

**THE ROLE OF SOCIAL NETWORKS IN BUSINESS DEVELOPMENT,  
INVESTMENT AND EMPLOYMENT CREATION IN TANZANIA'S EMERGING  
URBAN CENTRES**

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**A THESIS SUBMITTED IN FULFILMENT OF THE REQUIREMENTS FOR  
THE DOUBLE DEGREE OF DOCTOR OF PHILOSOPHY OF SOKOINE  
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## **EXTENDED ABSTRACT**

This study examines the role of social networks in influencing business developments, investment, and employment creation in Ilula and Madizini EUCs. The study focuses on answering the following research questions: i) What are the kinds of businesses that operate in Ilula and Madizini EUCs? ii) What are the characteristic features of EUC businesses in terms of flows of goods and services in and outside Ilula and Madizini EUCs? iii) How are business networks in Ilula and Madizini EUCs structured? iv) What are available trading opportunities and potentials given business embeddedness and brokerage positions in Ilula and Madizini business network? Similarly, the study aims to test the following hypotheses: i) The size and influence of social networks of EUC business owners do not affect business performance. ii) Strong and weak social network ties of EUC businesses do not influence business investment choices in EUCs. iii) The size and influence of social networks of EUC business owners do not influence EUC business employment creation.

This study took its point of departure from Social Network Theory, which argues that economic actors' actions are embedded within their social relations and that their positions within the web of social interactions determine their opportunities and constraints. It examines business development from a social network perspective, which enables researchers to understand the evolution of different businesses in small towns over time and space. Empirically, the study focuses on Ilula and Madizini EUCs, which are in the rural areas of the Iringa and Morogoro regions in Tanzania. The study was based on quantitative data collected using survey questionnaire from a random sample of 459 and 296 businesses in the EUCs in Ilula and Madizini, respectively. Qualitative data were collected using interview guides from 38 key informants and six focus group discussions. Data processing and descriptive and multivariate analyses were done using

Microsoft Excel, SPSS, and STATA software. Organisation and analysis of social network data was done using Gephi software, while content analysis was employed to analyse qualitative information using NVIVO software.

The findings of this study showed that Ilula and Madizini EUCs are key market centres for dominant agricultural produce, mainly tomato and paddy/rice from the surrounding near and distant villages. A large proportion of the agricultural produce was traded to regional and international markets, which are also market nodes for industrial goods from other urban areas to surrounding rural areas. About 60 % of all businesses belong to the trading category (mostly unspecialised). Many of these businesses are involved in crop-trading and wholesale/retail. Service based businesses, manufacturing and transportation were seen to develop alongside major crop value-chain businesses. Opportunities created through the development of crops and other business linkages have attracted many migrants from the surrounding rural areas and other parts of the country. Migrants own about 75 % of the surveyed businesses. The product and information exchange structure in Ilula and Madizini business networks was centralised to few businesses within the trading category, mainly tomato and paddy/rice traders and wholesale/retail. Majority of businesses were not networked in the general EUC business network, mainly due to a lack of network relations with businesses within the value chain of dominant crops (tomatoes and paddy). Similar businesses also acted as brokers of products and information, both horizontally across businesses within the EUC and vertically across businesses outside the EUCs. This guaranteed networked businesses access to better and quality products and information. Business development in the EUCs was enhanced by increasing the size and influence of social network, which positively impacted business stock and sales turnovers because extensive social networks were also linked with highly influential businesses.

Business investment decisions in the EUCs and the types of businesses were influenced by business owners' strong ties of family, relatives, and friendship networks and weak ties

of business acquaintances/colleagues. These networks were particularly influential in food crop trading, transportation, and wholesale and retail business investment, most of which were directly linked to the tomato and paddy value chains. However, the relevance of strong ties in influencing investment decisions decreased as business owner human and financial capital improved. Lack of formal institutional arrangements was identified to constrain networking and inform business investment decisions.

In terms of employment creation, most businesses in Ilula (66 %) and Madizini (62 %) were run by owners without employing any extra labour. However, they created more employment opportunities indirectly through the services they demanded, like storage, transportation, security, renting shop space and cullies (loading and unloading). Indirect employment was created mostly around businesses with stronger/high network linkages. Large proportion of this employment was created by businesses operating in close connection with major tomato and paddy crop value-chains, such as trading, manufacturing, wholesale/retail and construction. Strong and weak social networks played a significant role in businesses recruitment in Ilula and Madizini EUCs. The likelihood of employment creation increased when social networks' size and influence increased among Madizini and Ilula businesses. However, the increasing influence of social networks among Madizini businesses reduced the prospects of creating employment opportunities. The result is connected to the earlier observation that many businesses were not networked in the general EUC business value chain, which is exacerbated by a lack of business-crop effect where paddy/rice and sugarcane value chains as key crops in Madizini were narrow and poorly integrated into EUC web of doing business.

Thus, from the two cases, EUCs were revealed to be focal centres of business investment in Tanzania as they facilitate rural-urban linkages through trade of goods and services to and from rural and urban areas. Social networks were further revealed to play a significant role in influencing business development, informing investment decisions, recruiting

labour, and creating employment opportunities. This is because access to market information, labour, and capital relied mainly on social networks. The likelihood of developing a business and creating more employment was also determined by increasing the scope (size and influence) of one's social network, mainly around dominant crop value chains. Therefore, as informal sector is still dominant in rural areas, social networks are instrumental in realising rural development as they enable business development by assuring access to capital, market information, goods, and labour.

Given the role of EUCs in supporting business development, it calls for government and private sector action in prioritising EUCs as trade and value addition centres that will benefit majority rural populations. Moreover, dedicated public and private sector support on the development of crop value chains around EUCs is called for to support subsequent business and rural development, investment, and creation of employment potentials for growing rural population.

**DECLARATION**

I, Stephen Aniseth Nyaki, do hereby declare to the Senate of Sokoine University of Agriculture and University of Copenhagen that, this thesis is my own original work done within the period of registration and that it has neither been submitted nor being concurrently submitted to any other institution.

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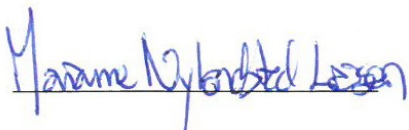
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**DEDICATION**

I dedicate this thesis to my wife Jacqueline Nyaki and my sons Isaac and Melchizedek; my grandparents, the late Mr Stephen Nakara Nyaki and Mrs Natalia Showishi Kisima; my parents, Mr Aniseth Stephen Nyaki and Mrs Ritha Henry Moshi; and to Prof. and Mrs Ntengua. Mdoe for their love and enormous spiritual, emotional, personal support, and encouragement throughout my career. This is your thesis as much as it is mine.

