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## EXAMINING LIVELIHOOD STATUS OF INFORMAL FOOD TRADERS POST-COVID-19 PANDEMIC IN POLOKWANE LOCAL MUNICIPALITY, SOUTH AFRICA

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### Abstract

*This study applied the Livelihood Assessment Index (LAI) to evaluate the extent to which informal food traders accessed and utilised livelihood capital assets post-COVID-19. Primary data were collected through face-to-face interviews with 120 traders in Polokwane Local Municipality using purposive sampling. Among the five livelihood capitals, physical capital ranked the highest, with an LAI value of 0.60, reflecting adequate access to basic infrastructure and physical goods. Conversely, financial capital ranked the lowest, with an LAI value of 0.28, reflecting limited access to financial resources. The overall livelihood status was low, with an LAI value of 0.44, suggesting limited access to the livelihood capital assets needed for recovery and resilience post-COVID-19. Therefore, policy interventions should prioritise strengthening human and financial capital, improving natural capital, expanding physical capital, and boosting social capital to enhance recovery and sustainability for informal food traders.*

**Keywords:** COVID-19; informal sector; food supply; livelihoods; South Africa

**JEL Codes:** Q18, E26, O15

### 1. Introduction

The informal food trade sector is essential in tackling the problem of insufficient livelihoods, particularly in developing nations (Takaza & Chitereka, 2022). Additionally, this sector, which is a subset of the informal sector, contributes significantly to gross domestic product (GDP), poverty reduction, the provision of affordable goods and services, and the creation of a market for small-scale farmers (Mago, 2018; Kabonga et al., 2023). Despite its importance, the informal trading sector has been overlooked when enforcing COVID-19 regulations and restrictions (Rwafa-Ponela et al., 2022). Even though food was regarded as a vital service during South Africa's earliest lockdown restrictions, informal (street vending) traders were prohibited from operating their businesses since they were not considered essential service providers (Wegerif, 2020).

The enforced restrictions also limited informal traders from accessing livelihood capital assets (financial, human, natural, social, and physical resources) that they rely on to support their livelihoods (Haque, 2021), thereby negatively affecting their overall livelihood status. In particular, informal traders whose livelihoods depend on daily income were the most affected by the imposed lockdown restrictions (Khambule, 2020). Moreover, the restrictions resulted in informal traders encountering various challenges, such as income loss, running out of savings, inability to afford their cost of living, and delays in paying employees (Khambule, 2022). Even before the pandemic, informal traders faced numerous challenges, such as conflicts with local authorities, strict regulations, limited capital, entrepreneurial skills, trading spots, and access to basic infrastructure (Rwafa-Ponela et al., 2022).

These pre-existing issues have been aggravated by the COVID-19 pandemic, which has left informal traders vulnerable (Haque, 2021). In response to criticism from civil society for neglecting the informal sector, the South African government permitted informal traders to operate in early April 2020 (Skinner & Watson, 2021). However, initially, only informal traders selling fruits and vegetables were allowed to operate (Rwafa-Ponela et al., 2022). In May 2020, permission was extended to include those selling any takeaway products. Furthermore, in June 2020, the economy was reopened, and the regulations were relaxed further to allow onsite consumption of food.

Several studies have investigated the livelihood status of various individuals. However, most studies have focused on small-scale farmers (Sarwer et al., 2016; Ahmed & Mustapha, 2020), with only a few focusing on informal traders (Arisanty et al., 2020; Haque, 2021; Takaza & Chitereka, 2022). Moreover, studies that have focused on informal traders have been conducted in Indonesia (Arisanty et al., 2020), Bangladesh (Haque, 2021), and Zimbabwe (Takaza & Chitereka, 2022). As such, they cannot provide evidence of how informal food traders in South Africa are utilising their existing capital assets (financial, human, natural, social, and physical resources) to enhance their livelihoods. Hence, the current study intends to address this literature gap by investigating how informal food traders in South Africa use capital assets at their disposal to cope with and recover from the long-term effects of the COVID-19 pandemic and improve their livelihoods. The findings serve to assist the South African government in allocating resources to improve informal food traders' access to the capital assets needed for recovery and sustainability post-COVID-19.

The rest of the paper is structured as follows. Section 2 defines key concepts underlying the study and reviews the literature on livelihood status. Section 3 outlines the methods used to collect and analyse data. Section 4 discusses the findings, and Section 5 comprises conclusions, covering summary, policy recommendations, and suggestions for further research.

## **2. Literature Review**

### **2.1 Definition of Key Concepts**

**Informal food traders** are individuals who often run unregistered businesses, selling a wide range of food commodities, including grains, prepared meals, beverages, fruits, vegetables, and snacks (Nyanga et al., 2020).

**Livelihood** refers to access (facilitated by institutions and social relationships) to abilities, assets (human, natural, physical, social, and financial), and activities required collectively to improve the standard of living. A livelihood is considered sustainable if it can recover and withstand shocks and stresses and preserve or improve its assets and capacities in the present and future without compromising natural resources (Chambers & Conway, 1992).

**Livelihood status** refers to the ability of informal food traders to sustainably obtain resources and money to meet their necessities by accessing and utilising five types of

livelihood capital, namely, human, social, physical, natural, and financial (Ahmed & Mustapha, 2020; Rahman et al., 2021; Tikadar et al., 2022).

**Post-COVID-19** refers to the period after the lifting of lockdown restrictions, the administration of vaccines, and the end of reported COVID-19 cases. COVID-19, caused by the SARS-CoV-2 virus, was first detected on December 31, 2019, in Wuhan, China (World Health Organisation, 2023). South Africa reported its first case on March 5, 2020 (Stiegler & Bouchard, 2020). Owing to its rapid spread, the South African government declared a National State of Disaster on March 15, 2020, to protect citizens and manage the crisis (South African Government, 2020). The government also implemented lockdowns with five alert levels, adjusting them from March 2020 to April 2022 on the basis of social and economic factors (South African Government, 2024). A vaccine rollout began in 2021 (South African Government, 2021), and the National State of Disaster was lifted on April 5, 2022 (South African Government, 2022).

## **2.2 Review of Related Studies**

Several studies have measured the livelihood status of individuals in developing countries. This review focuses primarily on small-scale farmers due to a dearth of studies on the livelihood status of informal traders. Therefore, this review was conducted to highlight key findings from those studies and to identify existing gaps in the literature.

The key findings from previous studies on overall livelihood status can be abstracted in two points, as follows. First, the LAI is the general tool used to measure the livelihood status of individuals. This is due to its ability to measure the extent to which vulnerable individuals can sustainably access and use five capital assets, namely, financial, human, physical, social, and natural capital, to cope with shocks and meet their needs (Ahmed & Mustapha, 2020; Rahman et al., 2021; Tikadar et al., 2022). Hence, it has been used in the literature to evaluate the livelihood status of small-scale farmers (Ahmed & Mustapha, 2020; Rahman et al., 2021; Tikadar et al., 2022) and street vendors, including women traders (Arisanty et al., 2020; Haque, 2021).

