Extreme Poverty and Food Insecurity as sources of Entrepreneurial Orientation among Food Traders in a Rural Community of Chisamba

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Abstract

The study was conducted in order to establish if poverty and food insecurity can be sources of entrepreneurial orientation among food traders. Poverty and food insecurity represent the two major challenges faced many communities, for which the United Nations target to eradicate poverty and eliminate hunger as envisioned in the Sustainable Development Goals (SDGs).

The study was conducted using a mixed research design were both qualitative and quantitative data were collected. A structured questionnaire was used to collect data, and was prepared using the Food Insecurity Experience Scale (FIES). Data were collected from 95 food traders, utilizing a census approach. Data were analysed using descriptive statistical functions such as means and frequencies as well as arithmetic calculations.

The results indicate that all the respondents live in extreme poverty, measured through cut-off line of living under US $2.15 per person per day. Specifically, 40.6% live under US $0.81, 23% live under US $1.81 and 15% live under US $1.35. Further, the respondents eat a variety of food stuff as and when available but were still food insecure because they usually eat same type of food, adults and children skip meals and have reduced food portions when food is available, food doesn't last and it runs out often.

Therefore, the households are forced to engage in farming so as to produce food crop for home consumption and sale the excess at designated trading areas and roadside markets. The respondents were found to exhibit entrepreneurial orientation characteristics of competitiveness, aggression, proactivity and autonomy. Based on this finding, it can be concluded that poverty and food insecurity are a source of entrepreneurial orientation.

Key words: Poverty, Food, Insecurity, Entrepreneurship, and Traders

1. Introduction

Poverty and food insecurity are common phenomenon in most households in Zambia. To the comfort of Zambia, the two conditions affect many other countries across the globe. This predicament led the United Nations to place them top of the Millennium Development Goals (MDGs). However, at the time of completion of the MDGs in 2015, the national poverty prevalence rate in Zambia was high at

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54.4%, and well above 76% in the rural areas (Central Statistics Office, 2016). In 2022, the Living Condition Monitoring Survey placed national poverty in Zambia at 60%, confirming the soaring level of poverty in the country (ZAMSTAT, 2022). The World Bank (2022) consistently placed the poor across the globe at the end of the MDGs at over 1 billion, affirming the prevalence of the predicament. A telephone survey on the effects of COVID-19 on poverty by Varghese *et al*. (2021) revealed that poverty soared to 55.8% in 2019 against 54.4% in 2015. In the rural areas, it worsened to 79.4% in 2019 against 76% recorded in 2015. The poverty levels captured in both 2015 and 2019 were way above the regional average of 42% (World Bank, 2021). The level of poverty in the Southern Africa region compares with the Sub-Sahara Africa region Global Food Security Index which stood at 45% food availability, 38% food quality and safety, and 80% food affordability, in 2015 (Alexander *et al*., 2018). The International Food Policy Research Institute (2015), which measures hunger, found the hunger index for Zambia to be 41%, which implies limited availability and access to food. Considering that the MDGs closed with poverty been high, the United Nations prioritised the development of the Sustainable Development Goals with Goal Number 1, which is to eradicate poverty by 2030 (United Nations, 2015a).

Although the rural areas report high poverty levels in Zambia, the level of participation in farming is very high. For instance, the 2017/2018 Livestock and Aquaculture Census placed rural participants in agriculture at 2,267,999 people of which 76.3% were male and 23.7% were female, while 1,459,363 were non-agriculture households. 72% of the participants are involved in livestock, poultry, fish and bee keeping whereas only 28% participate in crop production.

Most of the households involved in farming have a fair family size of between 4 and 6, 7 to 9 was second placed and the rest have above 10 members in the family. Phiri and Mwaanga (2020) reviewed government policy documents and found out that women participation in agriculture is relatively high at 35%, although it has declined from 38.8 in 2017. Therefore, it doesn't make agricultural sense as to why many Zambians are food stressed and food insecure.

Globally, most countries are experiencing food stress (Global Report, 2021) and the World Food Programme (2021) placed Zambia at IPC 2 state of food stress. IPC Phase 2 is the level of food stress where 5% to 10% of the population is malnourished acutely, have unstable income thereby consuming less than 2,100 calories per day per person and eat minimal inadequate diets (World Food Programme, 2021a). Countries are recommended to target IPC 1 which is a situation where the larger population have access to enough nutritious food without facing difficulties in acquiring it, have stable income and intake above 2,100 calories per person per day and only less than 5% of the population is malnourished (World Food Programme, 2021a).

A comparative assessment of food stress in Southern and Central African countries revealed that Zambia stood at 24% food stress and the Food and Agriculture Organisation (2014) equally reiterated the concern of continued food insecurity in the country. This was affirmed by the Global Report on Food Crises (2021) which revealed 4.2% wasting among children under 5 years old, 34.6% stunting, and only 23.2% of children aged up-to 23 months receive minimum dietary diversity, whereas 31.1% of reproductive age women do, and anemia affects 58.1% of the children.

Study Objective

The study aimed at establishing whether poverty and food insecurity can trigger entrepreneurship orientation. This assumes that entrepreneurial orientation tends to foster individuals to engage in entrepreneurial activities in order to improve their livelihoods. This stems from the high nationwide poverty of 54.4% and above an average of 78% in rural areas (Central Statistics Office, 2016) and consistently increased to 60% in 2022 (ZAMSTAT, 2022). This predicament is against several interventions which have been and continue to be implemented over the previous three decades (World Bank, 2023), with concerning levels of undernourishment at about 46% (Food and Agriculture Organisation, 2017).

