900,000 TZS. Car ownership indicates a certain level of affluence and mobility. It enables actors to transport their goods from production points to the market places.

Radio; each surveyed household owns 1 radio on average, with an average value of 133,829 TZS. Radios could be a primary source of information and entertainment in the absence of other devices like TVs and Computers.
Livestock owned; the findings suggest an average ownership of 621 livestock animals, with an average combined value of 7,004,274 TZS. Livestock ownership is common in agricultural communities and can be a significant source of income and sustenance.

Motorcycle; on average, each surveyed household owns 1 motorcycle with an average value of 1,178,190 TZS. Motorcycles can provide a cost-effective mode of transportation, especially in areas with limited infrastructure.

Mobile Phone; the average number of mobile phones owned per household is 2, with an average combined value of 264,119 TZS. Mobile phones are essential communication tools and often serve multiple purposes beyond just calling.

Bicycle; each surveyed household owns 1 bicycle on average, with an average value of 66,767 TZS. Bicycles can provide a means of transportation, especially in rural or less developed areas. Cart; the average ownership of carts is 1 per household, with an average value of 52,759 TZS. Carts might be used for transporting goods or other purposes in areas where mechanized transport is limited.

Land; on average, each surveyed household owns 8 parcels of land with an average combined value of 89,900,000 TZS. Land ownership can have significant economic implications, especially in agricultural or developing areas. Employees; the average number of employees is 5 per household, with an average value of 258,277 TZS. This could represent individuals employed within the household or by the household members. There is also an incidence of contract and daily employment.

Fridge; each surveyed household owns 1 refrigerator on average, with an average value of 238,391 TZS. Refrigerators contribute to food preservation and overall living standards.

These findings provide insights into the socio-economic conditions, lifestyle, and asset ownership patterns within the surveyed banana value chain actors. They reflect the varying degrees of wealth, access to resources, and living standards among different households. Table 3 below summarises the above discussions.

**Table 3: Assets owned by banana value chain actors**

| *Assets* | *Average Number of assets* | *Average Values of asset (TZS)* |
|---|---|---|
| *House* | *1* | *18,300,000* |
| *Furniture* | *7* | *1,631,121* |
| *Tv* | *1* | *353,179* |
| *Car* | *1* | *10,900,000* |
| *Radio* | *1* | *133,829* |
| *Livestock* | *621* | *7,004,274* |
| *Motorcycle* | *1* | *1,178,190* |
| *Mobile phone* | *2* | *264,119* |
| *Bicycle* | *1* | *66,767* |
| *Cart* | *1* | *52,759* |
| *Land* | *8 (acres)* | *89,900,000* |
| *Employees* | *5* | *258,277* |
| *Fridge* | *1* | *238,391* |

## 4.5 Capability in household income level

The study had provided the findings list of coefficients and p-values for various factors about household income capability. These coefficients and p-values are results from a statistical analysis (binary regression analysis), whose objective was to understand how different factors contribute to or are associated with

household income capability. The p-values are used to determine the statistical significance of each coefficient. These factors include Motorcycle numbers, Livestock numbers, Bicycle numbers, Cart numbers, Land numbers, Fridge numbers, Furniture numbers, and the Constant term.

The coefficient represents the estimated effect of each factor on household income capability. For example, a positive coefficient suggests a positive relationship between the factor and income capability, while a negative coefficient suggests a negative relationship. The p-value indicates the statistical significance of each coefficient. In this context, a low p-value (typically less than 0.05) indicates that the factor is statistically significant and most likely has a real effect on household income capability. A higher p-value suggests that the relationship might not be statistically significant.

Therefore, the interpretation of the findings shows that a decrease in motorcycle numbers is associated with an increase in household income capability. An increase in livestock numbers is associated with a small positive impact on household income capability. An increase in bicycle numbers is associated with an increase in household income capability, but the result is not statistically significant at the 0.05 significance level. An increase in cart numbers is associated with a significant increase in household income capability. An increase in land numbers is associated with an increase in household income capability. An increase in fridge numbers is associated with an increase in household income capability. Lastly an increase in furniture numbers has a small positive impact on household income capability, but the result is not statistically significant at the 0.05 significance level as shown in Table 4 below.