Second, studies conducted both outside and within COVID-19 settings have revealed low livelihood statuses among small-scale farmers (Rahman et al., 2021; Tikadar et al., 2022) and street vendors, including women traders (Arisanty et al., 2020; Haque, 2021). Exceptions include studies by Sarwer et al. (2016) and Ahmed and Mustapha (2020). Specifically, Sarwer et al. (2016) reported that 94% of rural fish farmers in Bangladesh reported improved livelihood status due to fish farming. Additionally, Ahmed and Mustapha (2020) reported that the majority (50.9%) of cowpea smallholder farmers in Nigeria exhibited medium livelihood status. Studies conducted outside the COVID-19 setting have linked low livelihood status to the socio-economic conditions of the target population. In contrast, studies within the COVID-19 setting attributed low livelihood status to lockdown restrictions that limited movement, disrupted economic activities, and negatively impacted livelihoods (Haque, 2021; Rahman et al., 2021).

A review of previous studies on livelihood status per livelihood capital was also conducted to highlight the main findings and literature gaps.

The key findings from those studies can be summarised in three points, as follows. The first point is that across all studies, physical capital consistently ranked the highest among the five livelihood capital assets (Arisanty et al., 2020; Haque, 2021; Rahman et al., 2021; Tikadar et al., 2022). This implies that despite their low livelihood status, the small-scale farmers and street vendors in these studies had access to the basic infrastructure and physical goods needed to support their livelihoods. In other words, although COVID-19 has led to a decline in the livelihood status of street vendors (Haque, 2021) and shrimp farmers (Rahman et al., 2021) in Bangladesh, they accessed and used basic infrastructure and physical goods to support their

livelihoods during the pandemic. However, in a study by Ahmed et al. (2021), physical capital was the second lowest due to limited access to and use of fishing gear, nets, and other equipment (for example, dry racks, space, and scissors).

The second point is that financial capital consistently ranked the lowest among the five livelihood capital assets across the studies (Arisanty et al., 2020; Ahmed et al., 2021; Haque, 2021; Rahman et al., 2021; Tikadar et al., 2022). This implies that small-scale farmers and street vendors in previous studies had limited access to the financial resources required to deal with shocks. Additionally, the low ranking of financial capital is associated with COVID-19 lockdown restrictions, which restricted movements and street vending activities, resulting in reduced foot traffic and consumer spending and, subsequently, a decline in sales and income. Additionally, loss of savings and limited access to formal loans were some of the drivers of low financial capital status during the COVID-19 pandemic (Haque, 2021; Khambule, 2022).

The third point is that there was a decline in most of the livelihood capital indices, resulting in overall low livelihood status for small-scale farmers and street vendors. For example, Rahman et al. (2021) reported that there was a decline in the human, physical, financial, social and natural capital status of shrimp farmers in Bangladesh due to lockdown restrictions, which restricted movement and disrupted economic activities, resulting in overall low livelihood status. Haque (2021) also reported that COVID-19 led to a decline in the human, physical and capital status of street vendors in Bangladesh. However, there was an increase in social capital due to an increase in support from relatives, the use of loans from relatives, connections with community leaders, and engagement with societal organisations. Moreover, natural capital status has remained the same due to consistent access to safe drinking water, stable proximity to water sources, and unaltered patterns of land ownership..

Overall, two literature gaps have been identified from the review of previous studies on livelihood status. Firstly, most of the studies on livelihood status have focused on small-scale farmers (Sarwer et al., 2016; Ahmed & Mustapha, 2020; Arisanty et al., 2020; Rahman et al., 2021; Tikadar et al., 2022), with only two studies focusing on informal traders (Arisanty et al., 2020; Haque, 2021). Secondly, studies that focused on informal traders were conducted outside of South Africa (Arisanty et al., 2020; Haque, 2021). As a result, the reviewed studies on livelihood status do not provide evidence of the livelihood status of informal food traders in South Africa, particularly in the Polokwane Local Municipality. This study, therefore, contributes to the existing body of literature by examining the livelihood status of informal food traders post-COVID-19 pandemic. The findings aim to assist the government in better-allocating resources to improve informal food traders' access to the capital assets needed for recovery and sustainability post-COVID-19.

### **3. Research Methods**

#### **3.1 Study Area**

The study was conducted in selected areas of Polokwane Local Municipality, Capricorn District, Limpopo Province, South Africa. Polokwane, the capital and economic hub of Limpopo, was chosen for its diverse economy, including social services, finance, retail, transportation, manufacturing, and mining sectors (Municipalities of South Africa, 2023). The significance of the informal trade economy in Polokwane Local Municipality, particularly in providing income for many, further justified its selection as the study area (Polokwane Local Municipality, 2023).

### 3.2 Sampling

The study focused on eight areas with a high concentration of informal food traders: Mankweng Unit A, Paledi Mall, Polokwane Taxi Rank, Church Street, Kruger Street, Market Street, Bok Street, and Landros Mare Street. Only informal street vendors involved in food trading (snacks, fruits, vegetables, and prepared food) were included, as these activities predominates street vending activities (WIEGO, 2020). For this reason, purposive sampling was used to select these vendors, who were identified through site walkthroughs, owing to a lack of a database on informal food traders. A sample size of 120 vendors was chosen, ensuring data validity for econometric analysis (Ganti, 2023).

### 3.3 Data Collection

Face-to-face interviews were conducted via structured questionnaires. The questionnaire was pretested with 12 respondents, following the U.S. Government Accountability Office (2019) guidelines, to identify errors and assess comprehension. These respondents were excluded from the final sample of 120 informal food traders. The questionnaire, which included questions on the livelihood status of vendors, was refined on the basis of the pre-test feedback. Data collection occurred after the COVID-19 pandemic, that is, from January 20 to March 20, 2024, after the COVID-19 restrictions were lifted and the informal sector was fully operational.

### 3.4 Empirical Analysis

The livelihood assessment index (LAI) was adopted to investigate the livelihood status of informal food traders by following the work of Tikadar et al. (2022), which was originally adapted from the sustainable framework of the Department for International Development (2000). The LAI consists of five types of livelihood capital, namely, human, natural, physical, financial, and social capital, which informal traders can utilise to recover from and cope with the aftermath of COVID-19 while sustaining their livelihoods. As such, this LAI tool examines informal food traders' ability to access and use their livelihood capitals, which are required for recovery and sustainability post-COVID-19. The informal food traders' livelihood status can be specified as follows (Tikadar et al., 2022):

$$\text{Livelihood of informal food traders} = f(\text{human, financial, physical, natural, and social capital}) \quad (1)$$

Table 1 provides the indicators along with a description of how each indicator was quantified under the five capitals. These indicators measure the livelihood status of informal food traders and were selected on the basis of previously published studies. On the other hand, equal weighting was used to estimate the five capital indicators. Because each of the indicators was quantified using a different unit and scale, standardisation was needed. This was done via equation (2):

$$\text{Index}_s = \frac{S - S_{\min}}{S_{\max} - S_{\min}} \quad (2)$$

where  $S$  stands for the indicator's initial value;  $S_{\max}$  denotes the maximum value; and  $S_{\min}$  denotes the minimum values, which is 0 and 100 for percentage-based indicators. Equation (3) was used to estimate the average value of each capital after standardisation:

$$M_{cj} = \frac{\sum_{i=1}^n \text{Index}_{si}}{n} \quad (3)$$

where  $M_{cj}$  denotes the value of a single significant capital  $j$ ,  $\text{Index}_{si}$  is the single indicator's index, and  $n$  denotes the overall capital's number of indicators. Equation (4) was used to calculate the weighted average of the LAI:

$$\text{LAI} = \frac{\sum_{i=1}^5 W_{mj} M_{cj}}{\sum_{i=1}^5 W_{mj}} \quad (4)$$