Literature Review

Poverty assessment

Poverty in the current study is based on the economic approach, and living standard in particular. For instance, FAO (2018) undertook to measure poverty using income, health, education status, living standards and ownership of key assets. The living standard that was adopted in the current study is the one pronounced by the World Bank (2022) of living on less than $2.15 per adult person per day. The United Nations reported in 2015 that poverty continues to be a serious challenge facing the world today, against which Castaneda et al. (2022) profiled the poor across the globe based on data collected from 89 countries. They found that most people in rural areas were moderate to extreme poor, most of whom were young and live in larger households with many children, whose main occupation was agricultural work.

Sub-Saharan Africa seem to be the most affected region in terms of poverty and food insecurity largely due to poor governance, conflict and entrenchment (Tchamyou, 2019). This situation was echoed by Nwani and Osuji (2020) when they compared Africa and Asia and found that many people in Africa lived below the poverty datum line of $1.9 per adult person per day. Considering that this datum line was revised by World Bank (2022) to $2.15 per adult person per day, the implication is that many people have been enveloped by the new datum line.

Types of Poverty

Poverty can be described from various angles. For instance, Singer (2002) referred to *economic poverty* to mean lacking financial and other material resources needed to survive. Poverty can also be mental when a person experiences intellectual deprivation (Velasquez, 1999). On the other hand, Beitz (2005) and Wight (1966) found some people to lack moral judgement and called it moral poverty.

Other poverty types relate to the inner being of a person such as lacking sanctity or fails to recognize spiritual matters (Oladipo, 2009). Related to this one is emotional poverty in which a person fails to control emotions (Aristotle, 2004). Emotional poverty may lead to social poverty when a person fails

to manage friendly relations (De Soysa, 2001). In this paper, the researchers focused on economic poverty and particularly income and expenditure on food.

Food Security

Agriculture is an important sector in Zambia which contributes about 6% on average to the Gross Domestic Product and employs about 25% of the labor force in the country (Zambia Statistics Agency, 2021). Agriculture is an enabler of food security, which Hulse (2007) described as a situation in which people enjoy guaranteed access to required quantity and quality of food at the right price all the time, so as to ensure continued possession of food which is enough to provide the right nutrition.

Idayanti and Rejeki (2018) argued that food security is a basic human right and as such, countries ought to attain food sovereignty, self-sufficiency and security and Tvaronviciene (2018) supported this view by arguing that food security is paramount to the wellbeing of the citizenry. Lysons (2014) supported this view when he stated that food security entails having access to adequate safe and nutritional food aimed at maintaining a healthy lifestyle. The price of food is critical to measuring food security because a high price tend to limit access. This is evidenced by the 2008 80% spike in food prices which resulted in massive restriction to access to available food by many households (Crafton, 2015). Thus, Urgell-Lahuerta *et al*. (2021) expressed concern with the rate at which food security was becoming a global problem, especially in Africa.

Factors Affecting Food Security

There are many factors that affect food security such as poverty, climate change, food prices, outbreak of communicable diseases, challenges in the agricultural sector and conflict. Poverty and food security act in reverse and sometimes compliments each other. For instance, poverty limits the ability of people to afford to buy available food because of no or low income (FAO, 2017a); climate change resulting into floods and droughts tend to limit food production (Hanley *et al*., 2021); high food prices tend to limit food access for many low income earners and poor people (FAO, 2015); communicable pandemics such as the COVID-19, which disrupted food production and supply chain, tend to limit agricultural produce and access to markets due to lockdowns; cultural practices that lead to avoiding certain foods limit food intake (Alesina and Giuiano, 2015); shortage of seeds which limit food production (Sustainable Development Report, 2015); conflicts tend to disrupt food production and the supply chain such as the on-going Ukraine-Russia war which has constrained food production, production of agricultural chemicals and restricted grain supply chain (Berkhout *et al*., 2022).

Scholes and Briggs (2004) designed a model of factors which affect food security at household level and stated that poverty and unemployment tend to reduce food availability; inaccessible markets, climate change, and communicable diseases reduce and restrict food availability; and high food prices, religious beliefs and culture restricts food availability to households.

Entrepreneurship and Entrepreneurial Orientation

Zahra (1999) considered entrepreneurship as a significant factor in development and social economic growth because it provides many opportunities for employment, alternative goods and increase national prosperity, which view was supported by Koellinger and Thurik (2012) when they stated that

entrepreneurship was emerging as a function of economic growth for both developed and developing world. Morris (1998) stated that due to the corporate downsizing and privatization experienced in the early 1990s, entrepreneurship proved to be the alternative employment. Khanum *et al*. (2014) conducted a study on the impact of entrepreneurship development on household income and expenditure whose results indicates that average enterprise income increased which in turn increased household income due to involvement in entrepreneurial activities by the participants, compared to lack of involvement.

Sang and Suzzane (2000) presented three perspectives of entrepreneurship namely individual, environmental and firm. Individual approaches relate to psychological traits of a person while environmental aspect is attributed to responding to certain issues in the environment. The firm approach sees entrepreneurship as an organized formal process of delivering change to society. From this perspective, Sang and Suzzane (2000) explained that individuals tend to portray entrepreneurial orientation which is made up of four constructs namely autonomy, competitive, aggression and proactivity. Otilia and Daniel (2015) supported the views of Maier and Zenovia (2011) as they argued that entrepreneurship involves initiation, innovation, decision making and risk taking and the actor is an entrepreneur. Adachi and Hisada (2017), stated that entrepreneurs are individuals with a business idea that choose to be self-employed or own a business.

