

Combining quantitative and qualitative methods in ICT and sustainable livelihoods research

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Introduction

- ICTs are now regarded as an important tool in development
- However, the role of ICTs in fostering development and addressing the needs of the poor has been the subject of heated debate due to
 - High failure rate of the ICTs for development projects
 - Myriad challenges involved in leveraging ICTs in poor countries which
- Research is important in this case to provide empirical evidence on how and to what extent ICTs can be used to address the needs of the poor
- Despite increasing anecdotal evidence on the role of ICTs in addressing the needs of the poor, there is generally little body of evidence-based research to support such claims



Introduction

- ICT for socio-economic development is a prime example of a field that need to be studied from a combination of perspectives, using both qualitative and quantitative methods
 - This paper takes forward the ICT for socio-economic development debate by discussing how quantitative and qualitative research methods were used to conduct a study on ICTs and sustainable livelihoods in the selected rural areas of Tanzania
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Methodology

- The purpose of this research was to study the impact that ICTs have on various aspects of the livelihoods of the people living in rural areas.
- The study was conducted in four rural districts in Tanzania which have telecentres
- Multi-case study research design was used
- A mixed paradigm methodology was adopted and qualitative research was used as a dominant paradigm
- Data collection
 - Structured interview protocols administered to 203 users and non-users of ICTs in communities surrounding the telecentres
 - Semi-structured interview protocols administered to four managers of the telecentres
 - Eight focus group discussions conducted in communities surrounding the telecentres
 - An observation checklist was used to verify data obtained from managers, users and non-users of the telecentres

Qualitative Vs Quantitative research methods

Quantitative

- Measure a phenomenon using numbers in conjunction with statistical procedures
- Positivist epistemological and the researcher should remain distant and independent from what is being researched
- Use normative, traditional, experimental or empiricist approach
- Reality is viewed as objective and independent of the researcher

Qualitative

- Produces a detailed and a non-quantitative account of small groups, seeking to interpret the meaning that people make of their lives in a natural setting
 - Non-positivist epistemology and believes that the researcher should interact with that being researched
 - Use an interpretative, constructivist or naturalistic approach
 - Reality is constructed by the individual involved in the research situation-multiple realities exist in any situation
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Combined research methods and the theoretical framework of the study

Theoretical frameworks are empirical or quasi-empirical theory of social and /or psychological process that can be applied as a lens' to the understanding of the phenomenon

Qualitative and quantitative researchers use theory differently

Quantitative

- Theories are used deductively
- Theory is used to provide broad explanations and becomes the framework for the entire study
- Introduced early and placed towards the beginning in a plan or study.

Qualitative

- The use of theory is much more varied
 - Theory can be used to provide broad explanations that inform the study, as a an advocacy lens or perspective to guide the researcher or as an end product of research
 - Appear as an end-point for a study, as a generated theory e.g. grounded theory research
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Combined research methods and the theoretical framework of the study

- Mixed methods studies may use theory deductively or inductively, based on the emphasis on either quantitative or qualitative approaches in the mixed methods research
 - The purpose of the study was not to develop a theory as in grounded theory approaches
 - Theory was used as an up-front explanation and as a theoretical guide and a perspective to steer the study.
 - The theoretical framework was placed at the beginning of the study
 - The sustainable livelihoods framework was used to establish the link between ICTs and the livelihoods of people living in rural areas
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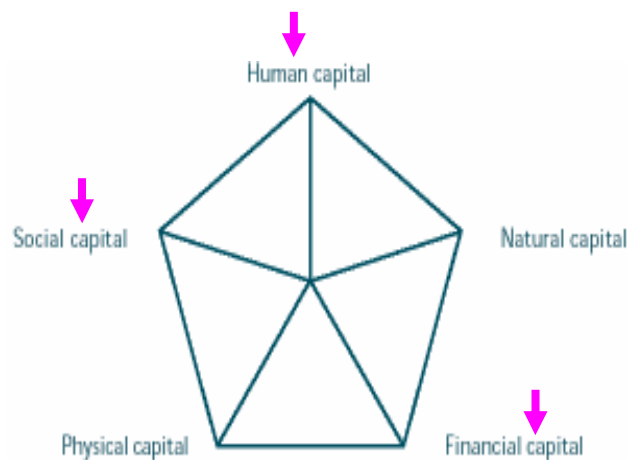
The sustainable livelihoods framework

