



Harnessing Innovation in the Informal Food Services Sector: Insights for public policy in the age of COVID-19

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Harnessing Innovation in the Informal Food Services Sector

Insights for public policy in the age of COVID-19

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Abstract

The way in which enterprise informality is typically understood as a binary opposite and as a temporary linear process towards formality is not helpful to inform policy responses to the COVID-19 crisis that could promote inclusive development in Africa. A better conceptualisation and empirical understanding of the pathways through which informal enterprises evolve to become sustainable, profitable businesses is needed. This paper argues that innovation is key to promoting sustainable business evolution in the informal sector and should be a key part of any strategy to mitigate the impact of COVID-19 on the most vulnerable. Based on the findings of a recent study on informal food enterprises in South Africa, the paper explores how innovation supports the kinds of business evolution required to build and strengthen local food systems serving low-income and impoverished households. How can informal enterprises grow in complexity through their innovation activities to be included in and strengthen local innovation and production food systems more effectively in a post-COVID economy? The paper draws on a survey of innovation in informal enterprises, using methodologies adapted from informal sector research and the standard Oslo Manual (OECD, 2018). This is combined with an in-depth case study of a local innovation in informal food services in a peri-urban area of KwaZulu Natal. The paper analyses the relationship between the crisis events prompting an innovation response for survival or growth and the evolution of informal food enterprises towards manifesting different levels of formality over time. The paper argues that creating pathways for economic recovery post-COVID requires public policies that engage with the realities and persistence of the informal sector, and significantly, recognise the central role of innovation for enterprise resilience and growth.

Keywords: informal sector, innovation, informal food services, COVID-19, South Africa

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1. Introduction

Across the globe, COVID-19 has impacted negatively on livelihoods, increased unemployment and deepened poverty, particularly in the Global South, and particularly severely for those citizens already marginalised and vulnerable (FAO, 2020; Mahler, et al., 2020; Yaya, et al., 2020). In Africa, historically, millions of households and individuals have sought their livelihoods in the informal sector, often in response to economic crises, with the growth in the informal sector widely believed to be a counter-cyclical 'shock absorber' (Khambule, 2020). Under COVID-19 conditions, the informal sector is not insulated from the economic shocks and global volatility resulting from 'lockdown strategies' to prevent the spread of the virus and may be even more severely impacted than the formal sector (Koveos, 2020; Rogan & Skinner, 2020).

In South Africa and many other countries in Africa, informal food trade in townships and peri-urban areas account for a large proportion of informal economic activity and is critical to food access for the poor (Petersen & Charman, 2017; Tawodzera, 2019). Hence, the negative impact of COVID-19 on the survival of informal food enterprises constitutes a double burden, impacting not only livelihoods but also household food security.

There is growing evidence globally that the typical government responses to mitigate the economic and social impacts of COVID-19 are not reaching the most vulnerable. Where informal enterprises are included, government policy tends to focus on formalisation strategies, to bring the informal sector within business regulatory frameworks. The way in which informality is typically understood, as a binary opposite and as a temporary linear process towards formality, is not helpful to inform policy responses to the COVID-19 crisis that will likely promote inclusive development.

This paper raises critical questions about the approach underpinning government policy and the extent to which it can mitigate livelihood risk and alleviate the negative impact on the most vulnerable citizens. Rooted in a neo-liberal approach to informality, approaches typically focus on identifying the drivers of informality and strategies to overcome the barriers to formality. A neo-liberal account assumes that informality is a form of 'grassroots entrepreneurship' that arises because poorly designed laws and regulations allow and incentivise non-compliance (Crush & Young, 2019). Many states design their policies based on this premise, focused on reforming the legal and regulatory systems to incentivise compliance and wider participation.

In contrast, we argue that creating pathways for economic recovery post-COVID-19 requires public policies that engage with the realities and persistence of the informal sector, and significantly, with the ways in which innovation is so central to the very nature of informality and can be harnessed towards enterprise growth and inclusive development. Based on an empirical analysis of informal micro-enterprises providing food services, our paper draws on and contributes to the large body of research on the informal sector in South Africa. It focuses on a critical dimension that this research typically hints at but does not explore in detail; the innovative activity that is so critical to the survival and growth of informal micro-enterprises.

The paper argues that promoting innovation in the informal sector should be a key part of any strategy to mitigate the impact of COVID-19 on the most vulnerable. Often such strategies focus on how barriers to innovation can be removed so that informal enterprises can increase their output. The paper adopts a different approach and focus. It explores how informal enterprises progress onto better business evolution pathways that help them grow in complexity through their innovation activities. The 'complexity' of an enterprise refers to the degree of structure, which can vary from simple enterprises with a single product and single ownership to enterprises with many varied product ranges and greater management, organisational, or technological structures. We argue that this is an important avenue to promote the inclusion of informal food enterprises in a way that also strengthens local food systems more effectively in a post-COVID economy.

Section 2 examines the literature on innovation in the informal food sector, focusing on the impact of COVID-19. It proposes an analytical distinction to identify degrees of (in)formality rather than mutually distinct formal and informal sectors (Mbaye & Gueye, 2020, p. 22) and considers the role of innovation in stimulating changes in informality states. Section 3 describes the methodology of the research on which the paper is based. Given that the informal economy is highly complex and deeply embedded in specific environments (Crush & Young, 2019), Section 4 situates the analysis and provides a detailed description of the informal food micro-enterprises in the study area, including the production value chain, networks, and nature of innovation. Section 5 explores how informal food micro-enterprises respond to crisis events through innovation for their survival or growth and their complex, multiple evolutions or cycles towards manifesting different levels of informality over time. Section 6 presents policy insights to support innovation and economic inclusion, focused on promoting learning in informal enterprises and stronger systemic linkages towards better business evolution pathways.

2. Understanding innovation in informal food enterprises to promote inclusive change

Drawing on a brief overview of the literature on the informal food sector in South Africa, this section provides insight into the emergence and dynamics of the informal food trade in townships and rural areas. The gap in understanding the nature and role of innovation in informal food businesses is highlighted. Building on insights from the emerging literature on innovation in the informal sector, we propose a framework for exploring how informal food businesses use innovation to continually adapt and evolve to stay competitive and survive under difficult socio-economic conditions. A different approach to understanding (in)formality, one that sees it as a non-linear process involving a multitude of states, underpins our approach.

2.1. Research on the informal food sector in South Africa

COVID-19 has stimulated a renewed focus on the role of the informal sector in food security (Moore, 2020; Mottaleb, et al., 2020). One major strand of the literature focuses on informal food production in smallholder agricultural enterprises (Amadu, et al., 2020; Kahsay, et al.,

2020; Mdemu, et al., 2020; Mora, et al., 2020). Another is on strengthening food security programmes, whether public or private (de Amorim, et al., 2020; de Araújo & Calazans, 2020; Kinsey, et al., 2020).

Our focus is on the most prevalent informal sector, informal food trade in urban and peri-urban townships and rural settlements (Crush & Caesar, 2014; Petersen & Charman, 2017; Rogan & Skinner, 2018). The paper draws on an emerging literature in South Africa that provides the kind of analysis required to understand their dynamics of emergence and persistence (Charman & Petersen, 2018; Fourie, 2018; Rogan & Skinner, 2017; 2020).