However, Schumpeter (1934) focused on the actions of entrepreneurs such as the innovation of new products, methods of production and processing, opening a new trading area and the establishment of a business. Ripsas (1998) affirmed this view by stating that for Schumpeter, entrepreneurship was all about something new. In the view of Baker and Welter (2018), another way to contextualize entrepreneurship is by considering the historical perspectives which vividly indicate that entrepreneurs are actors rather than spectators.

Food Entrepreneurs

Kahan (2013) revealed that small scale farmers who are characterised by farming for home consumption with intention to sell surplus, or exclusively for the market or home use can as well be entrepreneurs. He modelled food entrepreneurs to cascade from growing food for home consumption and sell excess, sell and consume excess and to farming for sell only.

Gerlach (1963) knew earlier that traders were active entrepreneurs who fostered economic development and stimulated new markets for food staffs by changing dietary intakes and Rahman (1997) in Hossain *et al.* (2021) identified five entrepreneurs among them domestic traders and cited Schumpeter (1976) as the main author who coined the word entrepreneur and linked it to innovators with potential to do new things. Heuvel and Aksant (2007) described a trader as one who is enterprising and is a merchant, wholesaler, buyer, smallholder or shopkeeper and may sell one or many types of products with or without formal registration of business. Therefore, the current study classified food traders as entrepreneurs in line with Heuvel and Aksant (2007).

Although many people express interest to undertake trading and entrepreneurial activities, Bridges *et al*. (2003) observed that entrepreneurs experienced difficulties in accessing finance for business thus individuals decide to engage in entrepreneurship based on their level of wealth. This view was echoed by Kabukuru and Afande (2016) who found that entrepreneurs in Kenya faced challenges in

accessing credit for their business and women were the most affected due to lack of collateral. Dunn and Holtz-Eakin (2001) noted that inheritance of family assets was another important attribute that influenced an individual's ability to engage in entrepreneurship and so was considered a proxy. The European Institute for Gender Equality (2016) examined literature and found that women still face challenges such as access to finance, unfavorable business regulations, cultural barriers, information and training gap

Methodology

Study Area

The study was conducted in Chisamba area of Central Province, about 50 kilometers from Lusaka, the capital city of Zambia. The specific site, William settlement, is located along the main highway from Lusaka to Kabwe town, due 30^0 East of the Greenwich.

Research Design

The mixed research approach was adopted in order to collect both qualitative and quantitative data. The main research design followed an explanatory research design.

Population and Data Collection

The population for the study was made up of traders who trade at William main and roadside markets in Chisamba. The number of traders was compiled from the market official register and was found to be 95 traders who trade in food crops. Considering that the population was small, the study undertook to collect data from all the potential respondents, in a census way.

The research data were collected using a structured questionnaire, whose questions were adopted from the Food Insecurity Experience Scale (FIES) as applied by Smith *et al.* (2017) in Adjognon (2020). A door to door campaign was utilised in administering the questionnaires to food traders in the main market as well as road side markets. Questionnaire administration was carried out with the aid of four (4) trained Research Assistants.

Method of Data Analysis

Data were subjected to descriptive statistics, with focus on frequency, mean, standard deviation and arithmetic calculations as the main functions of analysis. Frequencies were used to highlight most frequent answers, mean was used to measure central tendency and establish the range in which responses fell and standard deviation indicated how the responses varied from the mean. Most of the questions in the questionnaire were Likert type on a Likert scale of 1 to 7.

Description of key Questionnaire Variables

The questionnaire included sex, age, education, experience in occupation, gender, marital status, household size, income and Food Insecurity Experience Scale (FIES). The FIES questions were partially modified by including additional questions in order to assess the food insecurity and poverty situation of the participants. Each one of the variables were modelled as follows:

a) Sex is a binary nominal variable and the expectation is that the majority are women (Kabonga *et al.,* 2021; Merluzzi and Burt, 2020), although they face barriers (Sullivan and Meek, 2012); while men are minority food traders;

b) Age is a quantitative variable for which Bai *et al*. (2022) found 40 years as the average for most entrepreneurs and Azoulay *et al.* (2018) made similar findings but placed the average age at 45 years;

c) Education is a nominal variable and the level influences the desire and success of entrepreneurs (Kankwamba and Kornher, 2019) and so the level of education is related to business success (Peters and Brijlal, 2011);

d) Experience in occupation is a quantitative variable and more experience influences success (Rider *et al.,* 2018);

e) Marital status is a nominal variable for which single women have more propensity to become entrepreneurs (Uike and Maharaj, 2019), although Ripoll *et al.* (2022) found that married entrepreneurs were happier than their single counterparts;

f) Household size is a quantitative variable and large size trigger entry into entrepreneurship (Kankwamba and Kornher, 2019). In Zambia, the basic needs and nutrition basket is measured on a family size of five (5) by the Jesuit Centre for Theological Reflection in order to calculate the food basket (Jesuit Centre for Theological Reflection, 2022).

g) Income is a quantitative variable and measures the earnings by food entrepreneurs (Kankwamba and Kornher, 2019);

h) The FIES was adopted with eight questions as follows (1) worried that they will not have enough to eat; (2) worried that they cannot eat nutritious food; (3) always eat the same thing; (4) skipped meals; (5) ate less than they should; (6) found nothing to eat at home; (7) were hungry but did not eat; and (8) ate nothing all day; and

i) Extreme poverty is measured through the datum line of living under US $2.15 per adult person per day.