A livelihood comprises capabilities, assets and activities which are required for living

A livelihood is sustainable when it can cope with and recover from stresses and shocks and maintain or enhance its capabilities and assets

The sustainable livelihoods framework identifies five types of assets or capital upon which livelihoods are built

Capital assets



- **Human capital** - skills, knowledge, ability to labour and good health that together enable people to pursue different livelihood strategies
- **Social capital** - social resources upon which people draw in seeking for their livelihood outcomes. i.e. networks and connectedness that increase people's trust and ability to cooperate
- **Financial capital** - Monetary resources that people use to achieve their livelihood objectives and it comprises availability of cash or equivalent that enables people to adopt different livelihood strategies



Combined methods and validity and reliability of the study

- Reliability and validity addresses issues concerning the quality of the data and appropriateness of the methods used in carrying out a research project
 - In this study the issue of validity and reliability of the study were dealt with in cognizance of the variations in which these issues are considered in both qualitative and quantitative designs
 - An appropriate balance was then established so as to suit the combined research method that this study adopted
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Validity

Quantitative research

- The extent to which the measuring devices would yield accurate results and capture the essence of what they are intended to represent

Qualitative research

- The researcher is the instrument
 - Honesty
 - Depth, richness and
 - Scope of the data achieved
 - Participants approached and
 - Extent of triangulation

Reliability

Quantitative research

- The extent to which similar results will be obtained if the study were to be repeated - repeated measures would yield constant results

Qualitative research

- Trustworthiness
 - credibility
 - transferability
 - dependability and
 - confirmability



How the study benefited from combined methods

- Helped to fit together the insights provided by qualitative and quantitative research in answering the research questions
 - Provide checks and balances with regard to shortfalls characterised by each of the data-gathering instruments e.g. observation checklist enabled the researcher to verify data obtained during interviews
 - The methods complemented each other and evidence was compared across all the methods to ensure rigorousness of the collected data.
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Results and discussion

- The sustainable livelihoods framework presents the main factors that affect people's livelihoods
 - The study investigated the impact of ICTs in three of the capital asserts i.e. Human capital, financial capital and social capital
 - ICTs services involved in this study were two folds. These include ICT services provided by telecentres and telephone services which were mainly mobile phone services
 - Various services were offered by the telecentres involved in this study. These include: Internet services which include both e-mail and www, computer training, community radio services, agriculture marketing information services
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ICTs and human capital

- Internet was rarely used the for knowledge acquisition
 - Internet was used to access information about education and opportunities for further study
 - Telecentres organised seminars, in partnership with other NGOs, which gave people opportunities to learn new ideas
 - Computer training gave people skills which provided employment for some and improved work efficiency for others
 - Respondents were excited with their knowledge of using the mobile phone. To many people this was like a 'mini' computer that they had access to
 - Very few educational programmes were provided on community radio due to staff and expertise limitations
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ICTs and social capital

- Email was mainly used for social communication
- The telecentres provided a space/venue where people could meet and exchange ideas, information and knowledge
- Some telecentres organised community members into groups and provided a space where these groups meet
- In two districts such groups were operating as a Savings and Credit Co-operative Society (SACCOS)
- The community radio was used to pass messages in cases of death, sickness and missing children or livestock
- Mobile phones were important for reducing travelling cost, communication with relatives living in urban areas and follow up on remittances from migrant family members