Equation (4) can be written as Equation (5) below:

$$\text{LAI} = \frac{W_H H_C + W_F F_C + W_P P_C + W_N N_C + W_S S_C}{W_H + W_F + W_P + W_N + W_S} \quad (5)$$

where LAI denotes the livelihood assessment index;  $W_{mj}$  is the weightage of component  $j$ ;  $W_H$ ,  $W_F$ ,  $W_P$ ,  $W_N$ , and  $W_S$  denote the weight values for human capital, financial capital, physical capital, natural capital, and social capital, respectively; and  $H_C$ ,  $F_C$ ,  $P_C$ ,  $N_C$ , and  $S_C$  are the index values of human, financial, physical, natural, and social capital, respectively (Tikadar et al., 2022). Human capital includes health ( $H_{He}$ ), experience ( $H_{Ex}$ ), labour ( $H_{La}$ ), training ( $H_{Tr}$ ), formal education ( $H_{Fa}$ ), and informal education ( $H_{In}$ ), and it is calculated as follows:

$$\text{Human capital index} = \frac{W_{He} H_{He} + W_{Ex} H_{Ex} + W_{La} H_{La} + W_{Tr} H_{Tr} + W_{Fa} H_{Fa} + W_{In} H_{In}}{W_{He} + W_{Ex} + W_{La} + W_{Tr} + W_{Fa} + W_{In}} \quad (6)$$

where  $W_{He}$ ,  $W_{Ex}$ ,  $W_{La}$ ,  $W_{Tr}$ ,  $W_{Fa}$  and where  $W_{In}$  represents the weight for health ( $H_{He}$ ), experience ( $H_{Ex}$ ), labour ( $H_{La}$ ), training ( $H_{Tr}$ ), formal education ( $H_{Fa}$ ) and informal education ( $H_{In}$ ). Financial capital includes savings ( $F_{Sa}$ ), income ( $F_{In}$ ), formal loans ( $F_{Fo}$ ), informal loans ( $F_{Io}$ ), pensions ( $F_{Pe}$ ), social grants ( $F_{So}$ ), and insurance ( $F_{Is}$ ), and it was calculated as follows:

$$\text{Financial capital index} = \frac{W_{Sa} F_{Sa} + W_{In} F_{In} + W_{Fo} F_{Fo} + W_{Io} F_{Io} + W_{Pe} F_{Pe} + W_{So} F_{So} + W_{Is} F_{Is}}{W_{Sa} + W_{In} + W_{Fo} + W_{Io} + W_{Tr} + W_{Pe} + W_{So} + W_{Is}} \quad (7)$$

where  $W_{Sa}$ ,  $W_{In}$ ,  $W_{Fo}$ ,  $W_{Io}$ ,  $W_{Pe}$ ,  $W_{So}$ , and  $W_{Is}$  represent the weights for savings ( $F_{Sa}$ ), income ( $F_{In}$ ), formal loan ( $F_{Fo}$ ), informal loan ( $F_{Io}$ ), pension ( $F_{Pe}$ ), social grant ( $F_{So}$ ) and insurance ( $F_{Is}$ ). Physical capital includes storage facilities ( $P_{St}$ ), transport ( $P_{Tr}$ ), trading stalls ( $P_{Ta}$ ), public spaces ( $P_{Pb}$ ), trading licences ( $P_{Td}$ ), trading contracts ( $P_{Tc}$ ), cellphones ( $P_{Ce}$ ), housing status ( $P_{Hs}$ ), and electricity ( $P_{El}$ ), and it was calculated as follows:

$$\begin{aligned} & \text{Physical capital index} \\ & = \frac{W_{St} P_{St} + W_{Tr} P_{Tr} + W_{Ta} P_{Ta} + W_{Pb} P_{Pb} + W_{Td} P_{Td} + W_{Tc} P_{Tc} + W_{Ce} P_{Ce} + W_{Hs} P_{Hs} + W_{El} P_{El}}{W_{St} + W_{Tr} + W_{Ta} + W_{Pb} + W_{Td} + W_{Tc} + W_{Ce} + W_{Td} + W_{Hs} + W_{El}} \end{aligned} \quad (8)$$

where  $W_{St}$ ,  $W_{Tr}$ ,  $W_{Ta}$ ,  $W_{Pb}$ ,  $W_{Td}$ ,  $W_{Tc}$ ,  $W_{Ce}$ ,  $W_{Hs}$ , and  $W_{El}$  represent the weights of storage facilities ( $P_{St}$ ), transports ( $P_{Tr}$ ), trading stalls ( $P_{Ta}$ ), public space ( $P_{Pb}$ ), trading licences ( $P_{Td}$ ), trading contracts ( $P_{Tc}$ ), cellphones ( $P_{Ce}$ ), housing status ( $P_{Hs}$ ), and electricity ( $P_{El}$ ). Natural capital includes land ( $N_{La}$ ), livestock ( $N_{Li}$ ), and water ( $N_{Wa}$ ), and it was calculated as follows:

$$\text{Natural capital index} = \frac{W_{La}N_{La}+W_{Li}N_{Li}+W_{Wa}N_{Wa}}{W_{La}+W_{Li}+W_{Wa}} \quad (9)$$

where  $W_{La}, W_{Li}, W_{Wa}$  represents the weight for access to land ( $N_{La}$ ). Ownership of livestock ( $N_{Li}$ ) and access to safe drinking water ( $N_{Wa}$ ). Social capital includes membership in informal and formal organisations ( $S_{Me}$ ), trust in the organisation ( $S_{Tr}$ ), information sharing ( $S_{In}$ ), trust in institutions ( $S_{Tu}$ ), group savings clubs ( $S_{Gs}$ ), and opportunities to obtain assistance ( $S_{Op}$ ) and is calculated as follows:

$$\text{Social capital index} = \frac{W_{Me}S_{Me}+W_{Tr}S_{Tr}+W_{In}S_{In}+W_{Tu}S_{Tu}+W_{Gs}S_{Gs}+W_{Op}S_{Op}}{W_{Me}+W_{Tr}+W_{In}+W_{Tu}+W_{Gs}+W_{Op}} \quad (10)$$

where  $W_{Me}, W_{Tr}, W_{In}, W_{Tu}, W_{Gs}$ , and  $W_{Op}$  represent the weights of membership in informal and formal organisations ( $S_{Me}$ ), trust in the organisation ( $S_{Tr}$ ), information sharing ( $S_{In}$ ), trust in institutions ( $S_{Tu}$ ), group saving clubs ( $S_{Gs}$ ) and opportunities to obtain assistance ( $S_{Op}$ ). Table 1 provides indicators embedded in each form of livelihood capital, a description of how each indicator was quantified, and the source(s) of reference for each indicator.