Determination of Range for Likert Scale Data

The Likert questions ranged from 1 to 7 with 1 representing 'Strongly Disagree', 2 representing 'Disagree', 3 representing 'Slightly Disagree', 4 representing 'Neutral', 5 representing 'Slightly Agree', 6 representing 'Agree' and 7 representing 'Strongly Disagree'

Based on the scale, the researchers developed the range using 0.86 for classifying responses. The 0.86 was obtained by subtracting 1 from the extreme scale of 7 and dividing by the number of scales as follows:

$$Constant = \frac{\text{US (Upper scale)} - \text{LS(lower scale)}}{\text{Number of Scales}}$$

$$0.86 = \frac{7-1}{7}$$

This implied adding 0.86 to each scale with an additional 0.01 to each lower bound for class distinction. The resulting range is presented in the Table 1.

Table 1: Ranges of the Likert Scale

Scale	Lower	Upper	Category
1	1.00	1.86	Strongly Disagree
2	1.87	2.73	Disagree
3	2.74	3.60	Slightly Disagree
4	3.61	4.47	Neutral
5	4.48	5.34	Slightly Agree
6	5.35	6.207	Agree
7	6.217	7.077	Strongly Agree

The mean scores were used to determine the class in which each response belong from one (1) to seven (7).

Results

A 100% response rate was obtained following the active participation by all the traders, hence N = 95 and n = 95. However, some questions did not receive 100% response and so had missing cases.

Demographic characteristics

The results in terms of sex indicates that female traders were 57% and male traders were 41%, majority (28%) of whom were aged above 40 years. This result is consistent with Kabonga *et al.* (2021) after they intimated that there is more female participation in trading than male counterparts. The result on age is similar to what Bai *et al*. (2022) and Azoulay *et al.* (2018) found when they revealed that most food traders were aged above 40 years and 45 years, respectively. This age range is synonymous with knowledge and understanding of the business environment.

Results of the level of education revealed that the majority (26%) of the respondents ended schooling in Grade 9 followed by those who reached Grade 7 (24%), Grade 12s were 23% and below Grade 7 were 13%. This result indicates that 87% of the respondents schooled below Grade 12 while 10%

reached tertiary education. This finding is comforting to the current research because it implies that the majority of the respondents have basic education and can therefore read and write. It was also expected that the respondents had appetite to undertake trading (Kankwamba and Kornher, 2019).

Another variable under study was work experience in the current occupation. The majority (44%) were found to have between 4 and 6 years followed by those who had 1 to 3 years of experience (24%) while less than 10% of each age range had experience above 7 years. The work experience which has been found in this study is fair in terms of business knowledge, attainment of skills and ability to withstand business shock. Therefore, it was expected that the majority of the respondents had the necessary ambition to achieve business success (Rider *et al.,* 2018).

The variable on family size revealed that the majority of the respondents (44%) had a family size between 5 and 6 followed by those who had between 3 and 4 (30%) and third placed had between 7 and 8 (13%) members. The minority of the respondents (6%) had a family size of maximum two individuals. These results were the majority of the respondents had a family size of 5 to 6 is consistent with the 2017/2018 Livestock and Aquaculture Census report and affirms the finding by Kankwamba and Kornher (2019) that a large family size triggers entry into entrepreneurship. The majority family size of between 5 and 6 compares with the food basket by the Jesuit Centre for Theological Reflection (2022) which uses a family of 5 as the basis for the measure of the family Basic Needs and Nutrition Basket (BNNB). Therefore, the average family size considering results with more participants and using the lower bound pessimistically was computed as follows:

$$Average\ family\ size = \frac{Lower\ bound\,(class\ one + class\ two + class\ three + class\ four)}{number\ of\ classes}$$

$$Average\ family\ size = \frac{2+3+5+7}{4} = 4$$

The characteristic on 'condition' of most of the respondents was able bodied which stood at 47% followed by widows which was 21% and lastly woman head was at 18%. The rest of the characteristics such as 'disabled', 'widow', 'child-headed household', 'aged' and 'chronic' sick were less than 3% each and collectively 12%. This shows that the majority of the traders were well able to trade competitively.

Perception of Poverty

Monthly income and family food cost per day

Monthly income was used to measure the level of income of the respondents in order to establish their state or poverty. The poverty line in the Seventh National Development Plan (7NDP) was set at living under $1.09 per adult per day. The Millennium Development Goal (MDG) No. 1, now Sustainable Development Goal Number 1 focus on eradicating extreme poverty for people living under US $1.2 per person while FAO (2018) intimated that extreme poverty refers to all those living under USD 1.9 per day and currently revised to US $2.15 per adult person per day (World Bank, 2022).

The results revealed that the majority (48%) of the respondents earned between K1.0 and K500 per month followed by those who earned between K501 and K1,000 while 10.4% earned close to nothing. The rest of the categories of income are highlighted in Table 2.

Table 2: Level of income of respondents

Description	Frequency	Percent	Valid Percent	Cumulative Percent
None	10	10.4	10.8	10.8
k1-k500	46	47.9	49.5	60.2
k501-k1000	27	28.1	29	89.2
k1001-k1500	5	5.2	5.4	94.6
k2001-kk2500	1	1	1.1	95.7
k2501-k3000	1	1	1.1	96.8
above k3000	3	3.1	3.2	100
Total	93	96.9	100	
System	3	3.1		
	96	100		

Using the upper bound optimistically, the average family income was computed as follows:

$$Average\ family\ income = \frac{Upper\ bound\ (class\ two + class\ three + class\ four)}{number\ of\ classes}$$

$$Average\ family\ income = \frac{500 + 1000 + 1500}{3} = K1{,}000$$

This average income of the households per month indicate that the average income per person is as follows:

$$Average\ income\ per\ family\ member = \frac{Average\ family\ income}{Average\ family\ size}$$

$Average\ income\ per\ family\ member = \frac{1000}{4} = K250$ or $13.5 per person per month

In terms of family expenditure on food per day, which is a direct measure of level of poverty, it was found that the majority (40.6%) spend K60, followed by those who spend K61 - K80 (23%) and K81 - K100 (15%). The results indicate that 78.2% spend between K60 and K100. Table 3 shows the frequency and percent of the rest of the classes.