Crush and Young (2019) argue that while informal food trade in Africa tends to be a 'last refuge' for the most marginalised, these enterprises are a site of entrepreneurial agency, energy, and innovation. More detailed studies are available that illustrate this creative tension through contextually embedded and historically specific research. Based on a micro-enterprise survey in Mpumalanga, for example, Mahadea and Khumalo (2020) argue that internal factors within the informal enterprise, such as entrepreneurial factors or education and training, are greater hurdles to their success than external market factors. They urge a greater focus on understanding the internal entrepreneurial limitations to growth and sustainability, and hence, on how to promote value co-creation through collaborative networks, dynamic interaction, and resource integration. Petersen and Charman (2018) emphasise the contribution of informal food enterprises in KwaZulu Natal to local economic development, as well as local food security, in culturally-relevant ways. They highlight a distinctive feature: the role of the family and the household as employees in shaping the dynamics of these micro-enterprises, as enablers of daily operations, but potential blockages to growth, given precarity and excessive family demands that may impact on success. Tawodzera (2019) used the 'Hungry Cities Partnership' survey data (Joubert, et al., 2018; Skinner & Haysom, 2016; Skinner, 2019) to show that the motivation for starting an enterprise is primarily necessity-driven (BER, 2016) – to obtain money to survive. His work contributes an approach to understanding the structures and dynamics of food vendor enterprises in a rich, detailed manner.

2.2. Contextually-embedded research on innovation in informal food enterprises

Missing in this literature on the informal food sector is a dedicated focus on innovation and on the creative and dynamic nature of these micro-enterprises, which are continually adapting and evolving their economic activities as a competitive and survival strategy.

The emerging innovation studies literature that shows how crucial innovation is for the survival of informal sector businesses in Africa provides useful insights through novel analytical frameworks for understanding innovation at the local level (De Beer, et al., 2013; Mustapha, et al., 2021); sectoral studies (Kraemer-Mbula & Wunsch-Vincent, 2016; Konté & Ndong, 2012); policy analysis (Koczberski, et al., 2018); investigations of clustering (Mytelka & Farinelli, 2000; Jegede, et al., 2020; Jegede & Jegede, 2018); and econometric studies (Fu, et al., 2018; Mendi & Mudida, 2018). The innovation studies literature points to the need for greater attention to the role of innovation, particularly in promoting learning towards upgrading informal micro-enterprises and linking them into value chains for growth and sustainability. Mendi and Mudida (2018), for example, explored the effect of innovation in

formal enterprises in Kenya that started as informal enterprises and found that the informal phase of the business was crucial for learning and upgrading, with many going on to become successful exporters. A recent study measuring innovation in informal micro-enterprises in one local area in South Africa shows that the rate and intensity of innovation in the informal sector are high, but the typical nature of the innovation activities is very different from what we find in formal, larger businesses (CeSTII, 2020a, 2020b, 2020c). The emerging evidence suggests distinctive patterns of innovation in informal enterprises that enable them to adapt rapidly to changing circumstances and experience few 'real' barriers to their innovative behaviour.

Innovation in informal micro-enterprises, including those in food, tends to be necessity-driven (BER, 2016) in response to a need to keep the enterprise operating, to meet basic needs such as feeding the family or sending children to school, rather than opportunity-driven, i.e. by a desire to exploit opportunities to grow the business (Petersen & Kruss, 2021). The innovations tend to be non-technological and take 'forms of imitation' (Kraemer-Mbula, et al., 2019, p. 6). Kraemer-Mbula, et al. (2019) explain why it is so important to develop technological and organisational capabilities to absorb and modify technologies and products, even if only new to the firm and incremental:

"(...) the fact that innovation takes the forms of imitation does not make it any less important economically. It may be the necessary condition for the business to maintain a competitive position in the local market. At a more aggregated level it will be central to the capacity of these firms to generate needed employment and contribute to industrial production." (Kraemer-Mbula, et al., 2019, pp. 6-7).

Based on an analysis of informal food services enterprises in a South African township, Petersen and Kruss (2021) show the limitations of necessity-driven innovation strategies for linking into formal value chains and highlight the importance of learning and entrepreneurial strategies that include linkages with formal knowledge producers based on models aligned with locally embedded institutions.

Promoting locally embedded modes of innovation in informal enterprises requires very different types of policy intervention than the norm in the South African national system of innovation. Current policy practice, typically based on a 'neo-liberal' approach (Crush & Young, 2019), seeks to promote the progression of informal businesses to the formal sector. Our research argues for the adoption of a conceptual approach that recognises the rich variety of informality embedded in local contexts and systems and the significance of innovation as a driver of micro-enterprise dynamics to inform more inclusive and developmental interventions.

2.3. Researching innovation and informality in informal food micro-enterprises: potential for new policy insights

2.3.1. Distinguishing degrees of informality to recognise heterogeneity

The limited research on the nature of entrepreneurial activity in the informal sector suggests it is more useful to consider a multitude of formality states rather than a linear process or a simple change that takes place when the business becomes registered.

Formality/informality are better conceptualised as interchangeable stages along a continuum instead of binary opposites on a linear, uni-directional trajectory (Benjamin & Mbaye, 2012; Mbaye, et al., 2015). Hence, an enterprise's degree of formality or informality cannot be defined based on a single binary criterion. Understanding this multiplicity of (in)formality levels can provide policy insights into the role of innovation in business evolution in the informal sector, considering that innovation tends to be motivated by necessity-driven strategies (BER, 2016; Petersen & Kruss, 2021).

Mbaye and Gueye (2020) create an appropriate set of criteria for measuring the degree of informality/formality of a business, based on empirical data of over 1,500 informal businesses in six major cities in West and Central Francophone Africa. They propose that because there are contextually determined degrees of formality and informality, a diverse array of classification criteria should be used. Table 1 (below) reflects a set of criteria based on Mbaye and Gueye's classification criteria adapted for our study in relation to the nature of the informal food sector in South Africa.

Table 1: Criteria for identifying the degree of informality of a business.

Criteria	Description of Criterion
Firm size	Criterion 1 is fulfilled if the business employs fewer than five people. It captures the size of firms, with fewer than five employees being characteristic of small enterprises. This can be further broken down to several levels: own-account workers are those with one employee (the owner), nano-enterprises are those with two to three employees, and small enterprises are those with four to five employees.
Registration status	Criterion 2 is fulfilled when the business indicates that it is not registered with any public authority. Several modalities of registration are considered: registration with a tax authority, registration with the department of commerce, and registration as an importer/exporter.
Taxation	Criterion 3 is met if the business does not pay any form of tax, based on actual revenue.
Maintenance of financial statements	Criterion 4 is fulfilled when the business records that it does not maintain regular, accurate accounts and financial statements. This includes that there are no certified statements, no annual accounts, and no registry of revenue or expenditure.
Access to land	Criterion 5 is met when the business records that it does not operate from fixed premises. The premises could be mobile, using the operator's home or public space as a working premise.
Access to external finance	Criterion 6 is met when the business has not received a bank or microfinance loan within the last five years.
Employee benefit	Criterion 7 is met if employees are not registered with a social security scheme such as health, retirement, or accident coverage.

Source: Adapted from Mbaye & Gueye (2020: p. 28).