## TABLE OF CONTENTS

<b>EXTENDED ABSTRACT.....</b>	<b>ii</b>
<b>DECLARATION.....</b>	<b>vi</b>
<b>COPYRIGHT.....</b>	<b>vii</b>
<b>ACKNOWLEDGEMENTS.....</b>	<b>viii</b>
<b>DEDICATION.....</b>	<b>x</b>
<b>TABLE OF CONTENTS.....</b>	<b>xi</b>
<b>LIST OF TABLES.....</b>	<b>xvii</b>
<b>LIST OF FIGURES.....</b>	<b>xviii</b>
<b>LIST OF ABBREVIATIONS.....</b>	<b>xxi</b>
<b>CHAPTER ONE.....</b>	<b>1</b>
<b>1.0 INTRODUCTION.....</b>	<b>1</b>
1.1 Background.....	1
1.2 Problem Statement and Justification for the Study.....	4
1.3 Objectives of the Study.....	7
1.3.1 The overall objective.....	7
1.3.2 Specific objectives.....	7
1.4 Study Research Questions.....	7
1.5 Study Hypotheses.....	8
1.6 Thesis Structure.....	8
1.7 References.....	9
<b>CHAPTER TWO.....</b>	<b>14</b>
<b>2.0 LITERATURE REVIEW.....</b>	<b>14</b>
2.1 The Review on Small Towns and the Emerging Urban Centres.....	14
2.1.1 Emergence of EUCs.....	16

2.1.2	Economic development within EUCs.....	17
2.1.3	EUCs as centres of change.....	18
2.1.4	EUCs transformation.....	18
2.2	The Conceptual Framework.....	19
2.3	Theoretical Framework.....	21
2.3.1	Social network analysis and business networks.....	21
2.3.2	Social networks and business investment.....	23
2.3.3	Business networks and employment creation.....	26
	2.3.3.1 Methods for employment creation.....	27
	2.3.3.2 Drivers of selfemployment.....	29
2.4	Empirical Review.....	31
2.4.1	Social networks and small towns.....	31
2.4.2	Empirical review for business networks.....	31
2.4.3	Empirical review for social network and business investment choices.....	34
2.4.4	Role of social networks in employment creation.....	36
2.5	References.....	38
	<b>CHAPTER THREE.....</b>	<b>50</b>
	<b>3.0 METHODOLOGY.....</b>	<b>50</b>
3.1	Research Design.....	50
	3.1.1 Study sites.....	50
	3.1.2 Data.....	52
3.2	Development of Research Tools.....	57
	3.2.1 Design of network tool.....	57
	3.2.2 Tools for qualitative data.....	58
3.3	Data Collection.....	60
	3.3.1 Selection of businesses.....	60

3.3.2	Qualitative interviews with key informants.....	64
3.4	Data Processing and Analysis.....	65
3.4.1	Processing of qualitative data.....	65
3.4.2	Processing quantitative data.....	66
3.5	Data Validity, Reliability and Ethical Considerations.....	68
3.6	References.....	70
	<b>CHAPTER FOUR.....</b>	<b>72</b>
	<b>MANUSCRIPT ONE.....</b>	<b>72</b>
4.0	<b>THE ROLE OF BUSINESS NETWORKS ON BUSINESS DEVELOPMENT IN EMERGING URBAN CENTRES IN RURAL AREAS IN TANZANIA.....</b>	<b>72</b>
	Abstract.....	72
4.1	Introduction.....	73
4.2	Literature Review.....	76
4.3	Methodology.....	79
4.3.1	Data collection and analysis.....	80
4.3.2	Sample and sampling design.....	82
4.4	Results.....	86
4.4.1	Characteristics of the businesses in the EUCs.....	86
4.4.2	Business networks and the flow of goods and services.....	89
4.4.2.1	Purchase and selling networks in and outside the EUCs.....	89
4.4.3	Structure of business networks in EUCs.....	90
4.4.3.1	Embeddedness and brokerage in product networks.....	91
4.4.3.2	Brokerage in product networks.....	92
4.4.4	Information exchange network.....	97
4.4.4.1	Embeddedness in information networks.....	97

4.4.4.2	Brokerage in information networks.....	99
4.4.5	Social networks and business performance.....	104
4.5	Discussion.....	106
4.6	Conclusion and Policy Implications.....	109
4.6.1	Conclusion.....	109
4.6.2	Policy implications.....	111
4.7	Acknowledgements.....	111
4.8	Disclosure statement.....	112
4.9	References.....	112
	<b>CHAPTER FIVE.....</b>	<b>118</b>
	<b>MANUSCRIPT TWO.....</b>	<b>118</b>
<b>5.0</b>	<b>SOCIAL NETWORKS AND BUSINESS INVESTMENT IN EMERGING URBAN CENTRES IN RURAL TANZANIA.....</b>	<b>118</b>
	Abstract.....	118
5.1	Introduction.....	119
5.2	Literature Review.....	121
5.3	Methodology.....	124
5.3.1	Study design and study sites.....	124
5.3.2	Data.....	126
5.3.3	Sampling.....	126
5.3.4	Analytical framework.....	127
5.4	Results.....	130
5.4.1	Distribution of businesses in the EUCs.....	130
5.4.2	Business investment and the role of social networks.....	133
5.4.3	Influence of social networks on the choice of business investment.....	134
5.4.4	Sources of capital.....	139

5.5	Discussion.....	140
5.6	Conclusion.....	143
5.7	Acknowledgements.....	144
5.8	Disclosure statement.....	145
5.9	References.....	145
	<b>CHAPTER SIX.....</b>	<b>149</b>
	<b>MANUSCRIPT THREE.....</b>	<b>149</b>
<b>6.0</b>	<b>EMPLOYMENT CREATION THROUGH SOCIAL NETWORKS IN EMERGING URBAN CENTRES IN RURAL TANZANIA.....</b>	<b>149</b>
	Abstract.....	149
6.1	Introduction.....	150
6.2	Literature Review.....	152
6.3	Methodology.....	156
6.3.1	Study sites.....	156
6.3.2	Study design.....	157
6.3.3	Sampling and data collection.....	158
6.3.4	Analytical methods.....	159
6.4	Results.....	161
6.4.1	Business, agricultural and employment characteristics.....	161
6.4.2	Employment creation across different business categories.....	163
6.4.3	Role of social networks in recruiting labour.....	169
6.4.4	Social networks and employment creation.....	170
6.5	Discussion.....	173
6.6	Conclusion and Policy Implications.....	175
6.7	Acknowledgements.....	176
6.8	Disclosure Statement.....	177

6.9 References.....177

**CHAPTER SEVEN.....184**

**7.0 GENERAL SUMMARY, CONCLUSIONS, AND POLICY**

**IMPLICATIONS OF THE STUDY.....184**

7.1 General Summary.....184

7.2 Conclusions.....191

7.3 Policy Implications.....192

7.4 Contributions to the Existing Body of Knowledge.....193

**APPENDICES.....195**

## LIST OF TABLES

Table 3.1:	Summary description of business categories based on their operational characteristics/environment.....	54
Table 4.1:	Description of business owners in Ilula and Madizini EUCs.....	87
Table 4.2:	Category of studied businesses in Ilula and Madizini EUCs.....	88
Table 4.3:	OLS and 2SLS regression of influence of social network on business performance.....	105
Table 5.1:	Marginal effects of a probit model for factors that influence the probability of seeking support from strong and weak ties.....	134
Table 5.2:	Marginal effects of a multinomial logit model for factors that influenced the choice of business.....	138
Table 5.3:	Sources of start-up capital among small businesses in the two EUCs in percentages.....	140
Table 6.1:	Business owners' farm and employment characteristics.....	163
Table 6.2:	Business categories and the amount of direct and indirect employment created.....	168
Table 6.3:	Social network methods of recruiting labour in Ilula and Madizini EUCs.....	170
Table 6.4:	Employment creation in Ilula and Madizini using log likelihood estimates of a Tobit model.....	172