**Table 1. Variables Used for LAI Analysis**

Livelihood capitals	Indicators	Description	References
<b>Human capital</b>	Health	Percentage of participants without chronic diseases	Hua et al. (2017); Munishi et al. (2021)
	Experience	Number of years of informal trading	Mbatha and Mlambo (2021)
	Labour	The number of people hired by the respondent	Hua et al. (2017); Ahmed et al. (2021)
	Training	Percentage of participants trained	Rodriguez and Walters (2017)
	Formal education	Percentage of participants with formal education	Mago (2018); Hua et al. (2017)
	Informal education	Percentage of participants with informal education	Mago (2018)
<b>Financial capital</b>	Savings	Percentage of participants who are saving	Mago (2018); Mhlanga and Ndhlovu (2020)
	Income	Amount per month (in rand)	Tikadar et al. (2022)
	Formal loan	Percentage of participants with access to formal loans	Ahmed et al. (2021)
	Informal loan	Percentage of participants with access to informal loans from sources such as friends, relatives, and loan sharks	Ahmed et al. (2021)
	Pension	Percentage of participants who receive pension funds	Mhlanga and Ndhlovu (2020)
	Social grant	Percentage of participants who are receiving a social grant	Neves and Du Toit (2013)
	Insurance	Percentage of participants who have insured their businesses	Kaushalya et al. (2014)
<b>Physical capital</b>	Storage facilities	Percentage of participants with access to storage facilities	Tikadar et al. (2022)
	Transports	Percentage of participants with access to public transport	Mbatha and Mlambo (2021); Munishi et al. (2021)

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	Trading stall	Percentage of participants who own trading stalls	Mbatha and Mlambo (2021); Munishi et al. (2021); Lefophane et al. (2022)
	Public space	Percentage of participants renting the public space they operate their business on	Mago (2018)
	Trading licence	Percentage of participants with trading licences/permits	Lefophane et al. (2022)
	Trading contract	Percentage of participants with contracts with the suppliers	Lefophane et al. (2022)
	Cellphones	Percentage of participants who use cellphones for their informal economic activities	Mago (2018)
	Housing status	Percentage of participants who own a concrete house	Tikadar et al. (2022)
	Electricity	Percentage of participants with access to electricity	Tikadar et al. (2022)
<b>Natural Capital</b>	Land	Percentage of participants who own and use the land for agricultural activities	Mago (2018)
	Livestock	Percentage of participants who raise livestock for trading	Tikadar et al. (2022)
	Water	Percentage of participants with access to safe drinking water	Tikadar et al. (2022)
<b>Social Capital</b>	Membership in informal and formal organisations including self-help groups	Percentage of participants who belong to a certain membership organisation	Mbatha and Mlambo (2021)
	Trust in organisation	Percentage of participants with trust in the organisation they belong to	Ahmed et al. (2021); Haque (2021)
	Information Sharing	Percentage of participants who share information within their organisation	Ahmed et al. (2021)
	Trust in institutions	Percentage of participants with trust in institutions	Ahmed et al. (2021); Haque (2021)
	The group saving club such as stokvel	Percentage of participants who participate in group saving clubs (for example, stokvels)	Tikadar et al. (2022)
	Opportunities to obtain assistance	Percentage of participants who receive assistance from family or friends, including financial support during crises or labour during busy periods	Hua et al. (2017)

**Source:** Adapted from Tikadar et al. (2022)

## 4. Results and Discussion

### 4.1 Human Capital Responses

Human capital refers to the knowledge and skills necessary to manage other livelihood assets (Arisanty et al., 2020; Mbatha & Mlambo, 2021). The key components include health, experience, labour, training, and education (Mago, 2018; Tikadar et al., 2022), which are critical drivers of the household economy (Arisanty et al., 2020). The findings related to human capital indicators among informal food traders are presented in Table 2.

**Table 2. Human Capital Responses**

Indicators	Description	Findings
Health	Percentage of participants without chronic diseases	91.7%
Experience	Number of years of informal trading (average)	11.18
Labour	The number of people hired by the respondent (average)	1
Training	Percentage of participants been trained	5.0%
Formal education	Percentage of participants with formal education	90%
Informal education	Percentage of participants with informal education	10%

**Source:** Computed using survey data (2024)

When asked about chronic diseases that might impede their ability to operate their businesses, 91.7% of the respondents reported having no chronic illnesses. This indicates that the majority of informal food traders in the sample were in good health, with low susceptibility to infections and diseases, which facilitated their business activities. These results are consistent with those of Mago (2018), who reported that 95.2% of informal traders in South Africa’s Eastern Cape Province did not suffer from illnesses that hindered their work. In contrast, Tikadar et al. (2018) reported that Bangladeshi fishermen had a high frequency of disease, contributing to a low human capital index of 0.31.

Experience plays a crucial role in achieving desired livelihood outcomes, such as success in informal trading (Mbatha & Mlambo, 2021). The respondents had an average of 11.8 years of experience in their businesses, aligning with Haque (2021), who reported an average of 11.5 years of experience among street vendors in Bangladesh. This suggests that most of the informal traders in the study area had the necessary experience to build a customer base and loyalty, enhancing their ability to earn higher incomes and sustain their businesses post-COVID-19.

Although the labour force is an important production factor, most of the informal food traders did not hire additional labourers, with an average of just one labour force per business. This is likely because informal trading typically involves small-scale business activities (Mago, 2018), where the scale of operations does not require a large workforce.

Training is essential for increasing competency, knowledge, and business skills (Rodriguez & Walters, 2017). However, only 5% of the respondents had received training related to operating their businesses. This finding is consistent with that of Tikadar et al. (2022), who reported that fishermen in Bangladesh lacked training in income-generating activities. This suggests that most of the informal traders might not have possessed the skills needed for effective marketing, business management, finance, and relationship building with customers and suppliers.

Despite the limited training, (90%) of the respondents had received formal education, whereas only a small percentage (10%) had informal education. This implies that the majority

of the informal food traders had a formal education, which likely contributed to improving their business performance (Mago, 2018).

#### **4.2 Financial Capital Responses**

Financial capital encompasses financial resources that the informal traders use to pursue and achieve their livelihood objectives (Sarwer et al., 2016; Mhlanga & Ndhlovu, 2020). Key indicators include savings, income, loans, pensions, social grants, and insurance (Neves & Du Toit, 2013; Mhlanga & Ndhlovu, 2020; Tikadar et al., 2022). The findings related to financial capital are presented in Table 3.

**Table 3. Financial Capital Responses**

<b>Indicators</b>	<b>Description</b>	<b>Findings</b>
Savings	Percentage of participants who are saving	27.5%
Income	Amount per month (in rand) (average)	R2535.83
Formal loan	Percentage of participants with access to formal loans	27.5%
Informal loan	Percentage of participants with access to informal loans from sources such as friends, relatives, and loan sharks	75.0%
Pension	Percentage of participants who receive the pension fund	2.5%
Social grant	Percentage of participants who are receiving a social grant	51.7%
Insurance	Percentage of participants who have insured their businesses	0%

**Source:** Computed using survey data (2024)

The study revealed that informal food traders had limited access to financial resources, with only 27.5% saving money. The average monthly income generated by respondents was R2,535.83, which is below the average income range of street food salespersons in South Africa, who earn between R3,808 and R13,743 per month (Wage Indicator, 2024). These findings align with those of previous studies (Rahman et al., 2021; Khambule, 2022), which reported a decline in income, savings, and the ability to afford the cost of living due to the COVID-19 pandemic.