Table 3: Level of family expenditure per day

Description	Frequency	Percent	Valid Percent	Cumulative Percent
k60	39	40.6	49.4	49.4
k61-k80	22	22.9	27.8	77.2
k81-k100	14	14.6	17.7	94.9
k101-k120	3	3.1	3.8	98.7
Above k181	1	1	1.3	100
Total	79	82.3	100	
System	17	17.7		
	96	100		

The results above indicate that the average expenditure per class is as follows:

$$Average\ expenditure/person = \frac{family\ expenditure\ per\ day}{average\ family\ size}$$

$$Average\ expenditure/person\,(K60) = \frac{60}{4} = K15$$

A review of the Bank of Zambia foreign exchange rates over a 574-day period from April 5th 2023 to January 1st 2021 established the average exchange rate to be K18.5 per US$1. Based on this exchange rate, expenditure per person was computed as follows:

$$Average\ expenditure/person\,(US\ \$) = \frac{expenditure\ in\ Kwacha\ (15)}{foreign\ exchange\ rate\ (18.5)} = \$0.81$$

This result indicates that 40.6% of the households live under $0.81 per day per person which is way below the Seventh National Development Plan poverty datum line of $1.09 and the international extreme poverty datum line of living on less than $2.15 per adult person per day. This implies that 40.6% of the households live in extreme poverty which the Sustainable Development Goal Number 1 (No Poverty) seeks to eradicate by 2030.

Further, 23% of the households live under $1.081 per person per day as shown in the calculation below:

$$Average\ expenditure/person\,(US\ \$) = \frac{expenditure\ in\ Kwacha\ (80/4)}{foreign\ exchange\ rate\ (18.5)} = \$1.081$$

Lastly, 15% of the households live under $1.35 which is still below the international extreme poverty datum line of $2.15 per adult person per day and only one household live under $1.35 per person per day which was computed as shown below.

$$Average\ expenditure/person\ (US\ \$) = \frac{expenditure\ in\ Kwacha\ (100/4)}{foreign\ exchange\ rate\ (18.5)} = \$1.35$$

Perception of Food Security

The perception of food security measures the level of food stress where less food relates to food stress while enough food relates to food security. Using Table 1, it was found that the majority of the respondents slightly disagreed to always having what to eat, they disagreed to eating the kinds of food which they wanted, slightly disagreed to eating because food was available. On the last aspect of accessibility, they were neutral. These results indicate that the participating households were not food secure. The means, standard deviation and ranges are highlighted in Table 4.

Table 4: Mean, standard deviation, range and category of the food security perception

Description	N	Mean	Std. Deviation	Range	Category
We always had what to eat (1.1)	95	3.4	2.029	2.957-3.14	Slightly disagree
We ate the kinds of food we wanted (1.2)	95	2.69	1.585	1.957-2.57	Disagree
We always ate because food was	95	3.57	1.877	2.957-3.14	Slightly disagree
We always ate because food was accessible (1.4)	95	4.31	1.924	3.914-4.77	Neutral
Valid N (listwise)	95				

Reasons for not having food

The respondents slightly agreed that they do not eat enough food because of lack of money to buy but the market for trading is near and that they are not on diet. The money in this respect is needed to buy alternative food stuffs as well as food stuff that they may need at that particular time. The means, standard deviation and ranges are highlighted in Table 5.

Table 5: Mean, standard deviation, range and category for reasons for not eating enough food

Description	N	Mean	Std. Deviation	Range	Category
Lack of money (2.1)	95	4.93	1.925	4.871-5.729	Slightly Agree
Far off market (2.2)	95	2.4	1.483	1.957-2.857	Disagree
On diet (2.3)	95	2.25	1.22	1.957-2.857	Disagree
Valid N (listwise)	95				

Reasons for eating less food

This aspect measures the reasons for food stress. The major reason for eating less food was found to be lack of money which is consistent with the reason for not having food. This is because the majority of the respondents slightly agreed to this question. However, the market been far off and being on a diet were not among the reasons for eating less food. In terms of unavailability of wanted nutritious food, the resulting responses were neutral. The means, standard deviation and ranges are highlighted in Table 6.

Table 6: Mean, standard deviation, range and category for reasons for eating less food

Description	N	Mean	Std. Deviation	Range	Category
Not having enough money (3.1)	95	4.99	1.825	4.871-5.728	Slightly Agree
Far-off market (3.2)	95	2.34	1.441	1.957-2.857	Disagree
Dieting, choosing what to eat (3.3)	95	2.36	1.48	1.957-2.857	Disagree
Unavailability of wanted food (3.4)	94	4.34	2.092	3.914-4.771	Neutral
Unavailability of nutritious food (3.5)	95	4.23	1.949	3.914-4.772	Neutral
Valid N (listwise)	94				

Perception of limited food intake

The perception of limited food intake measures the interventions against food stress which are aimed at prolonging food availability in order to avert starvation. The results reveal that sometimes adults don't eat whole day because of lack of food (slightly agree), food portions for children are reduced due to limited food (agree), children skip meals to save food which happens often (slightly agree). The means, standard deviation and ranges are highlighted in Table 7.

