

Exploring the factors that limit the development, adoption and diffusion of innovations

A case study of informal metal manufacturers in Harare, Zimbabwe

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Background

- Several studies have pointed out that innovations have the potential to accelerate firm and industrial competitiveness.
- In the 21st century knowledge economy, knowledge and innovation have a huge chance of benefitting small informal sector businesses.
- Previous studies have focused on large-scale commercialisation of innovations, thereby overlooking informal sector innovations.
- Exploring the innovation process provides an impetus for the growth of small business through a careful understanding of the stages where the barriers are identified, the reasons for these barriers and potential solutions.
- This study explores the barriers that are raised during the innovation process, technology development, prototyping, commercialisation and the adoption of informal innovations.

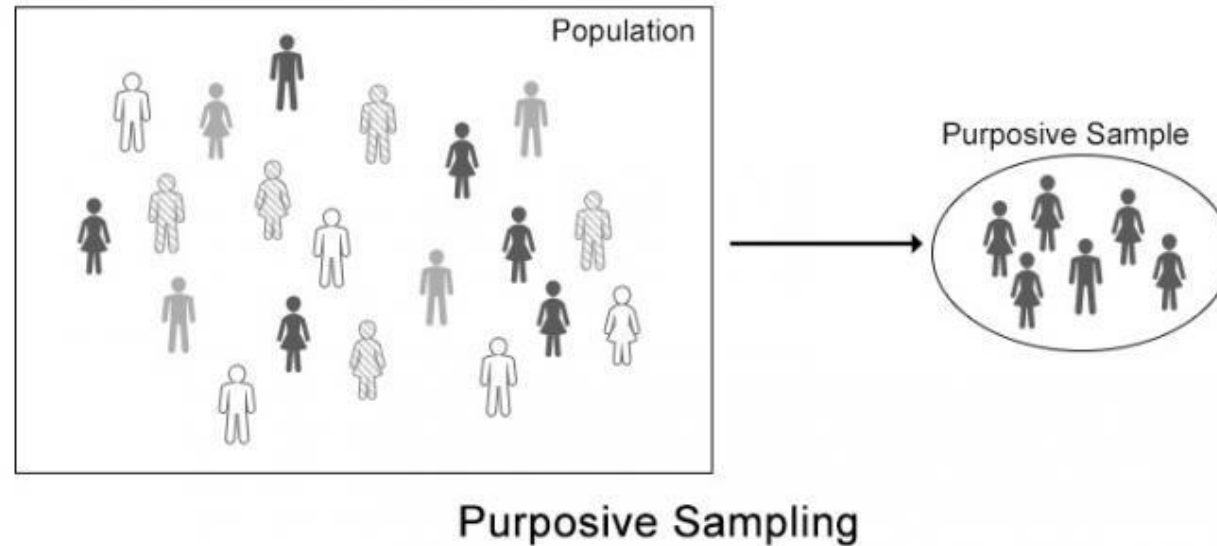
Methods - Overview

- Qualitative methods were used in the collection of primary data
 - Observations
 - (Researchers visited Mbare Siya So in Harare)
 - In-depth interviews
 - (Knowledgeable and experience candidates were selected after the site visits)



Methods – Qualitative Sampling

- 20/23 informal innovators who were available manufacture agricultural technologies such as dehullers were observed at Mbare Siya So.
- 20 informal innovators were purposively selected for In-depth interviews (1DIs)



Methods – Qualitative data analysis

- Data were transcribed, translated into English
 - (Most of the innovators were comfortable speaking in the native Shona language)
- The data were analysed using thematic analysis
 - (The most recurrent themes were identified from the transcripts that addressed the research objective of this study)



Characteristics of the informal innovators

Gender

- 20/20 participants were males
 - Gender bias in metal manufacturing

Average Age

- 28 years old
 - Younger generations who cannot find formal work.

Training

- 83% - On job training
- 17% - Vocational Training/ Tertiary Education
 - Informal training more dominant



Results

Product Development Barriers

- Those who had received some form of tertiary education or vocational training were able to be more creative in their innovations.
 - Tertiary education appears to be associated with more innovativeness
- Others learned on-the-job from the more experienced and talented innovators they worked with.
 - This valuable form of innovation is not found in tertiary education training
- Older operators were reluctant to experiment with making novel products as their customers bought the products that had been copied and they focused on making a living rather than innovating.
 - Older generations appear to be more risk averse compared to young innovators.