**Table 4: Capability in household income level**

| *Income capability* | *Coefficient* | *P-values* |
|---|---|---|
| *Motorcycle numbers* | *-2.5467* | *0.009* |
| *Livestock numbers* | *0.0002* | *0.043* |
| *Bicycle numbers* | *1.9001* | *0.120* |
| *Cart numbers* | *3.9865* | *0.090* |
| *Land numbers* | *0.1019* | *0.009* |
| *Fridge numbers* | *1.4407* | *0.016* |
| *Furniture numbers* | *0.1153* | *0.111* |
| *Constant* | *-19.3855* | *0.005* |

Note: significant at 5% level

## 4.6 Capability in communication

The study explored on the coefficients and p-values related to communication capability and various factors using binary regression analysis. The findings were as follows; Motorcycle number (0.2598, p = 0.662): the positive coefficient suggests that an increase in the number of motorcycles is associated with a higher communication capability. However, since the p-value is greater than 0.05, this relationship is not statistically significant. In other words, the increase in communication capability with an increase in motorcycle numbers might be due to chance rather than a real effect.

Livestock number (-0.0349, p = 0.001); the negative coefficient suggests that an increase in the number of livestock is associated with a decrease in communication capability. The low p-value suggests that this relationship is statistically significant. Bicycle number (0.5820, p = 0.334); the positive coefficient suggests that an increase in the number of bicycles is associated with a higher communication capability.

Cart number (1.3412, p = 0.021); the positive coefficient suggests that an increase in the number of carts is associated with a higher communication capability. The p-value is less than 0.05, indicating that this relationship is statistically significant.

Land number (-0.0139, p = 0.637); the negative coefficient suggests that an increase in the amount of land is associated with a decrease in communication capability. However, the p-value is greater than 0.05, indicating that this relationship is not statistically significant.

Fridge number (-0.6655, p = 0.106); the negative coefficient suggests that an increase in the number of fridges is associated with a decrease in communication capability. The p-value is slightly above 0.05, so while the relationship isn't very strong, it is worth noting as a potential trend.

Employees number (0.0152, p = 0.798); the positive coefficient suggests that an increase in the number of employees is associated with a higher communication capability. However, the p-value is much greater than 0.05, indicating that this relationship is not statistically significant.

Furniture number (0.0024, p = 0.959); the positive coefficient suggests that an increase in the number of pieces of furniture is associated with a higher

communication capability. However, the p-value is much greater than 0.05, indicating that this relationship is not statistically significant.

TV number (0.0461, p = 0.934); the positive coefficient suggests that an increase in the number of TVs is associated with a higher communication capability. However, the p-value is much greater than 0.05, indicating that this relationship is not statistically significant.

Car number (1.5736, p = 0.000); the positive coefficient suggests that an increase in the number of cars is strongly associated with a higher communication capability. The very low p-value (close to 0) indicates that this relationship is highly statistically significant. Constant (-1.4468, p = 0.000):
In summary, the given p-values and coefficients, the number of livestock, carts, and cars appear to have a statistically significant impact on communication capability. Other variables like motorcycles and fridges might have some relationship, but it is not statistically significant. The rest of the variables (bicycles, land, employees, furniture, TVs) do not seem to have a significant impact on communication capability.

**Table 5: Capability in communication**

| *Communication capability* | *Coefficient* | *P-values* |
|---|---|---|
| *Motorcycle number* | *0.2598* | *0.662* |
| *Livestock number* | *-0.0349* | *0.001* |
| *Bicycle number* | *0.5820* | *0.334* |
| *Cart number* | *1.3412* | *0.021* |
| *Land number* | *-0.0139* | *0.637* |
| *Fridge number* | *-0.6655* | *0.106* |
| *Employees number* | *0.0152* | *0.798* |
| *Furniture number* | *0.0024* | *0.959* |
| *TV number* | *0.0461* | *0.934* |
| *Car number* | *1.5736* | *0.000* |
| *Constant* | *-1.4468* | *0.000* |

This is at 5% significant level

### 4.7 Capability in running the business

The study analysed the impact of different factors on the capability of running a business. The coefficients and p-values represent the relationship between each

business capability factor and the dependent variable (capability in running the business). The study had the following findings;

To start with Motorcycle Number, the positive coefficient (0.7355) with a relatively high p-value (0.332) suggests that an increase in the number of motorcycles might positively impact the business capability, although the relationship is not statistically significant.