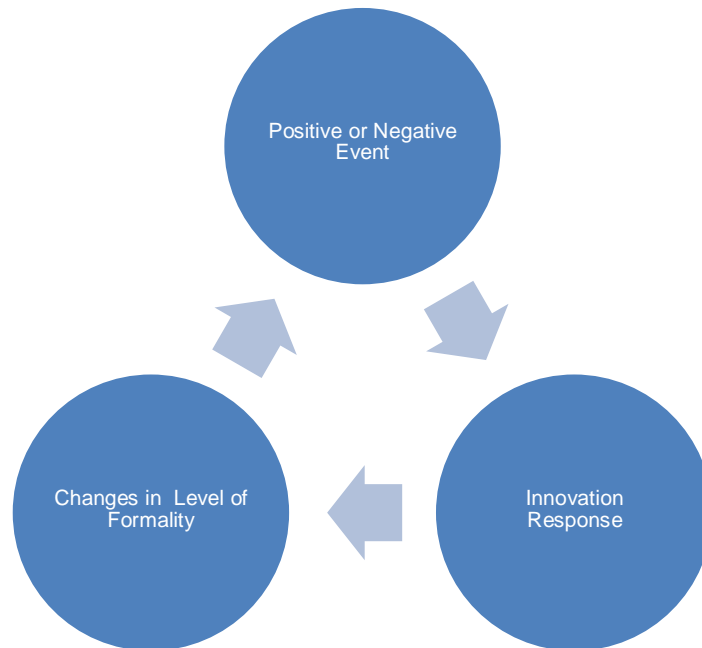
Considering the current policy emphasis on business registration as a key indicator of formality, it is important to examine and understand the variety of specific attributes or conditions that can support sustainable formalisation.

2.3.2. Innovation and informality

For informal enterprises, the state of informality itself, in addition to current crisis events, creates the context for change in the business. The role of innovation is investigated by exploring the relationship between events prompting innovation in an informal food enterprise, that is, 'innovation events', and the evolution towards manifesting the different levels of informality over time. Innovation events may include personal or financial crises events such as experiencing financial loss, being a victim of crime, becoming ill or being involved in an accident. Innovation events are of interest because they illuminate the link between innovation and business resilience or evolution. Studying responses to crisis events becomes even more important in the context of COVID-19, as the pandemic is likely

to give rise to increasing financial and personal distress. When informal micro-enterprises innovate to overcome these kinds of events, does this contribute to a change in business evolution? Specifically, does the innovation contribute to a change in the state of informality/formality, as illustrated in Figure 1?

Figure 1: The relationship between innovation, innovation events and levels of formality.



Source: Authors' own.

Here, the expanded definition of innovation introduced in the latest version of the Oslo Manual was used, as it was found to be suitably comprehensive and inclusive of researching and measuring innovation in the informal sector:

"(...) innovation is a new or improved product or process (or a combination thereof) that differs significantly from the unit's previous products or processes and that has been made available to potential users (product) or brought into use by the unit (process)."
(OECD, 2018: 32)

In the following, this paper goes on to situate the context in which the informal food enterprises operate and then to investigate the relationship between events prompting innovation for survival or growth and the evolution of informal food service micro-enterprises. We argue that this provides a sound basis to identify insights into the kinds of policy mechanisms that may be effective drivers of innovation in informal food micro-enterprises. This kind of transformative policy focuses on achieving environmental and social benefits alongside economic objectives, which can inform the design and implementation of an inclusive and sustainable policy that is critical to promoting food security and livelihoods in a post-COVID world (Akon-Yamga, et al., 2021:1).

3. Case study design and methodology

This section outlines the methodological and theoretical frameworks used in the study. The paper is based on a larger study, the Innovation in the Informal Sector project (IIS), which aimed to experiment with ways to measure innovation in the informal sector using a mixed methods approach.¹ This approach was motivated by enabling both breadth and depth in understanding complex concepts and processes such as innovation in the informal sector. A baseline study was conducted in a predominantly peri-urban area, Mpumzuza (“Sweetwaters”), located in the second-most populous region of South Africa, KwaZulu-Natal. One of the key factors informing the selection of this study area is that the municipality has established an informal sector business chamber as part of its informal sector policy. The baseline study was based on a quantitative survey and case study research. One case study, focused on business upgrading in informal food services enterprises, was used to inform the analysis in this paper. Informal food services were found to be the most dominant economic activity in the study area and were the primary economic activity of almost a third (27%) of the informal businesses in our study. The decision to focus the case study on food services was also informed by preliminary analysis of the data obtained via the survey and digital storytelling workshops, which showed the innovativeness and dynamism of the informal food businesses and thus their suitability for the purposes of this paper.

3.1. Using the LIPS framework to design a survey of innovation in the informal sector at the local level

A survey of innovation in the informal sector has to take into account the typical size of informal sector businesses, which tend to be survivalist and micro, and the local nature and spatial dynamics of informal sector industries. For this task, this study adopted a Local Innovation and Production Systems (LIPS) methodological framework (Cassiolato, et al., 2017; Cassiolato & Lastres, 2020). A LIPS is defined as:

“(...) (a) group(s) of economic, political and social agents localised in the same area, performing related economic activities, in which formal and informal interdependence and consistent linkages usually result in cooperation and learning processes, with a potential to generate the increase of productive and innovative capabilities.” (Lastres & Cassiolato, 2005, p. 7).

The LIPS framework places the unit of analysis in the set of agents, at the collective level, going beyond the individual organisations (enterprises), sectors, or production chains, establishing a close relationship between the territory and the economic activities (Cassiolato, et al., 2017). Thus, it allows for data collection and analysis that goes beyond a national innovation systems approach. With an emphasis on the impact of the socio-

¹ The Innovation in the Informal Sector (IIS) Survey was conducted in 2019 by a team of researchers based at the Centre for Science, Technology and Innovation Indicators (CeSTII) at the Human Sciences Research Council. The survey covered a two-year period, 2017 and 2018. The results were formally released on March 30, 2021. A more detailed description of the methodology, and its advantages and limitations, can be found in the IIS project outputs (CeSTIIa, 2020b, 2020c), which can be accessed via CeSTII’s webpage (www.hsrc.ac.za/en/media-briefs/cestii), and in Mustapha, et al., (2021).

economic context on production and innovation, and vice-versa, a LIPS framework aligns well with the analysis proposed in the informal sector literature. It also provides a meaningful way to delineate an empirical study unit.

Our approach builds on and adapts the LIPS framework by factoring in specificities of the informal sector in South Africa (de Beer, et al., 2013; Fourie, 2018; Kraemer-Mbula & Wunsch-Vincent, 2016; Rogan & Skinner, 2018). The adapted LIPS framework includes a broad range of new actors within the system, such as informal financing and education and training actors, informal forms of linkages among these actors, as well as the peculiarity of the socio-cultural, political, institutional, and technological landscape. Figure 2 in Section 4 illustrates the LIPS framework as applied in the IIS project.

3.2. Mixed methods participatory approach

First, we designed a quantitative innovation survey of all informal businesses in a selected study area, based on an Oslo-Manual design, adapted by drawing on the South African literature on the informal sector, as well as our own empirical qualitative work in other settings. Following best practice guidelines for conducting a Small Area Census (Charman, et al., 2017), a small area, Ward 1 and surrounds in Msunduzi, was selected as the empirical focus. This methodology fits well with the LIPS approach in that it selects a contiguous local area and identifies all the informal businesses within that area for the innovation survey.

With the use of mobile technology, the IIS questionnaire was administered through face-to-face structured interviews with informal sector business owners at their business premises and at times convenient for them, yielding a sample of 996 businesses.

Second, case study research was used to enable a more in-depth exploration of the nature of innovation. A total of 271 (27%) of 996 informal businesses included in the 2017-18 IIS Survey reported food production and services as their main economic activities. Of these 271 businesses, 232 (or 85,6%) had successful innovations within the reference period under study. A small group of 13 food businesses, who indicated that they had engaged in innovation, was selected for semi-structured interviews to add to the survey data collected from them. These interviews were conducted with the business owners, face-to-face and telephonically, depending on their availability and preference. The aim was to investigate the history of the business, how it developed over time and the nature and role of innovation and learning.