Additionally, only 27.5% of the respondents had access to formal loans. Owing to this limited access, many traders turned to informal sources, with 75.0% borrowing from friends, relatives, or loan sharks. The lack of access to formal loans was due primarily to the lack of collateral required by formal lending institutions (Tikadar et al., 2022), which might have hindered the expansion of their businesses (Mago, 2018).

The study also investigated whether respondents received pension funds to support their livelihoods post-COVID-19. The majority of traders were not pensioners, with only 2.5% accessing and using pension funds. However, 51.7% of the respondents received and utilised social grants to support their livelihoods post-COVID-19. Social grants supplement income from informal trading and help traders meet essential needs such as clothing, food, shelter, and medical care, thereby reducing the severity of poverty (Neves & Du Toit, 2013).

Insurance protects businesses from collapsing due to disasters (Kaushalya et al., 2014), including those such as COVID-19. However, none of the respondents had insured their businesses, implying that in the event of unforeseen circumstances such as theft, accidents, or property damage, they may face financial losses that could be difficult to recover from.

### 4.3 Physical Capital Responses

Physical capital encompasses basic infrastructure and physical goods that informal traders use to support their livelihoods (Mago, 2018). Key indicators include storage facilities, transport, trading stalls, contracts and licences, housing, cellphones, and electricity (Mago, 2018; Munishi et al., 2021; Lefophane et al., 2022; Tikadar et al., 2022). Findings related to physical capital are presented in Table 4.

**Table 4. Physical Capital Responses**

Indicators	Description	Findings
Storage facilities	Percentage of participants with access to storage facilities	28.3%
Transports	Percentage of participants with access to public transport	100%
Trading stall	Percentage of participants who own trading stalls	77.5%
Public space	Percentage of participants renting the public space they operate their business on	66.7%
Trading licence/permits	Percentage of participants with trading licences/permits	31.7%
Trading contract	Percentage of participants with contracts with the suppliers	36.7%
Cellphones	Percentage of participants who use cellphones for their informal economic activities	32.5%
Housing status	Percentage of participants who own a concrete house	64.2%
Electricity	Percentage of participants with access to storage facilities	98.3%

**Source:** Computed using survey data (2024)

The study revealed that only 28.3% of the respondents had access to storage facilities. This limited access exposed their goods to theft and damage from adverse weather conditions (Mago, 2018), potentially leading to financial losses and difficulties in sustaining their livelihoods post-COVID-19. Conversely, all respondents (100%) had access to public transport, indicating that informal food traders living far from their workplaces relied on taxis, buses, and other vehicles to reach their trading areas (Munishi et al., 2021). Additionally, 77.5% of the respondents owned trading stalls, including umbrellas, carts, containers, and various roofed structures. Owning a trading stall can enhance income potential by offering a stable location for business and fostering the development of a regular customer base (Lefophane et al., 2022).

The study also revealed that 66.7% of the respondents paid rent for the public space used for their businesses. This suggests that most traders were less likely to face the risk of goods confiscation due to the non-payment of rent. Trading licences/permits are critical for security, economic stability, and overall well-being. Without these licences, traders are more vulnerable to harassment and eviction by municipal authorities (Lefophane et al., 2022). Despite this, only 31.7% of informal food traders had trading licences/permits, leaving those without at risk of such issues. However, some traders operated outside municipal jurisdiction and may have mitigated these risks by securing lease agreements with private property owners (Lefophane et al., 2022).

Cellphones facilitate various economic activities, such as business promotion, digital payments, and order placement. Nevertheless, only 32.5% of the respondents used their cellphones for these purposes, indicating that most of the informal food traders did not leverage this technology for business operations.

#### **4.4 Natural Capital Responses**

Natural capital refers to the natural resources that informal traders utilise to support their livelihoods (Tikadar et al., 2022). It is assessed on the basis of ownership of agricultural land, livestock, and access to forest and water resources (Arisanty et al., 2020). Table 5 presents the findings related to natural capital.

**Table 5. Natural Capital Responses**

<b>Indicators</b>	<b>Description</b>	<b>Findings</b>
Land	Percentage of participants who own and use the land for agricultural activities	37.5%
Livestock	Percentage of participants who raise livestock for trading	8.3%
Water	Percentage of participants with access to safe drinking water	94.2%

**Source:** Computed using survey data (2024)

Land ownership can facilitate participation in income-generating activities such as commercial agriculture, which may supplement income from informal trading (NDA, 2013). However, only 37.5% of the respondents owned and used land for commercial agriculture. This suggested that most of the informal food traders did not diversify their income through commercial agriculture, partly because much of the private land in South Africa is owned by white individuals (South African Government, 2018).

Similarly, livestock rearing can provide an additional income source through the sale of animals and animal products, which helps mitigate financial shocks (Rahman et al., 2021). However, only 8.3% of the respondents engaged in livestock trading. These indicate that informal food traders largely did not engage in commercial agricultural activities to supplement their income, especially in the post-COVID-19 period.

Access to safe drinking water enhances health by reducing the risk of waterborne diseases such as typhoid, diarrhoea, and cholera (Ahmed et al., 2021), thereby improving productivity, and regularity at work. Most of the respondents (94.2%) had access to safe drinking water, indicating that they were less susceptible to waterborne diseases and could work regularly. This access is primarily provided by municipalities through public taps and tankers during water crises (StatsSA, 2023). In contrast, Rahman et al. (2021) reported that shrimp farmers in certain areas in Bangladesh faced salinity and unsafe drinking water.

#### **4.5 Social Capital Responses**

Social capital encompasses both formal and informal social relationships that informal traders leverage to enhance their livelihoods (Mbatha & Mlambo, 2021). Key indicators of social capital include membership in organisations, trust, information sharing, savings groups, and assistance (Tikadar et al., 2022; Hua et al., 2017; Haque, 2021). Table 6 presents the findings related to social capital.

Informal organisations provide platforms for mutual support, solidarity among traders, and information sharing (Haque, 2021; Arisanty et al., 2020). Membership in these organisations serves as an informational channel and fosters cooperative efforts, underpinned by high levels of trust (Tikadar et al., 2022). Most respondents (55.8%) were members of informal traders or community-based organisations, indicating that these traders were connected to principles promoting cooperation and collective action (Munishi et al., 2021). Additionally, 58.2% of the respondents shared information within their organisations, including details on affordable goods, funding opportunities, pricing, marketing channels, and job prospects.

**Table 6. Social Capital Responses**

Indicators	Description	Findings
Membership in informal and formal organisations, including self-help groups	Percentage of participants who belong to a certain membership organisation	55.8%
Information sharing	Percentage of participants who share information within their organisation	58.2%
Trust in the organisation	Percentage of participants with trust in organisations	29.9%
Trust in institutions	Percentage of participants with trust in institutions	28.4%
The group saving club such as stokvels	Percentage of participants who participate in group saving clubs such as stokvels	64.2%
Opportunities to obtain assistance	Percentage of participants who receive assistance from family or friends, including financial support during crises or labour during busy periods	31.7%

**Source:** Computed using survey data (2024)

Trust within membership organisations enhances traders' livelihoods by fostering a supportive, cooperative environment where resources can be pooled and collective bargaining can occur (Haque, 2021). However, only 28.4% of the respondents expressed trust in their membership organisations and government institutions. This lack of trust might have contributed to the limited revenue generation among informal food traders (Mago, 2018).