## LIST OF FIGURES

Figure 2.1:	Emerging typologies of small towns.....	15
Figure 2.2:	Emerging Urban centre within the rural-urban transformation process.....	17
Figure 2.3:	Conceptual framework.....	20
Figure 2.4:	Multi Stakeholder networks for collaboration, knowledge exchange and perceived influence in Busundi, Democratic Republic of Congo (DRC) and Rwanda.....	33
Figure 3.1:	Map of Tanzania showing the location of Ilula and Madizini EUCs.....	52
Figure 3.2:	Sentinel map of Ilula (a) and Madizini (b) EUCs and location of surveyed businesses.....	63
Figure 4.1:	Map of Tanzania showing Ilula and Madizini EUC.....	82
Figure 4.2:	The location of surveyed businesses in Ilula (a) and Madizini (b) EUCs. .	85
Figure 4.3:	Ilula (a) and Madizini (b) product network ordered using Yifan Hu proportional layout algorithm where node size represent the degree centrality and node colour represent business category.....	94
Figure 4.4:	Ilula (a) and Madizini (b) brokerage network mapped using Openord layout with node colour representing business category, node size representing betweenness centrality, and edge colour depicting location..	95
Figure 4.5:	Ilula (a) and Madizini (b) information network graph ordered using Yifan Hu layout algorithm where node size represent the degree centrality and node colour represent business category.....	98
Figure 4.6:	Ilula (a) and Madizini (b) information brokerage network, structured using openOrd layout where edge colour represent location, node	

colour represents business type and node size represents betweenness centrality.....103

Figure 5.1: Map of Tanzania showing Ilula and Madizini EUCs.....125

Figure 5.2: Google Earth aerial shot of the distribution of the businesses surveyed in Ilula and Madizini.....131

Figure 5.3: Ilula (a) and Madizini (b) business network graphs plotted using Geo Layout with degree represented by node size and business category by colour.....132

Figure 6.1: Map of Tanzania showing Ilula and Madizini EUCs.....157

Figure 6.2: Tomato business flow diagram representing businesses, actors, process, flow of goods within the tomato value chain and employment opportunities created along the chain in Ilula EUC.....166

Figure 6.3: Paddy/rice business flow diagram representing businesses, actors, process, flow of goods within the paddy/rice value chain and employment opportunities created along the chain in Madizini EUC.....167

**LIST OF APPENDICES**

Appendix 1:	Business survey questionnaire.....	195
Appendix 2:	Interview guides.....	211
Appendix 3:	Summary of issues discovered in the qualitative interviews in Ilula and Madizini EUCs.....	214
Appendix 4:	Madizini food crops supply variations and their sources.....	222
Appendix 5:	Diagrammatic summary of tomato flow and employment created in Ilula.....	223
Appendix 6:	Correlation matrix of social network and businesses and business owner characteristics.....	225
Appendix 7:	Ethnic groups from the EUCs.....	226
Appendix 8:	Purchase and selling networks in Ilula and Madizini EUCs.....	227

### LIST OF ABBREVIATIONS

ADB	African Development Bank Group
BRAC	Base Realignment and Closure
CDF	Cumulative Distribution Function
CSV	Comma Separated Value
DANIDA	Danish International Development Agency
EUC	Emerging Urban Centres
ILO	International Labour Organisation
IMP	Industrial Marketing and Purchase
IV	Instrumental Variables
MNLM	Multinomial Logit Model
MoCU	Moshi Cooperative University
MUCOBA	Mufindi Community Bank
NMB	National Microfinance Bank
OECD	Organisation of Economic Cooperation and Development
PKSG	Post-Keynesian Economics Study Group
RUCROP	Rural Urban Complementarities for the Reduction of Poverty
RUT	Rural Urban Transformation
SACCOS	Savings and Credit Co-Operative Society
SAEBS	School of Agricultural Economics and Business Studies
SHT	Structural Hole Theory
SNA	Social Network Analysis
SWT	Strength of Weak Ties Theory
TASAF	Tanzania Social Action Fund
TEO	Township Executive Officer

TRA	Tanzania Revenue Authority
TURSACCOS	Turiani Saving and Credit Co-Operative Society
UNDESA	United Nations Department of Economic and Social Affairs
URT	United Republic of Tanzania
VEO	Village Executive Officer
VICOBA	Village Community Banks
2SLS	Two Stage Least Squares

## CHAPTER ONE

### 1.0 INTRODUCTION

#### 1.1 Background

The rapid growth of Emerging Urban Centres (EUCs) in the rural areas of the developing world have attracted significant attention in the recent rural urban development literature (Birch-Thomsen *et al.*, 2013; Larsen and Birch-Thomsen, 2015; Lazaro *et al.*, 2017ab; Steel *et al.*, 2019). The increasing attention of EUCs emanate from the fact that rural areas experiencing increasing population and declining share of farm employment (Gollin and Goyal, 2017; Haggblade *et al.*, 2010). The EUCs within small towns in the rural areas have emerged as avenues that support business development and create employment opportunities. The growth of EUCs in rural small towns represents a larger proportion of growth occurring in urban areas and has registered a significant impact on poverty reduction in rural areas compared with urban areas (Wenban-Smith, 2015; World Bank, 2018). While the agricultural sector predominates in rural areas, the role of small towns in supporting non/farm business development is turning them into epicentres of rural development (Lazaro *et al.*, 2019). Much of the transformation is documented to occur around major crop value chains as catalyst for business development. This transformation is manifested in changes to product mixtures, productivity levels, exchanges of resources and information and products. The spill-over effects of these changes on investments and their corresponding multiplier effects have generated a keen interest in such knowledge in the recent rural-urban development literature (Satterthwaite and Tacoli, 2003).

Tacoli and Satterthwaite (2002) and Tacoli (2017) argue that small towns have five key functions: first, as centres for the production and distribution of goods and services to surrounding rural regions; second, as markets for agricultural produce from the rural

regions to local, regional and export markets; third, as centres for the growth and consolidation of non-farm activities and employment, largely in businesses, financial intermediaries and public service centres; fourth, in attracting migrants from rural areas who might move to cities and those from urban areas who find opportunities in rural areas; and fifth, as centres for managing natural resources in a context of increasing population.

Much further, with increasing globalization and the development of global value chains, small towns are noted to play a central role in influencing networks among rural, urban and international markets (Agergaard *et al.*, 2009; Roberts, 2016). Due to geographic location of small towns, increasing numbers of actors, are all observed to be concentrating their activities in small towns (Dorosh and Thurlow, 2013). These ranges from value-chain actors like input suppliers, farmers, crop traders, transporters, storage agents and financial intermediaries, as well as other actors in non-agricultural ventures such as retail businesses and public and private institutions (school, hospitals).