The analysis of innovation events in Section 5 draws on a set of digital stories of informal businesses created at two separate workshops in Msunduzi² and Philippi³, a township area with similar socio-economic conditions. Digital storytelling is a community-based participatory research technique found to be suitable for research with hard-to-reach communities and for exploring complex concepts and processes such as innovation (see Lambert, 2013). Participants were recruited via local expertise, and in total, fifteen digital stories focused on the same guiding topic were created: Tell me a TRUE story of a time when

² Conducted in Sweetwaters, from 27th to 31st of May 2019.

³ Conducted in Cape Town, from 24th to 28th of September 2018.

you did something different in the way that you run your business and what happened. This guiding topic was selected as a way to communicate the complex concept of “innovation” in such a way that it could be easily understood by the informal business owners. The freedom of reflection provided by the workshop environment allowed for in-depth illumination of the nature of changing business, critical events, and the nature of innovation. The guiding topic conveyed a broad understanding of innovation, informed by the Oslo Manual (OECD, 2018) definition of innovation, and reinforced through in-depth discussions in the digital storytelling workshops. The digital stories – typically a four to five-minute video clip – were factual and narrated by the informal business owners in their own words. The transcripts of the digital stories were analysed to facilitate an in-depth understanding of learning and innovation activities.

The analysis of innovation events contributes to building an understanding of how informal businesses respond to personal and financial crises events, specifically how they may use innovation to respond to such crises events and progress along their business evolution pathway. Therefore, although this study was conducted before the COVID-19 pandemic, it provides potentially useful insights into how to support informal food businesses to overcome similar COVID-related personal and financial challenges.

4. A case study of informal food services in Msunduzi, South Africa

This section presents a contextual background of the study area and analyses the nature of innovation activity in the informal food local innovation and production system based on the survey data. These results provide insight into the locally embedded nature of the innovation and production activities in the study area.

The study area, one municipal ward in Msunduzi, had a population of approximately 18,500 people, with a working-age population of 59% (Census, 2011; Community Survey, 2016), and a slightly larger proportion of females (52%). Despite consistent economic growth in recent years, unemployment and poverty levels remain high, particularly in townships and peri-urban settlements, where unemployment rates may exceed 70% (Pietermaritzburg Msunduzi Integrated Development Plan, 2018). Local community members are thus compelled to seek livelihood opportunities in the informal sector.

Similar to other township areas, informal food accounted for a large proportion of economic activities. In general, barriers to entry into food services are low, requiring little start-up capital and medium to low-level skills (Bhorat, et al., 2016, p. 6), making food services an attractive livelihood option in a resource-poor context.

4.1. A description of the informal food enterprises

The analysis in this section is based on the survey data, which included 271 informal food businesses. Most (65.7%) of these informal food enterprises started out of necessity due to unemployment, and more than a third (36.9%) to meet the basic needs of the family. A large proportion also indicated that they decided to open a food business because they liked the activity (43.2%) and/or because they had the skills required (26.9%). These businesses were

typically older than five years, with a large proportion, between 20% and 25%, older than ten years. Most (81.5%) of the business owners had at least an intermediate (grade 9) or junior certification or equivalent. Less than a third (29.9%) reported that they completed school (grade 12) (see Table 2 below).

Retail trade was reported as the main economic activity for most of the informal food enterprises, with 50.2% trading in groceries and beverages, and 12.2% in livestock, poultry, or fresh produce. A large proportion (65.7%) of these informal traders were spaza shops (i.e. 111 of 169 enterprises). Informal food and related services, including businesses selling fast-foods/take-ways and baked goods, and those providing catering services, accounted for 31.7% of the informal food enterprises. A very small proportion (4.1%) reported farming as their main economic activity. The remaining 1.8% provided cooling services to the informal traders, a crucial service that enables the businesses to store their perishable goods in cold storage. These businesses were relatively new, between one and three years old. In line with common practice in the informal sector, some of the food businesses engaged in secondary economic activities, such as doing beadwork or carpentry or selling clothing.

Most (62.4%) of the food businesses operated from home, either from a separate or dedicated space within the home. Some operated from mobile structures, including 12.8% of the food services businesses and 20.7% of the informal traders selling groceries and beverages. Few operated from a dedicated external structure, whether attached to the owner's home or on the property (3.7%), another person's home (3.0%), a non-residential building (1.5%), a taxi rank (4.4%), a footpath or street (4.1%), or a market (0.7%).

In such a resource-poor area, it is expected that access to basic services and facilities would be low. While many of the informal food businesses had access to piped water within the structure (38.7%) or on-site (41.3%), sanitation services were not as well developed, as only a third had access to a flushing toilet within the structure (32.5%) or offsite (13.3%). A large proportion (44.6%) reported access to other types of facilities.

Employment growth was minimal, and most of the food businesses employed only one or two people (see Table 2 below). The businesses accounted for about a quarter of the employment levels (26.2%) and the total turnover reported by informal businesses in the study area in 2018. Altogether, the 271 businesses reported an annual turnover of R6 903 353 in 2018, with an average of R27 949 per business.

Table 2: Description of employees in 2018.

	Total employees (2018)	Employees that completed school (2018)	Paid employees (2018)	Employees that are family (2018)	Female employees (2018)	Male employees (2018)	Increase in employees from 2017 to 2018
Retail in livestock, poultry and fresh produce	14 (1,3)	3 (0,3)	7 (0,8)	4 (0,4)	5 (0,5)	6 (0,5)	1 (0,1)
Food and related services	217 (2,5)	119 (1,6)	164 (2,1)	64 (0,9)	94 (1,1)	101 (1,2)	52 (0,6)
Retail in groceries and beverages	316 (1,9)	114 (0,8)	177 (1,2)	102 (0,8)	95 (0,6)	156 (0,9)	95 (0,6)
Other services (to informal traders)	17 (3,4)	10 (2,5)	16 (3,2)	5 (1,0)	6 (1,2)	11 (2,2)	3 (0,6)
Total food businesses	564 (2,1)	246 (1,1)	364 (1,5)	175 (0,8)	200 (0,7)	274 (1,0)	151 (0,6)

Data source: CeSTII 2017-18 IIS Survey.

Note: The average number of employees is included in brackets.

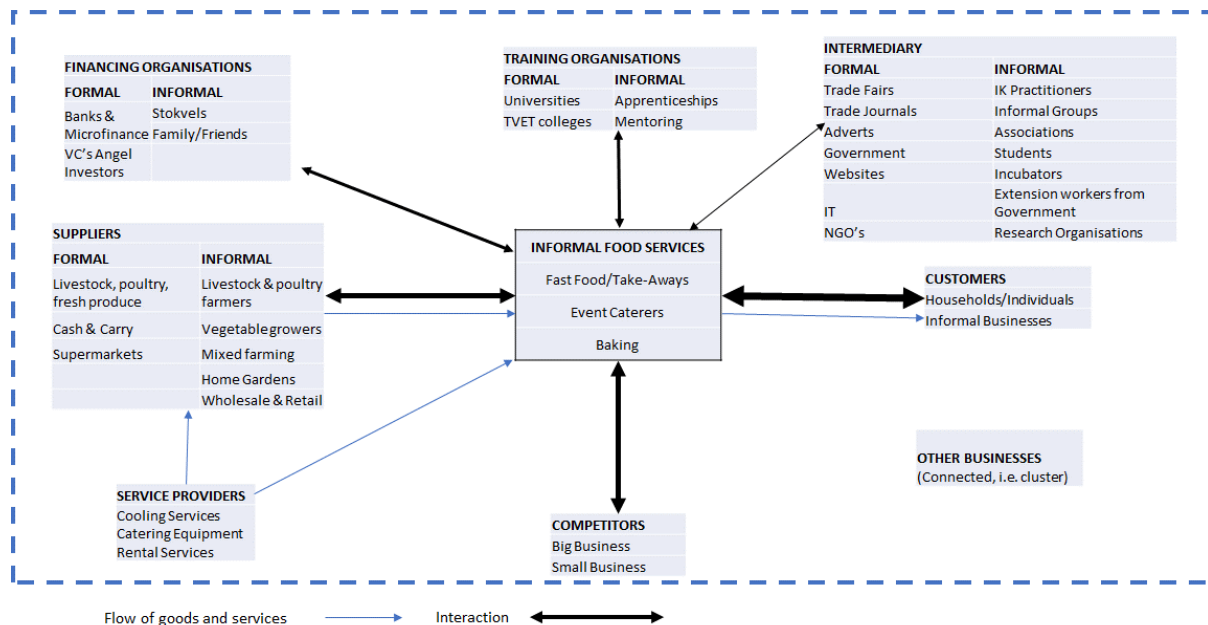
4.2. The informal food production value chain and networks supporting innovation