Livestock Number; the extremely small positive coefficient (0.0001) with a low p-value (0.001) indicates that a higher number of livestock could significantly contribute to better business capability.

Bicycle Number had positive coefficient (0.3329) with a moderate p-value (0.545). More bicycles might have a positive effect on business capability, but this relationship is not very strong or statistically significant.

Cart Number; Negative coefficient (-0.2776) with a high p-value (0.602). The number of carts seems to have a negative impact on business capability, but the relationship lacks statistical significance.

Land Number: Negative coefficient (-0.0300) with a moderate p-value (0.275). The number of land plots has a very slight negative effect on business capability, but this effect is not statistically significant.

Fridge Number had a strong negative coefficient (-0.9218) with a somewhat low p-value (0.090). A higher number of fridges appears to have a significant negative impact on business capability, although the statistical significance is not very strong.

Employees Number had a negative coefficient (-0.0491) with a moderate p-value (0.275). The number of employees has a small negative effect on business capability, but this effect is not statistically significant.

Furniture Number had a positive coefficient (0.0668) with a moderate p-value (0.255). More furniture might contribute positively to business capability, although the relationship is not statistically significant.

TV Number had a positive coefficient (0.6701) with a moderate p-value (0.261). The number of TVs might have a positive impact on business capability, but the relationship lacks strong statistical significance.

On Car Number the significant positive coefficient (1.7730) with a very low p-value (0.000). An increase in the number of cars significantly enhances business capability.

Overall, the findings suggest that factors like Livestock Number, Car Number, and Fridge Number have notable impacts on business capability, while others like Motorcycle Number, Bicycle Number, and TV Number have less significant or statistically inconclusive effects on capability in running the business.

**Table 6: Capability in running business**

| *Business capability* | *Coefficient* | *P-values* |
|---|---|---|
| *Motorcycle number* | *0.7355* | *0.332* |
| *Livestock number* | *0.0001* | *0.001* |
| *Bicycle number* | *0.3329* | *0.545* |
| *Cart number* | *-0.2776* | *0.602* |
| *Land number* | *-0.0300* | *0.275* |
| *Fridge number* | *-0.9218* | *0.090* |
| *Employees number* | *-0.0491* | *0.275* |
| *Furniture number* | *0.0668* | *0.255* |
| *TV number* | *0.6701* | *0.261* |
| *Car number* | *1.7730* | *0.000* |
| *Constant* | *-2.7051* | *0.000* |

This is at 0.05 significant level

## 5.0 CONCLUSION

In conclusion, the findings suggest that there are several areas where livelihood capabilities can be enhanced. Targeted interventions and support, such as income-generating programs, infrastructure development, ICT access, entrepreneurship support, environmental awareness, and improved healthcare, could contribute to the overall improvement of livelihood capabilities in the community. It would be essential to work with local authorities, Non-Governmental Organizations (NGOs), and community members to develop and implement initiatives tailored to the specific needs of the population.

## 6.0 RECOMMENDATIONS

The study recommends that the actors should be assisted by Local Government Authorities to have different sources of capital. This is because most of them sell their personal savings, investments, or other tangible assets to fund their ventures. The study also recommends that the actors should focus more on livestock and land ownership since they are significant in both communication and business

running capabilities. A small percentage of participants are involved in skilled professions like carpentry, teaching and other forms of employment like security guards of which all bear 1 (0.3%), showing there could be opportunities to offer skills training and development programs in these areas.

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