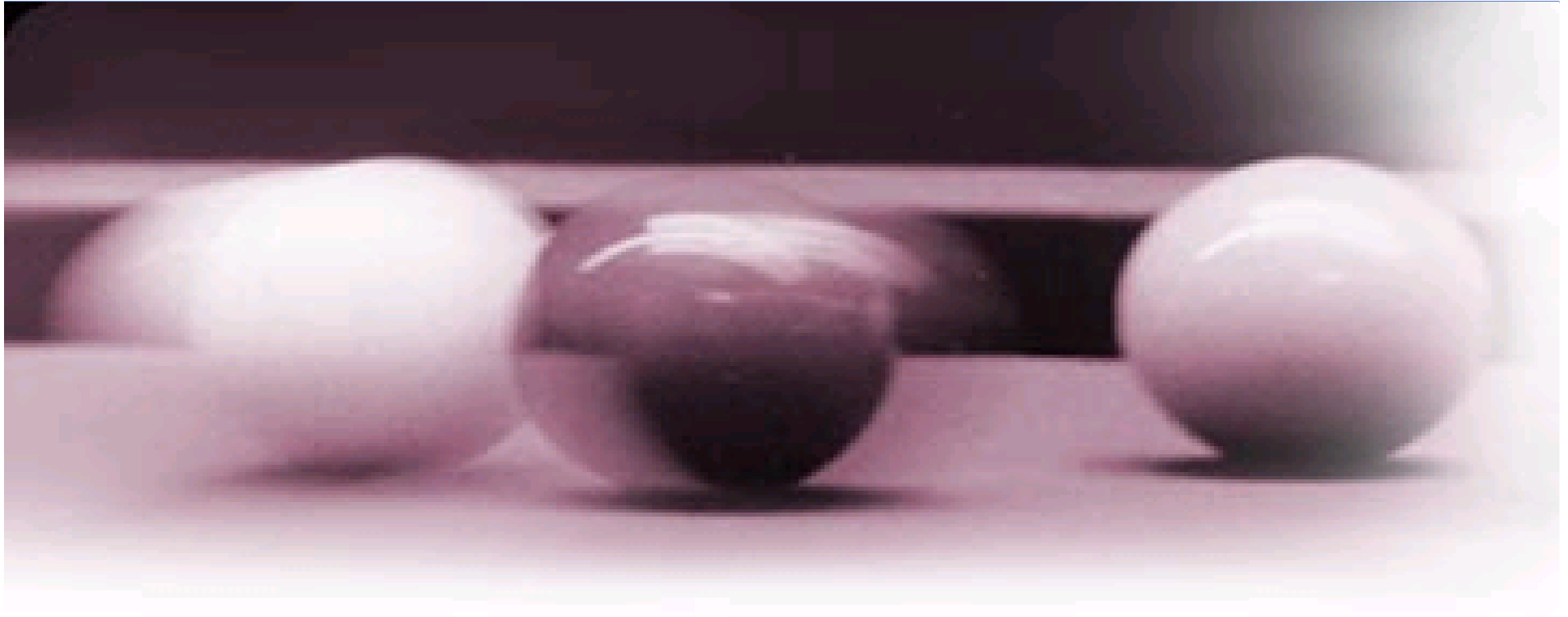


ICTs and financial capital

- Marketing and price information provided by telecentres enabled farmers to earn fair prices for their products
 - The pricing information empowered them and gave them more bargaining power over the business middle men
 - Respondents working with NGOs use the internet to communicate and stay in touch with their sponsors
 - The community radio was used for local business advertising;
 - Computer training provided by the telecentre enabled some to get jobs in NGOs, companies or secretarial service shops
 - Computer training created self-employment
 - Mobile phones created employment and entrepreneurship opportunities
 - For farmers the phone is used to enquire about the prices of their products on different markets
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Conclusion

- A combined methods approach that was adopted in this study provided a better understanding of the research problem than either of the approach used alone
 - Combined methods researchers need to understand the variations in which theoretical framework, validity and reliability are used in both qualitative and quantitative designs
 - An appropriate balance should then be established so as to suit the combined research method
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Thank you for your attention!

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