A simple production value chain for the informal food sector in Msunduzi links formal and informal food producers, food retailers and food services, and businesses supporting informal traders in the local area. Marketing of products is generally performed within the production unit and is primarily through word of mouth (81.5%), very similar to the general trend (81.1%) in the study area.

For illustrative purposes, Figure 2 (below) selects informal fast-food/takeaways and catering businesses as the main production unit at the centre of the food services LIPS. The production value chain of the informal food enterprises is mapped out in the lower half of the diagram. The diagram also includes specific service providers and other businesses, such as competitors and business clusters that form part of the local system. The main actors that typically play a role in supporting innovation are mapped in the upper half of the diagram. The innovation support organisations include formal education and training organisations, informal training support, formal and informal intermediary actors such as informal trader associations, and formal and informal sources of finances such as commercial banks and stokvels.⁴ It is possible to draw similar diagrams depicting each of the other two food services categories – retail in livestock, poultry, and fresh produce, and retail in beverages and groceries – as the main production units in the centre, and map their specific actors and networks.

⁴ A stokvel is a savings scheme where the members of the savings scheme pool their savings by providing regular payments into the fund. Each member receives a lump sum payout after a predetermined period of saving.

Figure 2: Informal food services local innovation and production system in Msunduzi, with the informal food-related service businesses in the centre.



Source: Authors' own.

The overall profile of the consumer base for the informal food sector reflects that of the informal sector in general in Msunduzi, with the majority of the consumer base drawn from individual households (94.5%). A large proportion (44.3%) of the customers were located within the local neighbourhood, comparable to the average of 39% for all businesses in the study area, illustrating the importance of local embeddedness that appears to be a general non-industry-specific feature of informality.

The main suppliers were businesses (35.4%) and households (52.8%). Only 7.4% of suppliers were from informal business sources, similar to that for all informal businesses in the area (9.0%). Typically, formal suppliers to the informal food businesses would be low-price retailers in the local area or nearest town or within the main city in the province (32.8%). Few suppliers were found at a distance from Msunduzi, with only 3.0% found somewhere else in the country and 0.4% outside the country.

4.3. Innovation in the informal food enterprises

In general, analysis of the innovation activities in the informal food businesses shows that most (85.6%) engaged in some form of innovation activity, resulting in product (67.2%) and process innovations (81.5%) that were mainly new to the local area (27.7%) or the local industry (26.6%). Here, a process innovation refers to “a new or improved business process for one or more business functions that differs significantly from the firm’s previous business

processes and that has been brought into use by the firm” (OECD, 2018, p.34). And a product innovation ‘is a new or improved good or service that differs significantly from the firm’s previous goods or services and that has been introduced on the market’ (OECD, 2018, p.34).

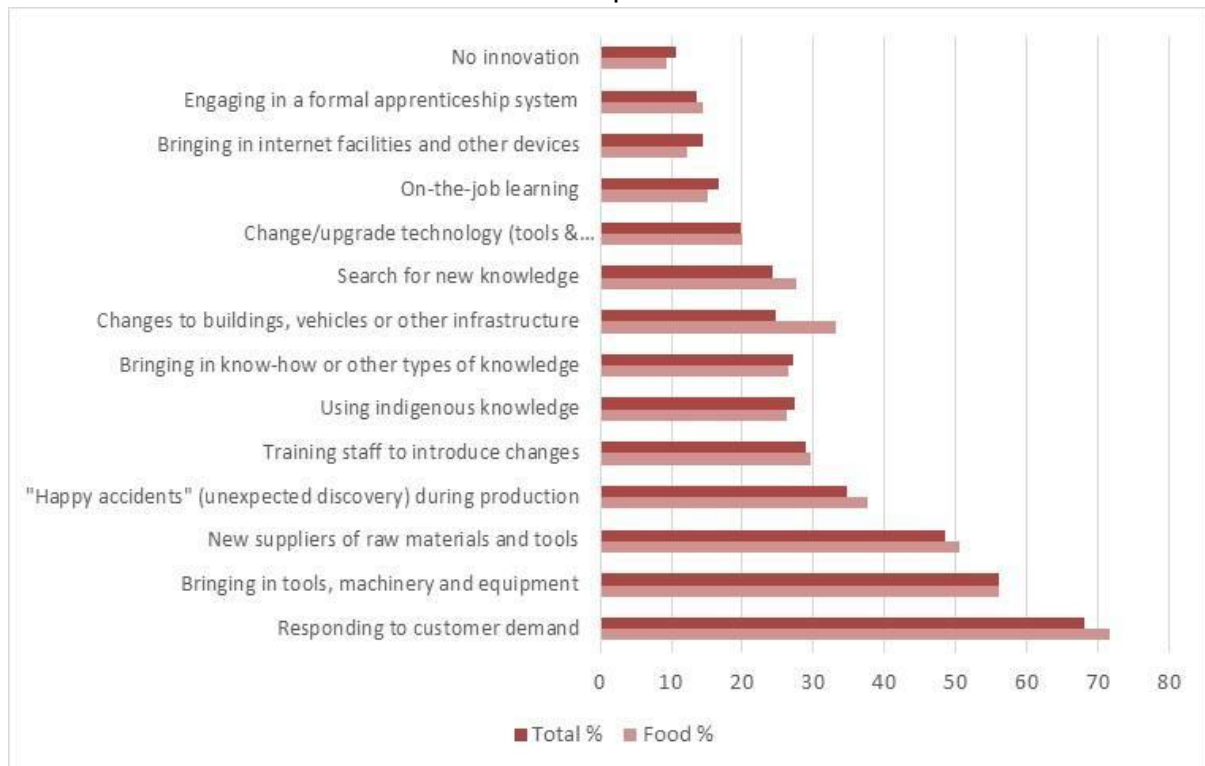
High rates of innovation of a specific nature were found, with innovation activity driven mainly by the need to respond to changing customer demand. Figure 3 (below) shows that the most frequently reported innovation activity⁵ is responding to customer demand, based on their feedback (71.7%), followed by acquiring tools, machinery and equipment (56.1%) – such as buying a fryer to allow for the sale of hot chips – and finding new suppliers of raw materials and tools (50.6%), mainly in the proximity of the business locale. The importance placed on innovating to respond to customer demand more effectively was higher for the food enterprises than the average for all informal enterprises in the study area (68.2%). This may be because of the nature of business in food retail and food services, where there is a relatively high rate of customer interaction compared with other industries. Changes to buildings, vehicles or other infrastructure were also more important for the food enterprises (33.2%) than other businesses in the study area (24.8%). Finally, a common innovation activity was described as ‘happy accidents’, that is, unexpected discoveries during production (37.5%). The food enterprises reported that the innovation often “just happened by chance” as the businesses engaged in their everyday business operations.