The interaction of these economic actors in small towns is documented as having been built up, strengthened, and harmonised by the social networks of the indigenous populations and migrants of these small towns (Tacoli, 2003; Andersson, 2011). As the scale of their interactions develop, widespread webs of social networks are documented to grow, thus affecting and enabling exchanges, interactions and flows of resources (Ford and Mouzas, 2013). This structure is commonly built around co-occurrences within groups and cemented by social ties created through kinship, ethnicity and similarity of individual attributes (peer groups), as well as flows of goods, services and information (Borgatti *et al.*, 2013). Granovetter (1985, 2018) treats the interaction as a social relational process within which the actions of economic actors are embedded.

Tacoli (2017), Leinbach (1992), Richardson and Townroe (1986) and Rondinelli (1983) argue that performance of small towns should be evaluated in terms of how efficient they are in reinforcing rural-urban linkages by; i) stimulating business investment and productivity in the agriculture sector, and; ii) providing essential services and supporting income growth through employment creation. Therefore, in these arguments, the role of social networks is still implicitly seen to be a core stem to performance of these functions. This conforms to Tacoli and McGranahan (2015) and Tacoli (2003) substantiation that the realisation of rural and urban development around small towns depends on the ability of individuals to employ their extended social networks. This is due to the fact that, networks ease access to information, thus broadening migration options, encouraging business investment, and supporting agricultural intensification and employment opportunities. The process which is influenced by social networks, kin and family ties between urban and rural individuals which are stronger around small towns than in city areas, mainly due to their proximity (Tacoli, 2003).

In the present case, social networks enter as a central argument into how rural development can be supported through its involvement in understanding business development processes, investment support and employment creation. This is because individuals in rural areas stand to gain from understanding business opportunities and influencing labour movements and employment searches if existing firms' social networks are well employed (Tacoli, 2017). The process which is supported by the strategic positioning of small towns where aspects of rural and urban areas interact. This produces a special mix of networks and interaction, which can be a special recipe towards business development and employment creation for both rural and urban populations.

In this context, examination of business developments within a social network perspective enables researchers to understand the evolution of different kinds of businesses in the small towns over time and space. Building the analysis around social networks while also investing arguments around the role businesses in small towns play in supporting employment creation and income generation heightens our understanding of the role of social networks in rural development. Thus, while building on the work by Tacoli (2017), Leinbach (1992), Richardson and Townroe (1986) and Rondinelli (1983), this study empirically introduces aspects of social networks in supporting business development, investment and creation of employment opportunities in small towns of rural sub-Saharan Africa.

## **1.2 Problem Statement and Justification for the Study**

The emphasis on understanding social networks is based on the roles they play around small towns in supporting rural-urban linkages, spearheading business development and employment creation, and it has been brought up in the literature (Carlini *et al.*, 2013; Freire-Gibb and Nielsen, 2014). Although functions of small towns specifically around development of the agricultural sector, are innate in the widely advocated country policy objectives of supporting rural-urban development, the question on how social networks are, and how they function lack empirical attention. This is with particular relevance to Tanzania as a developing country where economic transformation spearheaded by interaction of primary and secondary sectors like agriculture and manufacturing is expanding in the small towns of rural settings (Gollin and Goyal, 2017). These interactions fuel business investment and employment creation to a growing number of rural and urban workforce (Borgatti and Lopez, 2011; Borgatti *et al.*, 2013; Tacoli, 2007, 2017; Goyal, 2016).

The potentials of small towns in the rural area in fuelling business investments and employment generation has been brought to discussion in number of studies (see Dutta, 2002; Larsen and Birch-Thomsen, 2015). Studies by Aldrich and Zimmer (1986), and Dubini and Aldrich (1991b) have demonstrated that social networks are central to business development and recruiting labour. Freire-Gibb and Nielsen (2014) in the same context described that, social networks are more relevant to rural businesses as compared to urban counterparts because of resource mismatch. This is because, while there are more formal institutional arrangements in urban areas to aid business development, rural areas on the contrary have a large informal sector with few or no institutional arrangements. While small towns provide a venue for rural business development and finding employment opportunities, social networks come to play as a means for labour recruitment, and for investors to obtain products, capital, and market information. While it is theoretically described, empirical evidence showing how networks work to reconcile markets, capital and employment is scant. Information, which is of particular importance in understanding rural development dynamics and designing future developmental trajectories for a transforming economy dominated by informal arrangements.

According to Tacoli and McGranahan (2015), lack of understanding on the role of social networks has been the major factor constraining traders and job-seekers from finding markets and employment opportunities among large numbers of urban poor in Vietnam. Few other studies have highlighted the relevance of social networks in supporting market development (Olsen *et al.*, 2014; Ring *et al.*, 2010), business investment and employment creation (Mabadu, 2014; Susomrith and Suseno, 2017). However, they lack gravity towards and around present-day rapidly urbanising small towns of the sub-Saharan Africa. With a growing emphasis on the role of small towns in rural-urban development, the need to analyse and understand how social networks have shaped and continue to shape

business development by supporting business investment, the flow of goods and services, and employment creation could not be given greater emphasis.

This study aims to contribute to rural urban development literature by empirically demonstrating how social networks in EUCs of rural localities play a role in channelling resource like information, capital, goods, and labour. Specifically, it focuses on the environment where expanding rural population intend to invest in EUCs and find employment while facing uncertainties exacerbated by the large informal sector and limited capital, skills, and information. Further, the study contributes to the theory of social networks by displaying how strong and weak<sup>1</sup> social network ties of family and business acquaintances play varied roles in rural resource allocation and supporting business investment and employment.

The study also falls within broader Sustainable Development Goals (SDGs) goal 08 and 11 aiming at promotion of sustained, inclusive and sustainable economic growth, full and productive employment, decent work for all, and making cities and human settlements inclusive, safe, resilient and sustainable (United Nations, 2015). The main objectives of SDG 11 in relation to this study are to support positive economic, social and environmental linkages between urban, peri-urban and rural areas by strengthening national and regional development planning (United Nations, 2015). In practice, the goal broadly stresses that actors should invest in developing networks among individuals and institutions involved in bringing about social, economic and environmental development, whose effect is felt through increased incomes, employment and poverty reduction.

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<sup>1</sup> Weak ties include ties or links whose strength in terms of combinations of the amount of time, emotional intensity, intimacy/mutual confounding, and the reciprocal services that characterise the tie is low. For instance, for a businessman weak tie will include individuals and institutions in his business community. Strong ties, on the other hand, will include friends, family and spouse and relatives with whom he has invested more of the above-mentioned attributes (Granovetter, 1985)

Furthermore, the study contributed to the Tanzania Development Vision 2025 target two of transforming the economy from a predominantly agricultural one to a diversified and semi-industrialized economy with a substantial industrial sector comparable to typical middle-income countries. This is concordant with the Second Five Year Development Plan 2016/17-2020/21 (FYDP II) with the theme: “Nurturing and Industrial Economy” and the Third Five Year Development Plan 2021/22-2025/26 (FYDP III) with the theme: “Realising Competitiveness-led Export Growth”.