Table 7: Mean, standard deviation, range and category of the perception of limited food intake

Description	N	Mean	Std. Deviation	Range	Category
Sometimes adults don't eat whole day for lack of food (4.1)	94	5.04	1.771	4.871-5.728	Slightly Agree
Food portion for children are reduced due to limitation (4.2)	92	5.7	1.365	4.871-5.729	Agree
Children skip meals to save food (4.3)	94	4.82	1.685	4.871-5.729	Slightly Agree
Children skipping meals happen often (4.4)	94	4.86	1.644	4.871-5.730	Slightly Agree
Sometimes Children don't eat whole day (4.5)	94	3.93	2.007	3.914-4.771	Neutral
Valid N (listwise)	92				

Perception of limited food, limited access and limited money

The three aspects of limited food, limited access and limited money are complimentary and can be attributed to food stress singularly or severally. The results on these three aspects indicate that the households in the research area run out of food (slightly agree), food doesn't last (agree), eat same type of food (slightly agree) and rely on low cost food (slightly agree).

Further, it was found that in these households, food is spared for children to prolong it (Slightly agree), children are given limited food and not balanced (slightly agree). The households agreed that children do not eat enough meals, are served with limited portions and the entire families eat less than they should in order to save food for prolonged periods.

These findings are a clear indication that households in the research area are food insecure and have limited interventions to minimize their food insecurity situation. The food insecurity situation is extended to children whose portions are reduced and often eat less food than they should. In addition, members of the household get hungry but eat nothing due to lack or limited food. The means, standard deviation and ranges are highlighted in Table 8.

Table 8: Mean, standard deviation, range and category of the perception on limited food, limited access and limited money

Description	N	Mean	Std. Deviation	Range	Category
Food runs out (5.1)	95	5.05	1.74	4.48-5.34	Slightly Agree
Food doesn't last (5.2)	94	5.35	1.591	5.35-6.21	Agree
We eat same type of food (5.3)	95	4.68	1.991	4.48-5.34	Slightly Agree
We rely on low cost food (5.4)	95	5.4	1.54	5.35-6.21	Agree
We usually spare food to feed children (5.5)	95	5.91	1.353	4.48-5.34	Slightly Agree
We don't feed children a balanced diet (5.6)	94	4.95	1.75	4.48-5.34	Slightly Agree
Children don't eat enough due to limited food (5.7))	95	5.55	1.479	5.35-6.21	Agree
We reduced meal portions to save food (5.8)	95	5.98	1.101	5.35-6.21	Agree

Description	N	Mean	Std. Deviation	Range	Category
We eat less than we should due to limited food (5.9)	95	5.45	1.435	5.35-6.21	Agree
Sometimes we are hungry but don't eat because there is no food (5.10)	95	4.79	2.128	4.48-5.34	Slightly Agree
Sometimes we get hungry but find nothing to eat at home (5.11)	95	4.83	2.035	4.48-5.34	Slightly Agree
Valid N (listwise)	93				

Monthly Food Composition

The monthly food consumption of the respondents indicated that most of them consume vegetables, beans, maize, sweet potatoes, rice, cereals, groundnuts, eggs, Irish potatoes, sorghum, chicken and bananas as part of their monthly diet and these food stuffs make up 66% of the diet. The next most common food stuff includes soya beans, wheat, meat, dried kapenta, beef, cassava, milk and fish all of which add to 25%. The rest of the food stuff make up 10% only and include goat meat, millet, sugar cane, butter and fruits.

Of these food stuffs, groundnuts and cassava were consumed as a result of cultural influences, 13% and 12%, respectively, followed by maize (10%), goat (10%), chicken (9%), sweet potatoes (6%) and beans (5.4%), and collectively represent 64%. The monthly food composition is shown in the Pareto curve in

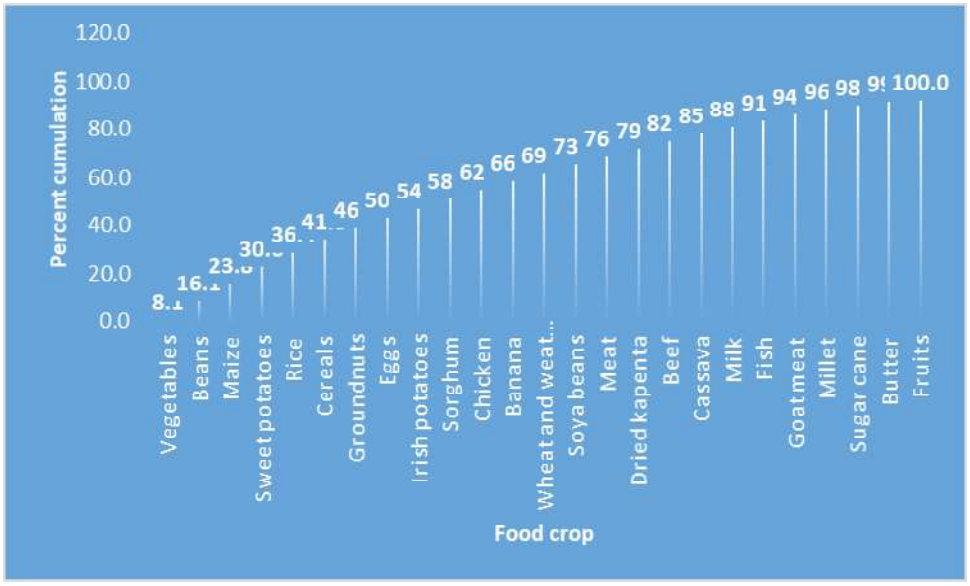

Figure 1: Pareto curve of food composition of the households

This finding indicates that there is a level of food diversity which Namulondo and Bashaasha (2021) found to be strongly correlated to household dietary diversity.