Results (CNTD)

- Most informal innovators do not see the importance of recording and documenting their work; they simply conceptualise a new innovation and then manufacture it, limiting the possibility of other innovators to contribute to the design thinking process of turning ideas into products.
 - Informal mind-set is a barrier to formalisation due to laxity in due diligence
- We also established that the lack of adequate tools and equipment affects the quality of products manufactured in the informal economy
 - On the other hand it becomes a driver of innovation
- Limited financing for informal innovators has discouraged innovation.
 - Their failure to record transactions and processes causes an uncertainty that destroys investor confidence: investors are formal but innovators are informal

Results (CNTD)

Prototyping Barriers

- Conflicting perspectives between the informal manufacturers and customers often clutters the design process (how the product/ technology should look like) thereby lengthening the process of innovation.

“Sometimes we get into lengthy arguments and discussions with the customers with regards to how we should modify the technology. In the end we sometimes are left with no option by to do what the customer wants.” (Informal innovator, IDI)

- Lack of consensus makes it difficult to standardise and to increase production of informal innovations.

Results (CNTD)

Commercialisation barriers

- Inadequate knowledge of intellectual property regimes hinders informal innovators from profiting from their innovations.
 - Unenforceable intellectual property rights are unattractive to potential financiers.
 - Large corporates take advantage of the informality to control, own and scale up inventions initially manufactured by informal innovators.
- Most of our participants have limited knowledge and capacity to produce in bulk for regional markets and they focus on the domestic market, based on the existing reputation of Mbare Siya So.
 - The informal production face quality challenges from standards associations for scaling up and for foreign markets.

Results (CNTD)

- Most informal innovators pointed out that the lack of support from formal institutions such as the private sector, industry and universities hinders the production and commercialisation of their innovations.
 - The bargaining power of informal innovators against formalized stakeholders is very limited and there is much moral hazard where product and process information is informal and unregulated

“I once was invited to the agricultural exhibition which was being hosted by (name withheld) and lots of people showed great interest in my device. However, they promised that I was going to receive technical and financial assistance but it’s now two years and I have never heard from them.” (Informal innovator, IDI)

Results (CNTD)

Barriers to adaption

- We learnt that resistance to changes in products or technology by end users hinders the adoption of new technologies.

“Sometimes the customers resist the new technologies that we develop, preferring the ones that they have used for a long time. Elderly people often have a problem accepting new technologies” (Informal innovator, IDI)

- The age of the customers may influence the customers’ decision to adopt new technologies as some are conservative in their thinking.

Recommendations

New models, institutions and training

- A new innovation model should incorporate a wide range of stakeholders such as universities, civic society, government, formal companies, informal innovators, industry and the end users, namely, small-scale farmers.
- Appropriate training courses and on-the-job mentorship programmes suited for informal innovators should be designed.
- There is need for support of informal innovators through the provision of well-equipped workshops with the requisite tools so as to improve the quality of their products and increase their production.

Recommendations (CNTD)

Support and linkages

- While informal innovators may continue to engage clients individually, there should be a more formal process of customer engagement that enables the informal sector to have their rights and interests protected.
- Integrated ministerial interventions are needed to support local innovators and innovations with systematic linkages and liaison with the private sector industry and universities.
- If the government reduced tax on tools so people could buy their own this would make a huge difference to the ability of workers to compete and make suitable products.

Recommendations (CNTD) 2

Information and incentives

- Appropriate ways must be found to disseminate information so as to educate informal innovators about how they can increase their productivity; that is, how to register and protect their innovations through patents, where they can obtain financial support, and platforms where they can market their innovations they benefit from their innovations.
- An incentive structure such as prizes should be created for informal manufacturers so as to facilitate the development of outside-the-box innovations.
- Use of ICT i.e. social media such as Whats App to circulate inspirational videos about how other people can learn to innovate

End of Presentation

Thank you !