Group savings clubs (64.2% of respondents) allow members to pool resources and access funds during financial hardships. These clubs, which include money savings clubs, help traders save money for groceries, funerals, and other expenses. This suggests that informal food traders have utilised group savings to support their livelihoods in the post-COVID-19 period.

Assistance plays a crucial role in enhancing livelihood status (Hua et al., 2017). However, only 31.7% of respondents received any form of assistance, such as family labour or financial aid, for their businesses during times of crisis. This highlights a significant support gap for informal food traders, mirroring the decline in assistance experienced by shrimp farmers in Bangladesh during the COVID-19 lockdown (Rahman et al., 2021).

#### 4.6 Overall LAI for the Informal Food Traders

Table 7 presents the findings of the LAI findings for the assessment of the livelihood status of informal food traders. The table contains the LAI values for each indicator and livelihood capital. The primary objective of the findings is to assess the ability of informal food traders to access and utilise the five livelihood capitals to deal with the aftermath of COVID-19.

The LAI values, ranging from 0 to 1, provide insights into traders' ability to access and utilise five types of livelihood capital (human, financial, physical, natural, and social resources) post-COVID-19. LAI values close to 0 indicate low livelihood status, whereas values close to 1 signify high livelihood status. Specifically, Tikadar et al. (2022) define LAI values between 0 and 0.49 as indicating low livelihood status, 0.5 as moderate status, and 0.51 to 1.00 as high status. The overall LAI for informal food traders in this study is 0.44, reflecting a low livelihood status. This suggests that informal food traders had limited access to the five types of livelihood capital, largely due to the COVID-19 lockdown restrictions, which disrupted economic activities and constrained their livelihood opportunities. Similar studies, such as those by Haque (2021) and Rahman et al. (2022), also reported declines in livelihood status among street vendors and shrimp farmers in Bangladesh due to COVID-19 restrictions, with LAI values of 0.35 and 0.43, respectively.

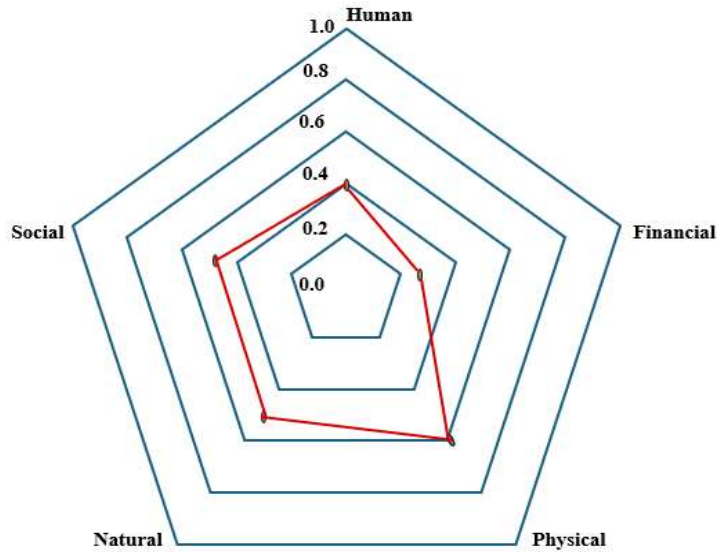
**Table 7. Livelihood status of informal food traders**

Indicators	Index values	Livelihood capitals	Overall index values
Health	0.917	Human Capital	0.40
Experience	0.38		
Labour	0.07		
Training	0.05		
Formal education	0.9		
Informal education	0.10		
Savings	0.275	Financial Capital	0.28
Income	0.11		
Formal loan	0.275		
Informal loan	0.75		
Pension	0.025		
Social grant	0.517		
Insurance	0.000	Physical Capital	0.60
Storage facilities	0.283		
Transports	1		
Trading stall	0.775		
Public space	0.667		
Trading licence	0.317		
Trading contract	0.367		
Cellphones	0.325		
Housing status	0.642		
Electricity	0.983		
Land	0.375	Natural Capital	0.47
Livestock	0.083		
Water	0.942		
Membership	0.558	Social Capital	0.45
Trust in organisation	0.299		
Trust in an institution	0.284		
Information Sharing	0.582		
The Group Saving Club	0.642		
Opportunities to obtain assistance	0.317		
<b>Overall livelihood status of informal food traders</b>			<b>0.44</b>

**Source:** Computed using survey data (2024)

#### **4.7 Results from the LAI analysis for the five livelihood capitals**

While informal food traders exhibited low livelihood status, their performance varied across the five livelihood capitals, as presented in Table 7. Following previous studies (Arisanty et al., 2020; Tikadar et al., 2022), Figure 1 was developed to provide a graphical representation of the endowments of the five types of livelihood capital.



**Figure 1. Livelihood Index Values of Informal Food Traders**

Physical capital ranked the highest, with an LAI value of 0.60, followed by human capital, which ranked second, with an index value of 0.40. Natural capital and social capital ranked third and fourth, with index values of 0.47 and 0.45, respectively. Financial capital ranked fifth and lowest, with an index value of 0.28. Thus, none of these livelihood capitals were ranked as medium.

Physical capital had the highest LAI value, which is consistent with findings from previous studies (Arisanty et al., 2020; Rahman et al., 2021; Tikadar et al., 2022). This high value is attributed to traders' access to public transport and electricity, as well as ownership of trading stalls and concrete houses. However, limitations were noted in access to storage facilities, trading contracts, licences/permits, and the use of cellphones for economic activities.

Human capital ranked second but still recorded a low LAI value (0.40), indicating limited livelihood status in this asset category. This finding aligns with studies of fishermen and street vendors in Bangladesh, which also reported low human capital (Haque, 2021; Tikadar et al., 2022). The low value in this study is due to limited access to human resources, such as training and hired labour, which are essential for coping with the COVID-19 aftermath. However, traders generally performed well in other human resource aspects, including health, experience, and formal education, which are crucial for sustaining livelihoods post-COVID-19.

The low LAI value of 0.45 for social capital is consistent with previous studies (Arisanty et al., 2020; Rahman et al., 2021). This is attributed to traders' lack of trust in membership organisations and government institutions, as well as limited assistance from family and friends post-COVID-19. Despite these challenges, most of the traders were part of membership organisations and group savings clubs (stokvels), which provided some support post the pandemic.

Financial capital had the lowest LAI value (0.28), which is consistent with other studies (Haque, 2021; Rahman et al., 2021; Tikadar et al., 2022). This reflects traders' limited access to the financial resources necessary to cope with the aftermath of COVID-19. The low value is attributed to their inability to save, limited income, lack of insurance, restricted access to

formal loans, and the fact that most traders were not pensioners. However, many traders accessed informal loans and social grants to sustain their livelihoods post-pandemic.

The findings on natural capital (0.47) align with those of Rahman et al. (2021), who reported a decline in the natural capital status of shrimp farmers in Bangladesh. In contrast, other studies have reported varying natural capital statuses, that is, high for street vendors in Bangladesh (Haque, 2021), medium for women traders in Indonesia (Arisanty et al., 2020), and moderate for fishermen in Bangladesh (Tikadar et al., 2022). The low level of natural capital observed in this study is linked to traders' limited involvement in commercial agriculture, which could have supplemented their income post-COVID-19. However, most of the traders had access to safe drinking water, reducing the risk of waterborne diseases and potentially increasing their post-pandemic productivity.