### **1.3 Objectives of the Study**

#### **1.3.1 The overall objective**

The overall objective of this study is to examine the role of social networks in business development, investment, and employment creation within EUCs.

#### **1.3.2 Specific objectives**

Specifically, the study aimed:

- i. To examine the role of social networks in supporting business development within Ilula and Madizini EUCs;
- ii. To examine the role of social networks towards business investment choices among EUC business owners; and
- iii. To examine the role of social networks in employment creation within Ilula and Madizini EUCs.

### **1.4 Study Research Questions**

- i. What are the kinds of businesses that operate in Ilula and Madizini EUCs?
- ii. What are the characteristic features of EUC businesses in terms of flows of goods and services in and outside Ilula and Madizini EUCs?

- iii. How are business networks in Ilula and Madizini EUCs structured?
- iv. What are available trading opportunities and potentials given business embeddedness and brokerage positions in Ilula and Madizini business network?

### **1.5 Study Hypotheses**

- i. The size and influence of social networks of EUC business owners do not significantly affect business performance.
- ii. Strong and weak social network ties of EUC businesses do not significantly affect business investment choices in EUCs.
- iii. The size and influence of social networks of EUC business owners do not significantly affect EUC business employment creation.

### **1.6 Thesis Structure**

This thesis is divided into seven chapters. Chapter one presents an introduction, including the background to business development and the role of social networks in influencing business investment and employment creation in EUCs. The chapter proceeds with statements of the problem, objectives, research questions and hypotheses of the study. Chapter two presents a review of the theoretical literature as well as the analytical framework, and conceptual framework. Chapter three is a methodological chapter explaining how the study was designed, including a description of the study sites, a sample selection process, the kinds of data and tools for data collection, how data management and processing procedures were observed, and ethical considerations made in collecting and managing the data on social networks. Chapter four presents the first manuscript which characterises businesses in the EUCs and discusses the role social networks play in supporting EUC business development. Chapter five presents the second manuscript, which showcases spatial networks of exchange and describes the role that

social networks play in influencing business investment decisions in the EUCs. Chapter six presents the third manuscript which examines the role played by social network in recruiting labour, and how business owner social network characteristic is instrumental in employment creation prospects. Finally, chapter seven presents a summary of the key conclusions and policy implications of the study, as well as the contribution of the study to the body of science.

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## **CHAPTER TWO**

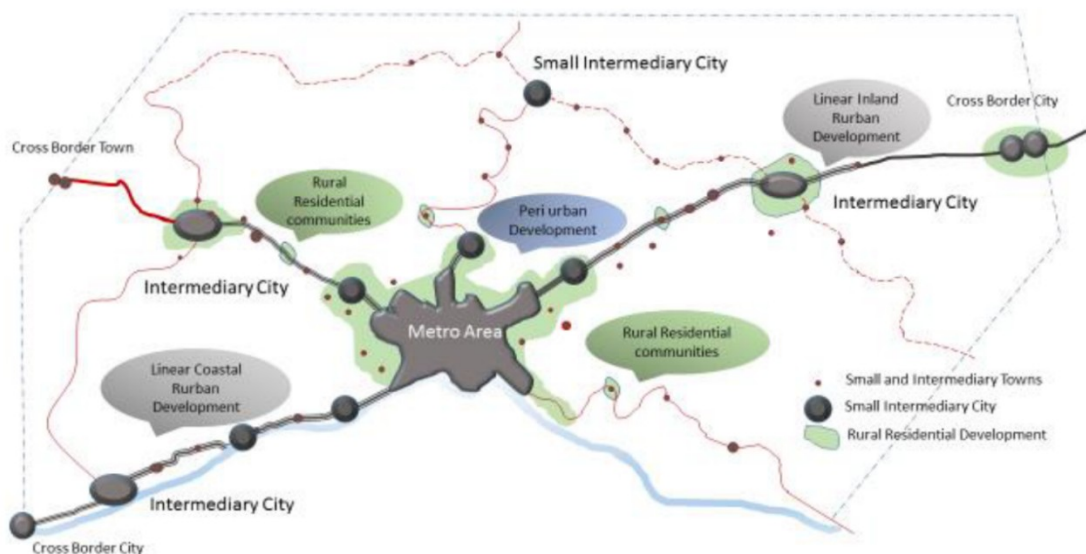
### **2.0 LITERATURE REVIEW**

This chapter provides a critical review of literature related to key concepts, overall theory, and analytical methods used in this study. First, the chapter reviews the concepts and dynamics of EUCs. Second, the chapter describes a conceptual framework that show how different concepts are linked and operationalized to meet the study objectives. Third, it delineates theories related to social network, discusses how the social network theory relates to business networks and the way it has been adopted to understand business investment and employment creation. Fourthly, the chapter reviews the literature on analytical methods and debates in its application to business investment and development as well as employment creation within the Social Network Analysis (SNA) context.

#### **2.1 The Review on Small Towns and the Emerging Urban Centres**

The concept of EUC as stipulated by Lazaro *et al.* (2019) represents a fast-growing section of a small town which experience fast increase in population and economic development. In most developing countries, small towns comprise other large rural areas with large farmland and dispersed population. Most of these towns are categorised based on population structure. For instance, Tacoli and Satterthwaite (2002) term them as small and/or intermediate urban centres where there is a population of 5 000 to 100 000 inhabitants. However, a sizable proportion of this population is concentrated around market towns and administrative centres. The proportion of population and administrative boundaries are identified as key terms in this definition. However, population thresholds differ across nations and regions, thus bringing policy debates regarding what and how small town is small.

To circumvent such discussions, scholar's advice to disentangle the differences using their functional structures like service provision, facilities, and infrastructure based on the population of the place (Tacoli, 2004). This engulfs the geographical context of a small town and the level of economic activity and its role in regional development, putting aside the resource proportions and population (Leinbach, 1992; Tacoli, 2006; Tacoli and McGranahan, 2015). The discussion is synonymous to clarification on typologies of small towns characterised by location and population sizes (Figure 2.1). Roberts (2016) present transportation routes as the key factor which shape the emergence and expansion of small towns.