Learning while conducting everyday business operations, through customer feedback and experimentation – learning by using (71.6%) and doing (52.0%) – were valued most. Learning through imitating other businesses (44.3%) was higher in the food businesses than in most other informal businesses in the study area. In general, interaction within the local system was very weak and, in relation to knowledge actors and intermediaries such as NGOs, almost non-existent.⁶ Only 15.5% of the food businesses used the internet or cellphone applications, and this relatively low-level use of readily available technology was the same for the average informal business.

⁵ Based on the OECD Oslo Manual (2018, p. 33) guidelines: “(i)nnovation activities include all developmental, financial and commercial activities undertaken by a firm that are intended to result in an innovation for the firm”.

⁶ The strength of interaction between the informal food micro-enterprises and other key actors that may support innovation was assessed by using responses to a question in the 2017-18 IIS Survey on the frequency of interaction with a set of possible sources of information. The strength of interaction was measured on a scale ranging from ‘did not interact’ (0) to ‘interacted more than once a month, on average’ (1).

Figure 3: Innovation activities in the informal food enterprises, compared to the total sample.



Source: CeSTII 2017-18 IIS Survey.

In summary, the informal food services enterprises, with their low barriers to entry, offer viable livelihood opportunities for individuals in the local area who have relatively low levels of education. These micro-enterprises operate from home and were started mainly out of necessity and a need to provide for the basic needs of the family, which is in line with other research on informal food enterprises (Skinner & Haysom, 2016; Skinner, 2019; Tawodzera, 2019). Most businesses were relatively established, having been in operation for over five years. These findings, together with similar trends found in other studies (Chiliya & Roberts-Lombard, 2012), indicate that the informal food micro-enterprises are a sustainable field of economic activity and are not just established as temporary relief from unemployment. The fact that the food businesses serve mainly individuals and households in the local area indicates their significance in providing low-income consumers with access to affordable food options, which becomes even more important during and post-COVID-19 when unemployment and poverty in the area are likely to deepen.

A concern is that although the informal food micro-enterprises have been operating for so long, most do not contribute significantly to employment growth in the local area. The businesses also tended to remain necessity-driven, with uncertain levels of income.

The analysis of their innovation activities indicates a weak, customer-driven, and very locally embedded system, reflecting the prevalence of forms of local learning and capability building mainly from customers, and to a lesser extent, suppliers and other businesses. Nevertheless, in that they enable informal food enterprises to survive over time, these

innovations are critical, and if correctly supported, may lead to better learning strategies that support business evolution and growth of opportunity.

5. Innovation and business evolution in the context of informality and uncertainty

This section first analyses the heterogeneous nature of formality in the informal food enterprises in Msunduzi. Second, it explores the links between innovation and the heterogeneous nature of formality. Third, the role of innovation is investigated by exploring the relationship between crisis events prompting innovation in an informal food enterprise and the evolution towards manifesting different levels of informality within the local innovation and production system over time.

5.1. A multiplicity of (in)formality levels

Many informal enterprises reported a desire to become “a formal business” when the conditions are “right”. As one of the informal food service enterprises explained, premature formalisation can be risky:

“(...) you have to consider the money you make and if you are still going to be able to cover the things you have to, if you now also have to pay for tax, that is the tricky part...because with the money that we make, we still need to keep the business and our homes running” (Informal food service enterprise VID1119).

The criteria proposed by Mbaye and Gueye (2020) were used to explore the specific conditions of (in)formality as a starting point to identify potential business evolution pathways (Table 1 in Section 2). The specific criteria identified, based on a set of proxies selected from the 2017-18 IIS survey and interview data⁷, are included in Table 3 (below). Each informal food business was classified according to the number of criteria they met. Six levels of informality were possible, ranging from completely formal (Level 0, no criteria met) to completely informal (Level 6, all criteria met).

Table 3: Survey proxy indicators for levels of informality.

Criteria	Survey and interview data proxy
Firm size	How many people were working in the business?
Registration status	Is your business registered?
Taxation	No proxy (no data available)
Maintenance of accounts/financial statements	Does your business have a bank account?
Access to land	Business Location
Access to external finance	During the two years (2017 to 2018), how often did you interact with the following sources of information in your innovation activities? Commercial banks, microfinance banks. Did you receive any financial support?
Employee benefits	No proxy (no data available)

Source: Authors' own.

⁷ Of the 271 informal food enterprises covered by the survey, 38% were excluded from the proxy identification due to missing data. The analysis is thus based on a total of 167 food businesses.

All of the food enterprises displayed some degree of informality, with the majority (51%) classified as mostly informal or completely informal. The other half displayed higher degrees of formality, of which a large proportion was classified as semi-informal.

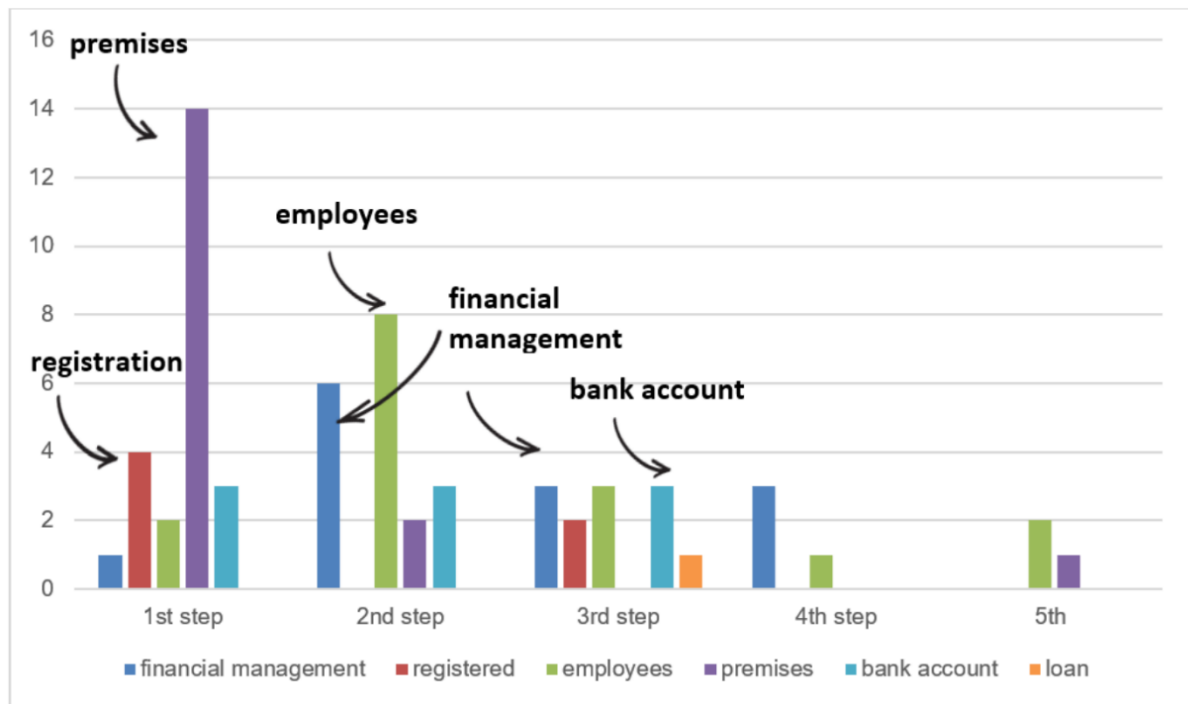
Using the in-depth qualitative data, the formalisation processes of each informal food enterprise were then analysed.⁸ As shown in Figure 4 (below), different patterns of business evolution may exist. For the informal food enterprises, having fixed premises was most important and was typically the first condition necessary for building the business. The importance of business premises is illustrated in this example provided by an informal fruit and vegetable trader in Philippi:

"I (...) started mobile vegetable selling. I carried a crate on my head and knocked on every door. It was not easy when hot, and neither were conditions better in the cold and wet winter... Things improved marginally when I bought a trolley. It enabled me to carry more and to reach far. Soon I realised the trolley got stuck in mud when it rained, and I struggled to push it. The heat of the sun still affected my products in summer... I had to find a way of getting out of the challenges and grow my business... I had to find a permanent trading place! ... I immediately started building my vegetable vending stall... Now my life has changed. I have a permanent place. I stock more. I am able to send my kids to school, buy clothes and food, pay rent and send my mother some money. I have been trading at this spot for five years now" (Informal food enterprise PH1, emphasis added).

Most of the businesses that reached a higher degree of formality, beyond becoming an employing business, reported that they put better financial management procedures in place and/or used a business bank account. Only a small proportion of the businesses reported business registration as the first step, while others only registered after other conditions were met. Significantly, although a business may have fulfilled a criterion at one point in time, this is not permanent and may change at a later point, as this quote illustrates: "I used to have a bank account, but I no longer use it as it is expensive" (Informal food enterprise VID571).

⁸ This total includes four informal food businesses operating in a peri-urban area in another major province in South Africa. The digital stories of these four businesses were produced at a digital storytelling workshop conducted as part of the research project.

Figure 4: Business evolution in the informal food enterprises.



Source: Authors' own.

The analysis thus suggests that there is more than one pathway through which informal enterprises evolve towards formalisation. Further research is needed to better understand the complex multiplicity and identify the specific pathways that informal enterprises may follow.

5.2. Innovation events and shifts in (in)formality

The digital storytelling workshops provide useful insights to deepen understanding of the nature of innovation, including the key drivers. An analysis of seven digital stories revealed a trend: key innovations were introduced in response to major events such as debt due to financial loss, losing goods due to a burglary or the business owner becoming ill. Here, these events are referred to as “innovation events”. Innovation events are distinct from the events that prompted the start of the business or an “entrepreneurial event”, although the nature of the events may be the same. For example, the absence of bookkeeping records may have a negative effect on the firm being able to access finance from formal sources, and poor management capability or presence could result in business failure from under-supervised staff, prompting innovation responses. The events triggered a change, an innovation response that often contributed to a degree of business evolution in terms of a change in degrees of informality. The typical trajectory is illustrated in Figure 5 below.

By aggregating analysis across all the digital stories, two types of innovation events can be identified: events related to financial distress and events of a personal nature (Table 4 below). A business may experience a major event once or a recurrence of the same type of innovation event. For example, a “tuckshop” business in our sample, after establishing a fixed location and employing one person, took a step to Level 3 of formality by introducing

new forms of financial management. In response to financial loss due to poor management, the business owner bought a cash register and introduced new financial management systems to better monitor transactions and record daily sales. As the business owner explained, the new financial management systems ‘helped keep track of products that were selling and those that weren’t, so we could make informed decisions on which products we could have on special the next month’. The innovation event was a stimulus for learning and change within the business, linked to a change in the level of formality.

Table 4: Innovation events, innovation and the effect on informality across the informal food businesses.

	Detail	Innovation response	Innovation Outcome	Effect on Informality
Informal food businesses in Msunduzi and Philippi				
Financial	Debt	Added goods or services based on customer demand	More customers	Added employees
	Debt	Different way of doing things	Improved the efficiency of the business	Moved to better premises
	Debt	Different way of doing things	Increased profits due to improved business management, with stock monitoring and transaction tracking to better tailor sales based on customer behaviour	Improved financial management
	Financial loss due to food not selling	Added goods or services based on customer demand	More customers	None reported
Personal	Police raided store	Added goods or services	The added service helped the business survive	None reported
	Car accident	Added goods or services and Different way of doing things	More customers and different business offerings, therefore more sustainable	Added employees
	Illness	Different way of doing things	Improved quality of business offering	Financial Management
	Burglary	Different way of doing things	Market differentiation	Registered the business
Non-food informal businesses in Msunduzi				
Personal	Was Arrested	Different way of doing things	Improved the business through the introduction of safety equipment	None reported
	Illness	Different way of doing things	Professionalised the business	Moved to better premises

Source: Authors’ own.

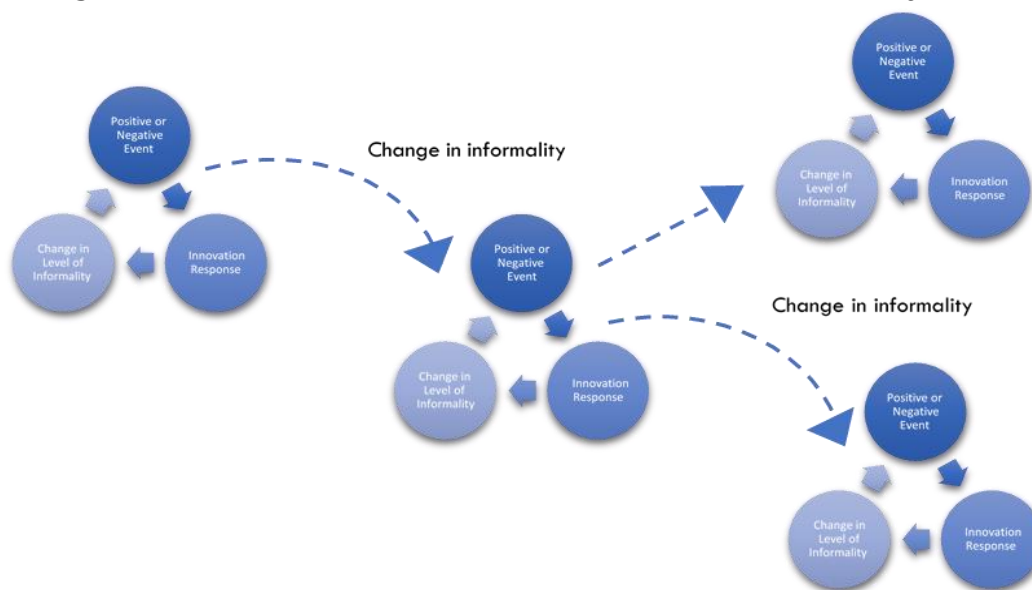
5.3. Insights on informality, innovation, and business evolution

Innovation events shape the future trajectory of any group of informal enterprises, depending on the starting state and the local environment. The innovation event could be of a positive or negative nature, but it is the resultant innovation response that ultimately causes the shifts in informality that contribute to business resilience and growth.

These cycles can take place several times and involve multiple cycles of innovation events (Figure 5 below), which may lead to increases or decreases in levels of informality. For example, to save costs, the owner may decide to close a business account (leading to

increasing informality) or formalise to access business finance (leading to an increase in formality). One event could also lead to an innovation response that helps the business leapfrog, skipping across more than one level to a higher level of formality. The converse applies, particularly in the case of a major disruption such as COVID-19, and given the resource-poor local contexts in which businesses operate. While the change in informality ostensibly is growth across different levels from least informal to completely formal, the specific pathways cannot be inferred from the limited data analysed in this paper. The pathways businesses follow are more complex and crooked, with movement from higher to lower levels of informality and back again, depending on circumstances and innovation events. This back and forth movement goes hand-in-hand with the learning process within the business.