## **5. Conclusion**

### **5.1 Summary, Implications and Recommendations**

This study assessed the livelihood status of informal food traders in eight selected areas of the Polokwane Local Municipality via the LAI. The LAI was chosen for its ability to evaluate the extent to which informal food traders accessed and utilised five capital assets (human, social, physical, natural, and financial capital) to recover from and cope with the aftermath of COVID-19 while sustaining their livelihoods. The results revealed a low overall livelihood status among informal food traders, with an estimated LAI value of 0.44. This low status indicates limited access to the necessary livelihood capital assets for recovery and sustainability post-COVID-19, primarily due to the COVID-19 lockdown restrictions, which disrupted economic activities and con-strained their livelihood opportunities.

Despite the overall low status, performance varied across the five livelihood capitals. Physical capital ranked the highest, suggesting that most traders had access to essential infrastructure and physical goods, such as transportation, electricity, concrete housing, trading spaces, and trading stalls, which were crucial for sustaining their livelihoods. On the other hand, financial capital ranked the lowest, reflecting the traders' limited access to financial resources, including savings, income, insurance, formal loans, and pensions. As a result, many traders had to rely on informal loans from friends, relatives, and loan sharks, as well as social grants, to sustain their livelihoods post-COVID-19.

Overall, the findings highlighted that informal food traders in the study area had limited access to the capital assets needed for recovery and sustainability post-COVID-19. Therefore, policy interventions should prioritise strengthening human capital, enhancing access to financial capital, improving the utilisation of natural capital, expanding physical capital, and boosting social capital. This can be achieved as follows. Government institutions, Non-Governmental Organisations (NGOs), and local authorities should focus on building human capital by implementing training programmes that improve business skills, financial literacy, and operational knowledge. Financial institutions, in collaboration with the government, should offer microloans with relaxed collateral requirements tailored specifically to informal traders. Additionally, community-based savings schemes and affordable insurance products should be introduced for informal traders, ensuring that they have a financial cushion to weather future crises. The government should further expand the availability of social grants, such as social relief of distress grants, to assist informal food traders during crises such as the COVID-19 pandemic.

To promote income diversification, informal food traders should be encouraged to utilise available natural resources, such as land and livestock, for commercial farming activities. Furthermore, community engagement and trust-building initiatives should be organised to foster stronger relationships between traders, societal organisations, and government

institutions through mentorship programmes and peer-to-peer networking events. Finally, local governments should work to improve market conditions by ensuring that traders have access to essential infrastructure, such as storage facilities and trading spaces. By addressing these key areas (human, financial, natural, social, and physical capital), informal food traders would be better equipped to recover from the impacts of COVID-19 and build more resilient and sustainable livelihoods in the future.

## 5.2 Suggestions for Future Research

There are five limitations of this study that serve as areas for future research. First, future research should expand the geographic scope and assess the livelihood status of informal food traders in varying contexts by comparing findings across different municipalities or provinces in South Africa. Second, future research should explore other types of informal traders, such as non-food traders, to provide a broader understanding of access to and use of livelihood capitals across different informal trading activities. Third, future research should focus on other periods and crises beyond post-COVID-19 by investigating resilience-building strategies for crises such as economic downturns or climate change impacts. Fourth, future research should explore additional capital assets, such as cultural or political capital, that could influence the livelihood status of informal food traders. Finally, longitudinal studies are needed to track changes in livelihood status over time, offering a more dynamic understanding of how informal food traders utilise capital assets to recover and adapt to ongoing challenges.

## References

- Ahmed, A. S., & Mustapha, A. L. (2020). Evaluation of Livelihood Status among Smallholder Cowpea Farmers in Kano State, Nigeria. *Journal of Agricultural Economics, Environment, and Social Sciences*, 6(1), 118–130.
- Ahmed, M., Saha, S. M., Hossain, M. E., Khan, M. A., & Prodhan, M. M. H. (2021). Assessment of livelihood and food poverty status of the floating fishermen in riverine system of Bangladesh. *Social Sciences & Humanities Open*, 4(1), 100219. <https://doi.org/10.1016/j.ssaho.2021.100219>
- Arisanty, D., Putro, H. P. N., Normelani, E., & Anis, M. Z. A. (2020). Women trader's livelihoods in the tourism area of Lok Baintan floating market. *Journal of Indonesian Tourism and Development Studies*, 8(1), 25–32. <https://doi.org/10.21776/ub.jitode.2020.008.01.04>
- Chambers, R., & Conway, G. (1992). *Sustainable rural livelihoods: Practical concepts for the 21<sup>st</sup> century* (Discussion Paper 296). Institute of Development Studies.
- Department for International Development. (2000). *Sustainable Livelihoods Guidance Sheets*. <https://www.livelihoodscentre.org/documents/114097690/114438878/Sustainable+livelihoods+guidance+sheets.pdf>
- Ganti, A. (2023). *Central Limit Theorem: Definition and key*. [https://www.investopedia.com/terms/c/central\\_limit\\_theorem.asp#:~:text=A%20sample%20size%20of%2030,representative%20of%20your%20population%20set](https://www.investopedia.com/terms/c/central_limit_theorem.asp#:~:text=A%20sample%20size%20of%2030,representative%20of%20your%20population%20set).
- Haque, M. (2021). *Impact of COVID-19 on livelihoods of street vendors in Dhaka City, Bangladesh* (Unpublished Master's dissertation). Sher-e-Bangla Agricultural University, Bangladesh.
- Hua, X., Yan, J., & Zhang, Y. (2017). Evaluating the role of livelihood assets in suitable livelihood strategies: Protocol for anti-poverty policy in the Eastern Tibetan Plateau, China. *Ecological Indicators*, 78, 62–74. <https://doi.org/10.1016/j.ecolind.2017.03.009>