**Figure 2.1: Emerging typologies of small towns**

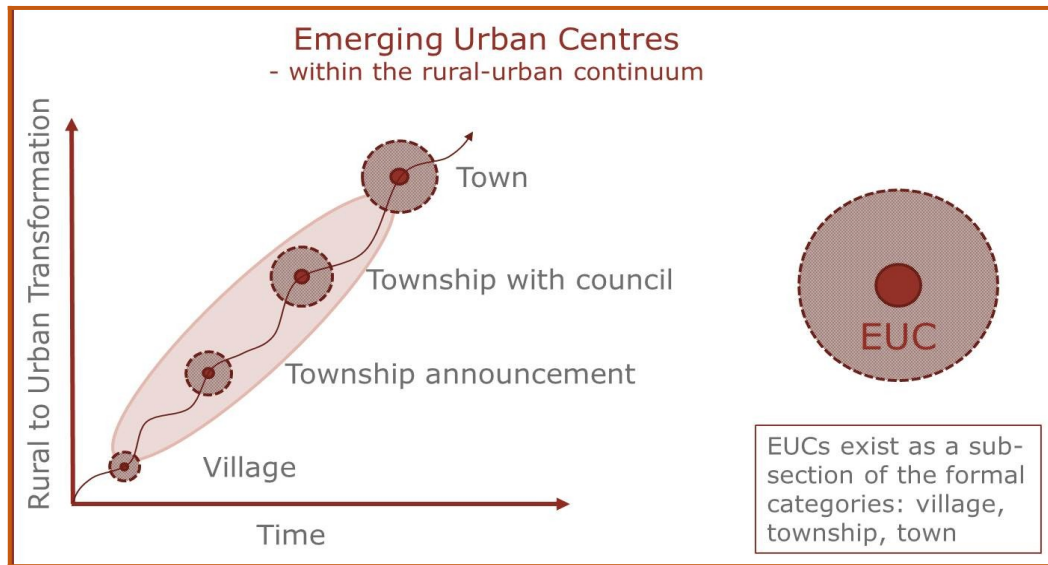
**Source: Roberts (2016)**

Within the context of developing countries in the sub-Saharan Africa, while getting clarifications from the typologies of small towns, these areas are termed as EUCs. The term emanate from the fact that these EUCs were observed to experience fast growth in economic activities (markets and the rate of economic linkages) (Lazaro and Birch-Thomsen, 2013). These factors create employment opportunities and attract more migration than in other surrounding rural areas. The term is also acclimatised to EUCs in

the rural fringes where facilities and infrastructures are limited as compared to a city and the economy is much connected to one large sector like agriculture which is the primary employer of the large rural population. However, the concept of EUC does not revolve or substitute the naming of small towns, but it is based on specific boundaries within the small town where there is a large proportion of the population, where processes of exchange or market creation (businesses in this context) are.

### **2.1.1 Emergence of EUCs**

To cement the concept, the functional task of these EUCs in supporting rural-urban transformation is key as they play a vital role of linking rural and urban economies (through forward and backward linkages) particularly with key sectors like agriculture and commerce (Larsen and Birch-Thomsen, 2015; Tacoli, 2004). In Tanzania, most of these small towns are not registered as urban centres. Some are however in the process of institutional/governance transformation from village as the smallest unit to a township and ultimately a town council (Figure 2.2). The move, which is largely driven by the growing population. As emphasised in Lazaro *et al.* (2019), EUCs are part of the larger area of the township undergoing rapid change, they constantly attract urbanisation as they are known to be the first points of migration particularly for rural and urban population (Lazaro *et al.*, 2019; Roberts, 2016).



**Figure 2.2: Emerging Urban centre within the rural-urban transformation process**

**Source: Lazaro *et al.* (2017b)**

### 2.1.2 Economic development within EUCs

The perspective of EUC development, as far as its social, economic, and cultural transformation is concerned, is conceptually understood to be a mix of- and driven by many factors. One of the factors is population growth through natural process and migration. Migration into these EUC is documented by Agergaard *et al.* (2019), to be internal migration, mainly from the surrounding villages especially for rural agricultural related purposes and local businesses and some from other regions within the country. Migration into these EUCs is also seasonal, driven by variations in agriculture or cropping seasons. High immigration being during the harvesting season and low between planting seasons when the rate of business activity decline. Other factors are changes in administrative structure that result in new institutions as rules and laws, governance structures which also give rise to new defined boundaries (Lazaro and Birch-Thomsen, 2013). Anthropological and cultural perspectives name a place as urban or rural, depending on the culture and social activities that have developed. Another critical factor

relates to the role played by markets as a vehicle of transformation created by increased demand of products from and to other rural and urban areas (Lazaro *et al.*, 2017a).

### **2.1.3 EUCs as centres of change**

The EUCs are considered as centres of change and are classified further by such functions as supporting emergence of markets and economic transformation (from primary production to involving value addition activities, manufacturing, and commerce/business). The EUC transformation process takes shape mostly from the development of markets and businesses, which attracts individuals/traders from different frontiers. The process which leads to high population growth, pulled and pushed by migration. The increasing rate of development and transformation, bring up the scale and size to the areas where most of the businesses are located, which mimic the city “downtown” or the Central Business District (O’Hara, 1977). For example, Posta and Kariakoo in Dar es Salaam, Tanzania grew due to concentration of businesses and markets where people and firms incur less transaction costs to obtain variety of products from scattered locations. EUCs acts as small central business districts of the rural hinterland, although large part of the surrounding spaces possesses village structures, with large proportion of the land being used for farming. The transformation of the EUC is dynamic and vibrant (Lazaro *et al.*, 2019), it can be observed from different perspectives such as administrative, demographical and from social service provision.