Figure 5: An illustration of innovation events that shift informality levels.



Source: Authors' own.

What the analysis makes abundantly clear is that the attainment of formal registration is not, by itself, a guarantee of sustainability or growth. Formal registration may be driven by a specific aim of acquiring new business opportunities, for example, from public suppliers, but the informal business may choose to let that registration lapse at a later point in time. The analysis suggests that for an informal business to evolve into a successful formal business, it needs to have acquired several attributes, defined by its level of informality: it must employ people regularly, it must keep records, it needs management capabilities, and so on.

It would be useful to determine how widely applicable the set of informality criteria is through further research in other settings to test the robustness of these findings. Such a set of criteria for (in)formality would be of great practical value to the policy maker who wishes to ignite growth and evolution in informal sector businesses. The analysis using the current set of proxies allows for the identification of the state of the informality of classes of informal businesses, which, combined with a greater understanding of how business evolution proceeds as a result of innovation events, provides fresh insight into what is required for dynamic, sustainable growth.

The next section is based on this conclusion that the type of policy intervention that seeks to promote the desired change must be based on an understanding of the level of informality and the type of innovation events that prevail in any local innovation and production system.

6. Policy insights to support innovation and economic inclusion of informal micro-enterprises in local food systems post-COVID

In this section, we attempt to draw out potentially useful insights for policy promoting resilience and inclusion in local food systems. Informal food services are crucial for food security in African countries, particularly for low-income households who have been the hardest hit by the COVID-19 pandemic. The extraordinary personal and financial crises that the COVID-19 pandemic has visited upon the world tests the ability of informal food businesses to respond in ways that can ensure their survival or growth.

Based on research on innovation in informal food businesses in South Africa, this paper provides valuable insights into how informal food businesses engage in innovation in response to personal and financial crises. We show how innovation, often triggered by personal and financial crises, shapes the learning and business evolution pathways of informal businesses, contributing to their resilience. We refer to crisis events that stimulate innovation as “innovation events”.

Although this research was conducted before the COVID-19 pandemic, an understanding of how innovation takes place in the context of crisis events is an empowering tool to the policy maker whose concern is to promote resilience and inclusion in local food systems. For example, in South Africa, many informal food traders reported financial losses due to lockdown regulations restricting food trade in informal settlements. A strict curfew was introduced in 2020, and the sale of alcohol was also prohibited, affecting the livelihoods of informal taverns. Many responded by selling alcohol illegally, at a higher price. Based on insights from our case study, another response may be to diversify, to sell foods in demand but not readily available in the local area, at prices affordable to local consumers.

Government social relief initiatives and support programmes would be important to support informal business owners to respond in ways that contribute to their sustainability. However, promoting resilience in local food systems post-COVID requires a reconsideration of conventional policy approaches to the informal sector and policy intervention at different levels.

First, it is necessary to reconsider the assumptions underpinning policy aimed at promoting the graduation of informal food businesses to viable formal businesses. Our research indicates that business evolution paths are not linear, as often assumed. Informal food businesses follow complex pathways and move between multiple levels of (in)formality, and innovation is central to this process. The paper, therefore, argues that the complex trajectory that businesses follow in their quest for formalisation is an area that requires

policy targeting itself, particularly in relation to the kinds of economic restructuring triggered by COVID-19. Policy makers need an approach that recognises the complex pathways informal enterprises take to reach what may be called “sustainable formalisation”. This requires the development of policy tools that are able to effect change based on the specific state of a business, instead of the blunter instruments developed from the uni-dimensional process of formalisation through registration, based on a binary notion. A key aim of policy should be to support informal businesses to build “formalisation capability”. Rather than shifting informal businesses towards becoming “declared” and “accountable to the state”, they should be supported to evolve towards a set of conditions that enable them to operate sustainably in the formal sector. Fundamental to this is an understanding of the role innovation plays in that process.

The analysis shows that what matters most in informal businesses is how they respond to personal or financial crises through innovating. This may be part of the reason that innovation rates tend to be high in the informal sector. However, informal business owners are often not aware of the value of innovation, and their innovation strategies tend to be reactive. A simple intervention would be to promote an understanding of the value of innovation for business growth and resilience, through skills development programmes, for example.

Such interventions are crucial for building the capabilities of informal businesses. However, promoting sustainable business evolution trajectories does not only depend on building internal innovation capabilities.

Second, a policy aim should be to promote the informal sector as a learning environment that enables innovation activities that lead to progressive outcomes. As our research shows, the innovation response of an informal business involves a process of learning that may lead to a change in business evolution that may be progressive but could easily be regressive. Examples include policy interventions promoting better engagement with knowledge actors such as technical and vocational colleges, and education and training NGOs, and with formal suppliers to create opportunities for stronger linkages and learning opportunities in local innovation and production systems. Linkages with formal suppliers could be facilitated through the construction of distribution centres closer to local businesses, allowing easier and cheaper access to goods for informal businesses. Another option would be for local government to promote knowledge sharing between informal food enterprises and other businesses, including their competitors. Education and training NGOs are important partners for local government because they play a crucial role in supporting skills development and promoting learning linkages among informal businesses (Petersen & Kruss, 2021).

Third, the policy approach should recognise that the innovation and production activities of informal businesses are deeply embedded in the specific environment in which they emerge. Instruments designed to cope with the COVID-19 crisis need to take this firmly into account.

Therefore, to bring about transformative change in production and innovation within local food systems requires systemic structural change (Crush & Young, 2019) through building forward and backward linkages across value chains, stronger learning networks, and physical facilities to support the specific forms of learning needed. But also through providing basic (serviced) infrastructure for trading in the local area, building stronger support structures to address crime, and so on. Such a policy response necessitates stronger interaction and coordination across different levels of government – vertically, across local, regional, and national government departments, and horizontally, across mandates, such as for small business development, innovation, and education and training.

7. Conclusion

The contribution of the paper for the debate on how to harness innovation in the informal sector for inclusive local economic development post-COVID lies in the proposal to shift away from the policy emphasis on formality as a goal. Rather, policy makers, particularly at the local government level, acting in partnership with other relevant government departments, should focus on promoting and supporting business evolution pathways that foreground learning towards conditions that may eventually lead to progressive business evolution pathways.

Investigating mechanisms that could be responsible for driving growth in complexity in informal businesses becomes a key area of attention for further research in the field and for post-COVID policy design. The paper explored the link between innovation and informality as a first step in this direction. The evidence presented is compelling to inform strategies to mitigate the negative economic impact of COVID-19. However, it is certainly not comprehensive. Therefore, further research in other settings and economic domains would be of great value to test the findings and extend policy insights.

A useful aspect of the research is how well it lends itself to policy experimentation. For example, the proxies developed to describe levels of informality allow for an application of policy interventions at the local level that are testable through links to well-defined outcomes. This is an area where policy makers and researchers may engage in joint interventions at the local level, with an approach that is collaborative and inclusive.

While the ultimate goal of formalisation is a convenient tangible milestone for policy intervention, the economic disruption wrought by the COVID pandemic highlights the need for a shift in focus to building sustainable, profitable businesses, which requires the promotion of innovation in the informal sector through stimulating learning networks, as a central policy goal.

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