Food Assistance

The food assistance aspect measures the level of support in terms of food crop and livestock support that is provided by both state and non-state actors. It was found that the respondents do not receive food security packs from government or non-governmental organisations, they do not receive food crops or livestock through the pass-on facility from the Ministries of Agriculture and Fisheries and Livestock. This predicament may explain why the majority of the respondents are extremely poor despite living less than 50 kilometers from the capital city. The means, standard deviation and ranges are highlighted in Table 9.

Table 9: Mean, standard deviation, range and category of food assistance

Description	N	Mean	Std. Deviation	Range	Category
I receive food pack from government (10.8)	90	1.6	0.7	1.00-1.86	Strongly Disagree
I receive food crop through pass-on facility (10.9)	92	1.73	0.743	1.00-1.86	Strongly Disagree
I receive livestock through pass-on facility (10.10)	92	1.82	0.851	1.00-1.86	Strongly Disagree
I receive food pack from non-government (10.11)	92	1.87	0.986	1.00-1.86	Strongly Disagree
Valid N (listwise)	73				

Economic activities of Households

The economic activities of the respondents, apart from trading, ranged from farming only to working off-farm. Given that the research area was a rural setup, the researchers expected most traders to engage in trading which is based on own agricultural output. On the contrary, it was found that the majority (25%) of the traders engaged in buying and reselling the agricultural products in formal markets, 22% engaged in farming and selling at roadside markets, 20% engaged in farming and roadside selling and 18% engaged in farming and selling at the formal market areas. This level of activities indicate that 85% of the respondents were engaged in some form of entrepreneurial activities of which the majority (46.9%) were pure traders who buy to resell and 37.5% were engaged in farming and selling.

The minority of the respondents (2%) engage in farming only, 4% are in formal employment and undertake farming, 6% are in formal employment and undertake selling. The rest of the frequencies and associated percent of the activities are highlighted in Table 10.

Table 10: Frequency and percent of activities of respondents in the research location

Description	N	Mean	Std. Deviation	Range	Category
Farming only	2	2.1	2.2	2.2	
Farming and roadside selling	19	19.8	20.4	22.6	
Farming and selling at market	17	17.7	18.3	40.9	
Buying and selling at roadside	21	21.9	22.6	63.4	
Buying and selling at market	24	25	25.8	89.2	
Working and farming	4	4.2	4.3	93.5	
Working and selling	6	6.3	6.5	100	
Total	93	96.9	100		
System	3	3.1			
Total	96	100			

Purpose of economic activities

This aspect was designed to measure the entrepreneurship intention of the respondents. It was found that 33.3% had deliberate intention to engage in farming for home consumption and sell the excess, 18.8% engaged in farming to sell and 17.7% engaged in farming to sell and consume the excess. These results show that 69.8% of the respondents engage in farming activities with entrepreneurial intentions. Table 11 shows the frequencies and percent of the rest of the variables.

Table 11: Frequencies and percent of the responses on purpose of activities

Description	N	Mean	Std. Deviation	Range	Category
Farm for home consumption	18	18.8	21.2	21.2	
Farm for home consumption and sale excess	32	33.3	37.6	58.8	
Farm for selling and consume excess	17	17.7	20	78.8	
Farm for selling only	18	18.8	21.2	100	
Total	85	88.5	100		
System	11	11.5			
Total	96	100			

Traded Food Types and Food Security Crops

The most traded food stuff was found to be vegetables (31%), followed by grains (19%), potatoes were at 11% and lentils, fruits and meats each obtained 6%. Food security crops represent crops which are traded and consumed. Trading helps the beneficiary to receive income which is then used to purchase requirements from a nearby market or trading area in order to supplement existing food stuff. It was found that maize (17%), beans (16%), fresh vegetables (15%), groundnuts (12%) and fruits (11%) were the top five food crops which are traded and consumed in the research area. These five food crops make up the vital few at 70% of the food crops while rice, cassava, sweet potatoes, soya beans, millet and bananas make up the trivial many food crops. Figure 2 shows the Pareto curve of the vital few and trivial many food crops.