- Kabonga, I., Zvokuomba, K., Nyagadza, B., & Dube, E. (2023). Swimming against the tide: Young informal traders' survival strategies in a competitive business environment in Zimbabwe. *Youth & Society*, 55(2), 280–299. <https://doi.org/10.1177/0044118X211044524>
- Khambule, I. (2020). The effects of COVID-19 on the South African informal economy: Limits and pitfalls of government's response. *Loyola Journal of Social Sciences*, 34(1), 95–109.
- Khambule, I. (2022). COVID-19 and the informal economy in a small-town in South Africa: governance implications in the post-COVID era. *Cogent Social Sciences*, 8(1), 2078528. <https://doi.org/10.1080/23311886.2022.2078528>
- Kaushalya, H., Karunasena, G., & Amarathunga, D. (2014). Role of insurance in post disaster recovery planning in business community. *Procedia Economics and Finance*, 18, 626–634. [https://doi.org/10.1016/S2212-5671\(14\)00984-8](https://doi.org/10.1016/S2212-5671(14)00984-8)
- Lefophane, M. H., Mdungwa, M. S., & Oluwatayo, I. B. (2022). Analysis of Factors Influencing the Income Generated By Informal Fresh Produce Traders during Covid-19 Pandemic in Polokwane Local Municipality, South Africa. *International Journal of Food and Agricultural Economics*, 10(4), 325–342. <http://dx.doi.org/10.22004/ag.econ.329629>
- Mago, W. (2018). *Understanding sustainable livelihood strategies of informal traders: A case of Mount Frere, Eastern Cape* (Unpublished Master's dissertation). University of Free State, South Africa.
- Mbatha, M. W., & Mlambo, D. N. (2021). Using Sustainable Livelihood Approach to Analyze the Impact of COVID-19 on the South African Rural Agricultural Markets. *Humanities and Social Sciences*, 28(4), 71–80. <https://doi.org/10.7862/rz.2021.hss.32>
- Mhlanga, M., & Ndhlovu, E. (2020). Socio-economic implications of the COVID-19 for smallholder livelihoods in Zimbabwe. *Preprints*. <https://doi.org/10.20944/preprints202004.0219.v1>
- Munishi, E. J., Kirumirah, H. M., & Lwoga, E. T. (2021). Covid-19 And Urban-Based Informal Vendors in Global South: A Review of Associated Livelihood Threats and Policy Implications. *African Journal of Applied Research*, 7(2), 88–107. <http://doi.org/10.26437/ajar.10.2021.07>
- Municipalities of South Africa. (2023). *Polokwane Local Municipality (LIM354): Geography, History & Economy*. <https://municipalities.co.za/overview/1121/polokwane-local-municipality>.
- National Development Agency (NDA). (2013). *Civil society participation in income generating activities in South Africa*. [https://www.nda.org.za/assets/resources/CF824421-4FA0-41EE-AB69-4DB10CD0384A/Research\\_report\\_Income\\_Generation\\_study\\_report.pdf](https://www.nda.org.za/assets/resources/CF824421-4FA0-41EE-AB69-4DB10CD0384A/Research_report_Income_Generation_study_report.pdf)
- Neves, D., & Du Toit, A. (2013). Rural Livelihoods in South Africa: Complexity, Vulnerability and Differentiation. *Journal of Agrarian Change*, 13(1), 93–115. <http://dx.doi.org/10.1111/joac.12009>
- Nyanga, T., Zirima, H., & Mashavira, N. (2020). Withering COVID 19 storm: survival strategies employed by informal traders in Masvingo urban, Zimbabwe. *Management Dynamics*, 20(1), 1–9. <https://doi.org/10.57198/2583-4932.1012>
- Polokwane Local Municipality. (2023). 2023/24 Integrated Development Plan. <https://www.polokwane.gov.za/wp-content/uploads/2023/07/2023-24-Final-IDP.pdf>
- Rahman, M. S., Majumder, M. K., Sujan, M. H. K., & Manjira, S. (2021). Livelihood status of coastal shrimp farmers in Bangladesh: Comparison before and during COVID-19. *Aquaculture Reports*, 21, 100895. <https://doi.org/10.1016/j.aqrep.2021.100895>
- Rodriguez, J., & Walters, K. (2017). The importance of training and development in employee performance and evaluation. *World Wide journal of multidisciplinary research and development*, 3(10), 206–212.

- Rwafa-Ponela, T., Goldstein, S., Kruger, P., Erzse, A., Abdool Karim, S., & Hofman, K. (2022). Urban informal food traders: A rapid qualitative study of COVID-19 lockdown measures in South Africa. *Sustainability*, 14(4), 2294. <https://doi.org/10.3390/su14042294>
- Sarwer, M. G., Ali, M. Y., Bhowmik, S., Asadujjaman, M., & Sharmin, M. S. (2016). Pond farming and livelihood status of fish farmers in Subarnachar, Noakhali, Bangladesh. *Agriculture and Biology Journal of North America*, 7(3), 134–139. doi:10.5251/abjna.2016.7.3.134.139
- South African Government. (2018). *Land audit report - Phase II: Private land ownership by race, gender and nationality*. [https://www.gov.za/sites/default/files/gcis\\_document/201802/landauditreport13feb2018.pdf](https://www.gov.za/sites/default/files/gcis_document/201802/landauditreport13feb2018.pdf)
- South African Government. (2020). *Disaster Management Act: Declaration of a National State of Disaster: COVID-19*. <https://www.gov.za/documents/notices/disaster-management-act-declaration-national-state-disaster-covid-19-coronavirus>
- South African Government. (2021). *Electoral Commission Former Chairperson Brigalia Bam receives Covid-19 vaccine, 24 May*. <https://www.gov.za/news/media-advisories/government-activities/electoral-commission-former-chairperson-brigalia-bam>
- South African Government. (2022). *Disaster Management Act: Termination of national state of disaster*. <https://www.gov.za/documents/notices/disaster-management-act-termination-national-state-disaster-04-apr-2022>
- South African Government (2024). *About Coronavirus COVID-19*. <https://www.gov.za/Coronavirus>
- Statistics South Africa. (2023). *General Household Survey. GHS 2023 P0318*. <https://www.statssa.gov.za/publications/P0318/P03182023.pdf>
- Stiegler, N., & Bouchard, J. P. (2020). South Africa: Challenges and successes of the COVID-19 lockdown. *Annales Médico-psychologiques*, 178 (7), 695–698. <https://doi.org/10.1016/j.amp.2020.05.006>
- Takaza, S. C., & Chitereka, C. (2022). An investigation into the livelihoods strategies of informal women traders in Zimbabwe. *Journal of Innovation and Entrepreneurship*, 11(1), 37. <https://doi.org/10.1186/s13731-021-00175-3>
- Tikadar, K. K., Islam, M. J., Saha, S. M., Alam, M. M., Barman, S. K., & Rahman, M. A. (2022). Livelihood status of small-scale fishermen and determinants of their income: Insights from north-eastern floodplains of Bangladesh. *Geography and Sustainability*, 3(3), 204–213. <https://doi.org/10.1016/j.geosus.2022.06.002>
- U.S. Government Accountability Office (2019). *Applied research and methods: Assessing data reliability*. <https://www.gao.gov/assets/gao-20-283g.pdf>
- Wage Indicator. (2024). *Role & Pay - Street food salespersons*. <https://mywage.co.za/work-smart/role-pay/south-africa-street-food-salespersons>
- Wegerif, M. C. (2020). “Informal” food traders and food security: experiences from the Covid-19 response in South Africa. *Food Security*, 12(4), 797–800. <https://doi.org/10.1007/s12571-020-01078-z>
- World Health Organization. (2023). *Coronavirus disease 2019 (COVID-19)*. [https://www.who.int/healthtopics/coronavirus#:~:text=Coronavirus%20disease%20\(COVID%2D19\)%20is%20an%20infectious%20disease%20caused,recover%20without%20requiring%20special%20treatment](https://www.who.int/healthtopics/coronavirus#:~:text=Coronavirus%20disease%20(COVID%2D19)%20is%20an%20infectious%20disease%20caused,recover%20without%20requiring%20special%20treatment)
- Women in Informal Employment: Globalizing and Organizing (WIEGO). (2020). *Informal Workers during the COVID-19 crisis*. [https://www.wiego.org/sites/default/files/resources/file/Informal%20Workers%20in%20the%20COVID-19%20Crisis\\_WIEGO\\_July\\_2020.pdf](https://www.wiego.org/sites/default/files/resources/file/Informal%20Workers%20in%20the%20COVID-19%20Crisis_WIEGO_July_2020.pdf)