### **2.1.4 EUCs transformation**

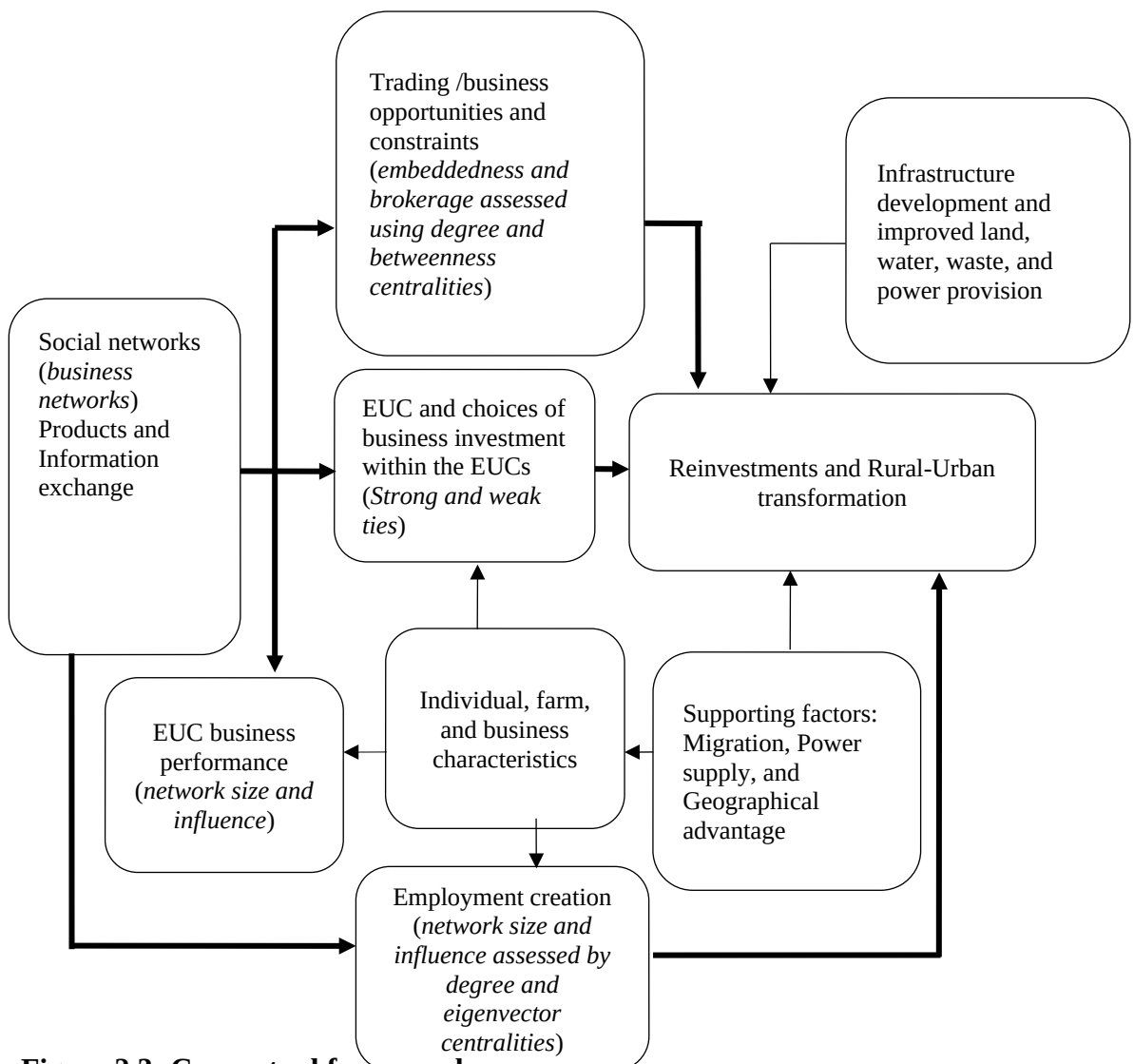
The transformation of EUCs is a dynamic process, and it could be observed from different perspectives such as administrative/governance, demographically, economically, and socially (Lazaro *et al.*, 2019). Meanwhile, other factors are evident in the process of transformation, it is the economic activities which vividly manifest the transformation.

The growth of businesses in the EUC is documented to be a central force that influence the transformation of the EUCs economically and institutionally (Lazaro *et al.*, 2019). In support of this transformation, social networks are alleged to be a medium through which resources and information about EUC business, markets, investments, and employment opportunities are channelled. The positioning of actors in their family, friendship and business networks to a greater extent explain the opportunities that they can explore and succeed in business ventures.

## **2.2 The Conceptual Framework**

The key portfolios of EUC business networks also explained in the framework of SNA are identified to be products, information and resources that are commonly shared among actors/businesses (Figure 2.3). Business position in the general EUC network structure is presumed to influence/create opportunities that the business will seize and constraints that it might face. These opportunities are determined through assessment of network embeddedness (using network degree centrality) and brokerage role (measured using betweenness centrality). Characteristics of network size also explain business performance and subsequent development. The relational characteristics of these networks in terms of emotions and attachments with strong ties of friends and family and weak ties of business friends/acquaintances and institutions significantly influence business owner choices/motives to invest in either Ilula and Madizini and business type of their choice. Such influence is accrued from social capital invested to business owners which creates social impact in their individual choices. The significance of social networks further affects business ability to create employment opportunities in the EUC. This capacity depends on the size of its connections and influence it has in the wider social network, which is created through networking with well-connected partners. These relations are explained using bold/double arrows in Figure 2.3. Business investment and employment

creation prospects are also conceptualised to be explained by characteristics of individuals (business owners) and their business, as well as factors like continued migration, power supply and geographical location. Moreover, increased interaction mediated by existing social networks supported by other factors like infrastructure service development, improved access to land, water, power, and better waste management are presumed to positively impact EUC development through market creation which will fuel further reinvestment, employment creation and subsequent rural-urban economic transformation. As secondary covariates of their relation are represented by faint/single arrows in Figure 2.3.



**Figure 2.3: Conceptual framework**

## **2.3 Theoretical Framework**

### **2.3.1 Social network analysis and business networks**

This study takes point of departure in the social network theory. The subject of social network is extensive and widely used in the major fields of social sciences like sociology, psychology, and economics also in science like mathematics and physics. In economics, social network represents interconnectedness or relations that exist between actors or nodes. Borgatti *et al.* (2013) defines networks as a way of thinking about social systems and the relationships among the entities (actors or nodes) that make up the system. These actors could be individuals, institutions, and cities while relationships are represented by ties that show how they interact each other. Thus, a network is a mechanism by which different parts of a system may affect each other. Goyal (2016a) defines social network as a set of socially relevant nodes connected by one or more relations while SNA constitutes examination of such relationships. Scott and Carrington (2011) define SNA as the analysis of systems of social relationships represented by networks. The analysis is based on mathematical model to pin-point relationships/networks among objects (Scott, 2000). It involves a graphical or diagrammatical representation of relationships following the graph theory (Goyal, 2016a; Scott and Carrington, 2011). Social network theory is thus used in this study using mathematical and graphical models to show the structure of businesses in EUCs, and further examine how they influence business investment and creation of employment in EUCs. The choice of social network theory is justified on its ability to identify relations and how such relations among businesses impact their operations within a less formalized rural locality in Tanzania.

The literature on SNA has evolved significantly in the recent past where there is a drift towards supporting an analysis that is based on rigorous assessment of theories rather than ad hoc adoption of conventional methods (Scott, 2000, 2017; Scott and Carrington,

2011). The new thinking is rooted on the fact that concepts and techniques cannot be empirically used to establish relationships in any field of social science unless grounded on solid theoretical constructs. One of the remarkable advancements in social network analysis is the emergence of strands of theories which challenge the conventional network theory. The new perspectives put relational or attributes at the core of social network analysis. To date there are several theoretical perspectives in the field of social network from which the discussion of business network is embedded. In a more narrative way, the SNA is considered as a specific means of implementing the relational orientation to sociological explanation and is consistent with a relational theory (Scott and Carrington, 2011).

Van Poucke (1979) exemplified that SNA has no better theoretical base/development because there is a wide and ongoing discussion and developments occurring around the study of networks. For instance, he discussed 'network' as a metaphor which is defined as a picture of the structure of social reality. It is made up of three key features of theoretical foundations of relational theory which are (i) sentiment networks where relations are themselves the ends of social action like love. (ii) interest networks, here networks are formed by relations as means to an end which have a distinct nature that they won't live, for instance relations built for one to get elected, and (iii) power networks which are characterized by lasting relations bound by common goals like in businesses.

The transcendence of business network is, however, different from that of social context based on sociological and anthropological foundations because structural relationships in business networks are based on the business world of profits, costs and contracts. The characteristics of actors or events and activities in business networks can also have significant effect on social connection or networks between agents (Jackson and Young,

2016). However, it can be argued further that social networks are intrinsic to business networks. This is because the social world bridges the inter-organizational relationships and the business world through soft relationships approach in management. Relationships which further guide how business partners can engage and build partnerships while at the same time handling business risks, structural constraints from market conditions and environmental uncertainties.