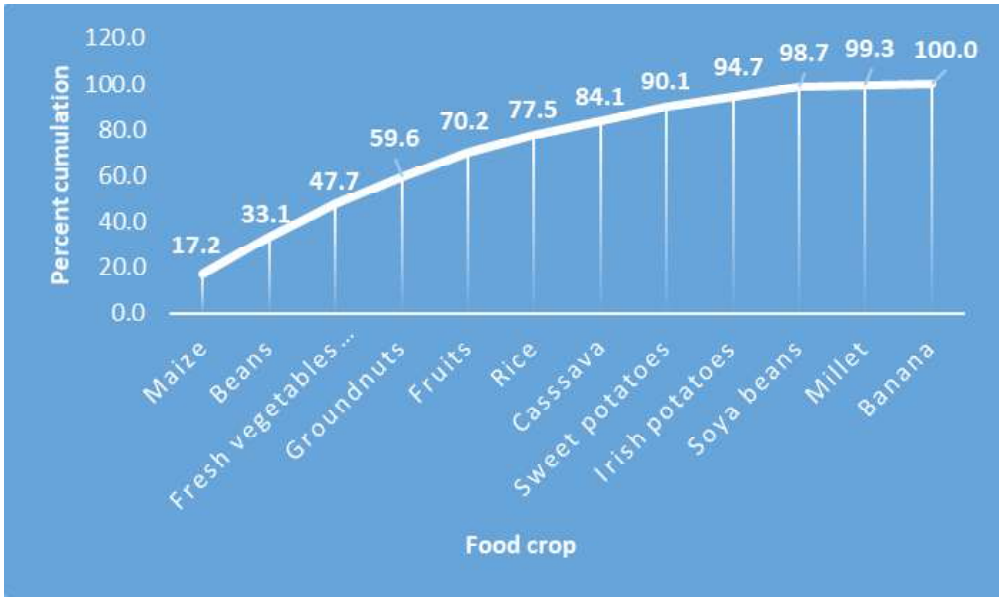

Figure 2: Pareto curve of the food security food crops

Entrepreneurship Orientation

The respondents exhibited entrepreneurial characteristics as shown from the resulting responses on competitiveness (Slightly Agree), pro-activeness (Agree), aggressive (Agree) and autonomy (Agree). However, two important characteristics of entrepreneurship namely innovation and risk taking yielded disagree and slightly disagree, respectively. These results indicate that the respondents possess the critical entrepreneurial orientation characteristics which were propounded by Sang and Suzanne (2000) to be autonomy, competitive, aggression and proactivity. The means, standard deviation and ranges are highlighted in Table 12.

Table 12: Mean, standard deviation, range and category of entrepreneurship orientation

Description	N	Mean	Std. Deviation	Range	Category
I strive to do better under competition (competitiveness) (11.1)	94	4.83	2.042	4.48-5.34	Slightly Agree
I was the first to start this kind of business (innovation) (11.2)	95	2.06	1.367	1.87-2.73	Disagree
I am bold with my business (risk) (11.3)	95	2.91	1.828	2.74-3.60	Slightly Disagree
I monitor my business in order to take necessary action timely (proactive) (11.4)	95	5.8	1.163	5.35-6.21	Agree
I like to take on challenges (Aggressiveness) (11.5)	95	6.2	6.327	5.35-6.21	Agree
I usually make decisions on my own (autonomy) (11.6)	88	5.77	1.08	5.35-6.21	Agree
I am quick to think of alternative actions when my business is going wrong (risk) (11.7)	95	5.86	1.006	5.35-6.21	Agree
Valid N (listwise)	88				

Access to finance and financial inclusion

The access to finance and financial inclusion of the households indicate that they have limited access to commercial banks (Slightly Disagree), could not tell if they had access to non-bank financial institution (Neutral), have no access to credit (Slightly Disagree), disagree about the presence of village banking, hence no participation.

However, they indicated that they use mobile money (Slightly Agree) to perform financial transactions and the connectivity network good (Agree), and do not receive social cash transfer from government (Disagree). These results imply that the level of financial inclusion of the households is limited to mobile money. The means, standard deviation and ranges are highlighted in Table 13.

Table 13: Mean, standard deviation, range and category of the access to finance and financial inclusion

Description	N	Mean	Std. Deviation	Range	Category
I have access to a Bank (8.1)	95	3.38	2.348	2.74-3.60	Slightly Disagree
The Bank is far (8.2)	94	2.14	1.001	1.87-2.73	Disagree
I have access to financial institution other than Bank (8.3)	95	3.78	2.232	3.61-4.47	Neutral
Village banking available but no a member (8.4)	95	5.33	1.813	4.48-5.34	Slightly Agree
Village banking is available and I am a member (8.5)	95	2.13	1.532	1.87-2.73	Disagree
I use mobile money for my financial transactions (8.6)	94	5.01	2.035	4.48-5.34	Slightly Agree
Network for mobile money is good (8.7)	94	5.51	1.522	5.35-6.21	Agree
I have access to credit (8.8)	95	3.45	2.182	2.74-3.60	Slightly Disagree
I am a beneficiary of social cash transfer (8.9)	95	2.15	1.429	1.87-2.73	Disagree
Valid N (listwise)	93				

Discussion

This study has shown that poverty and food insecurity affect and complement each other in a way that poverty may lead to food insecurity because the population will not have sufficient income to buy all the food stuff they need to meet their dietary intake of up to 2,100 calories per person per day, as stated by the World Food Programme (2021a). On the other hand, food insecurity may force households to use all the money they have on stock piling food and end up without enough money to buy supplementary food stuff which is necessary for a balanced diet (Namulondo and Bashaasha, 2021).

Notwithstanding the poverty and food insecurity predicament which the population in the research area is faced with, the population receives no support from state and non-state actors in terms of food supplements or empowerment programmes. This development exacerbates the food stress situation and makes life unbearable for the population.

The challenges outlined above have impeded the ability of the population to exhale in their livelihood but not enough to absolutely frustrate their entrepreneurial ability and orientation. The population in the research area has exhibited perseverance to the extent that, with time, are able to conduct their economic activities with the necessary business aggression, compete fairly well, are proactive and practice autonomy in their business activities. However, the traders are stunted in terms of business growth because they have no access to credit which is consistent with findings by Bridges *et al.* (2003), corroborated by Kabukuru and Afande (2016) who stated that access to finance for entrepreneurs has continued to be the biggest challenge largely due to lack of collateral.

Conclusion

This study has demonstrated that poverty and food insecurity continue to be critical challenges affecting rural development and impede the ability of people to improve their livelihood. Using pessimistic calculations for family size and optimistic calculations on level of income and family expenditure, it has been established that the majority of the households in the research area are extremely poor and remain food insecure. The main contributing factor to this predicament is low income and thus inadequate funds and lack of support from the state and non-state actors.

The households embark on entrepreneurial activities in an attempt to mitigate their suffering and this development has led to the development of entrepreneurial orientation characteristics of competition, aggression, proactivity and autonomy.

Therefore, it appears that the households can do better if they received booster and empowerment support in their trading and farming activities since they have persisted and kept active their trading and farming engagements on their own.

Statement of Competing Interests

The authors did not have any competing interests.

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