In view of this discussion Todeva (2006) gives a better definition of business networks by stating that "...business networks are sets of repetitive transactions based on structural and relational formation with dynamic boundaries comprising inter-connected elements of actors, resources and activities." A key message is that business relations and transactions are associated and attached to social relations. This idea is consistent with a seminal work by Granovetter (1985), which substantiates that economic transactions are neither laid on the over-socialized as earlier documented by Wrong (1961) nor on the under-socialized extremes. Transactions are embedded in the concrete and on-going systems of social relations. Granovetter (1985) did not partition the two extremes but objectively exemplified that, social relations influence economic phenomena in many ways as determined by the nature, level of transaction, or sector of the economy. The concept of embeddedness is applied here to explain the nature of social relations that are inherent in business transactions.

### **2.3.2 Social networks and business investment**

The theoretical influence of social network on business investment in the literature is described to be around theory of social capital which is a strand of social network literature as documented by Davidsson and Honig (2003), Hoang and Antoncic (2003) and, Kwon and Arenius (2010). Davidsson and Honig (2003), for instance examined the

comparative importance and the likelihood of various contributing factors like personal and business networks, contact with agencies, and undertaking business classes on success of business start-ups. It was observed that it is important for businesspersons to develop and promote networks of all kinds, especially inter-firm and intra-firm. The role of social capital in influencing investment choices is grounded on the argument that social networks tend to facilitate information transfer particularly in the imperfect market conditions clouded with uncertainties. Moreover the credit of social networks is accrued from the influence and power that these connections carry thus rendering the comments from such agents to hold power in influencing decisions (Lin, 1999, 2001b).

Social capital theory is derived from a simple term where individuals invest on social relations with an expectation of returns (Lin, 1999). According to Lin (1999) social capital includes resources embedded in a social structure which are accessed and/or mobilized in purposive actions. Lin (1999) brought up three key elements to intersect structure and action. These are, the structural (embeddedness), opportunity (accessibility) and action oriented (use) aspects. The inherent explanation of social capital theory in social network was also captured by early scholars like Lin, (1999, 2001a) who described that access to and use of social resources are in part determined by positions in hierarchical structure or the strength of position proposition and the use of weaker ties or the strength of tie proposition. Flap (1994) and Portes (1998) discussed social capital as an amalgamation of network size, relationship strength, and the resources of those in the network. Thus, stronger social capital is translated by having diverse linkages with stronger ties which create a firm base to obtain more resources like information, capital, and employment.

Susomrith and Suseno (2017) reveal further that social capital can be both a private and public good. Social capital is a public good because of its non-exclusive nature, benefiting all members of the community, and private good because it benefits individuals who are able to access and use resources embedded in their social networks to achieve desired outcomes (Lin, 2001a). Societies in developing countries are socially attached to the virtues of loyalty, dependability and honesty (Lin, 2001b; Susomrith and Suseno, 2017). These attributes underlie the foundations of social capital (Joye *et al.*, 2019). Similar context applies to business investments where family or social attachment to a large extent are embedded in drawing decisions about business investments (Kwon and Arenius, 2010; Tsai and Ghoshal, 1998). The implication is that the social capital that has been invested across forms, organisations or individuals will to a large extent have an influence on business investment choices.

Another aspect of social capital that provides resources like information, and a bridging lubrication, consists of ties and trust. Trust accrued from relational perspective of social network is considered as a primary and important aspect of social capital that enhance internal organisation through bonding of actors as well as bridging external networks (Ali *et al.*, 2017; Susomrith and Suseno, 2017). Trust is considered as a social asset that govern embedded relationships (Tsai, 2001; Uzzi, 1996; Tsai and Ghoshal, 1998). In this study, ties which are subjects of social capital are identified to either be weak or strong depending on the kind of relationships, connections and resources that is or can be gathered from them (Granovetter, 1983). These ties can be at both organisational and individual levels, and they may also be direct or indirect. Weak or bridging ties are loose relationships between individuals, and they extend networks by linking parties/actors with distant actors and provide access to new information that cannot be obtained around strong tie networks. Strong/bonding ties are links that an individual has with close friends

or relatives/family and they provide secure and consistent access to resources (Granovetter, 1983; Susomrith and Suseno, 2017).

To operationalize the social capital concept, identification of networks and networks relationships is mostly done by defining the strength of ties, frequent or repetitive group activity, informal gatherings, and social and family relationships. In light of this theoretical discussion, this study will use the weak tie and strong tie social networks to examine how distant and close connections (individuals, associations and/organisations), coupled with their structural position in social network influence the business owner investment choices.

### **2.3.3 Business networks and employment creation**

The role of micro or small businesses in advancing employment creation particularly in the rural areas is well appreciated by scholars like Henrekson and Johansson (2010). Their significance increases as households diversify from primary farm employment to non-farm business (Reardon, 2010). Governments on the other hand have been implementing policies to support and create a good working environment to support growth of small firms and start-ups (Baldwin and Picot, 1995; ILO, 2016). Within the context of fast growing EUCs, businesses in these areas require dynamic macro and micro policies to support them in the process to achieve the broad country and local objective of employment.

Employment creation is defined here as the ability or an act of a firm to employ at least one person, under certain agreed remuneration/reward. In the literature, the concept of employment creation and job creation are being used synonymously (OECD, 2014; Verheul *et al.*, 2006). In the context of economic literature, a person is considered

employed if he/she can work at a certain going wage rate (ILO, 2016). Job is a task or piece of work that is paid, and employment as a state of having a paid job in a certain period. Using job creation in place of employment creation can therefore mean different things. Job creation refer to the process of creating tasks while employment creation means increasing the number of people who will be assigned to certain tasks, given the remuneration. Henrekson and Johansson (2010) discussed how small young firms are important in creating employment, however, they titled small firms as job creators to imply employment creators. Similarly, these two concepts have been widely used by Burke and Nolan (2002) and Henley (2005). In their analysis, they compare employment creation by obtaining net job creation over a period by deducting the gross number of people employed to those who lost jobs. In the literature, job creation has significance in identifying physical jobs created primarily from the formal sector where more formal methods of screening labour like referrals and interview are common (Pissarides, 1994; Schmutte, 2016).

### **2.3.3.1 Methods for employment creation**

The discussion surrounding employment creation has been approached in different ways. In a broad sense, the actual amount of employment created by a sector or firm is obtained by augmenting the direct, indirect and induced employment (Kweka *et al.*, 2003). Direct employment is obtained by aggregating the actual number of employees in a firm, while indirect employment is obtained by computing the secondary employment created through hiring service for the firm. Induced employment is obtained by computing amount of employment that can be created through increased demand/consumption by the firm and labour after spending the incomes/wage earned from their primary employment. The amount of indirect and induced employment is commonly obtained using macro/sector multiplier values (Macgillivray *et al.*, 2017). For small business sector study, the use of

multiplier index will not be materialized due to the small size of the businesses and number of employees per business. They are, however, useful for large industry or sector case studies (Kweka *et al.*, 2003; Mendez-parra, 2015).

A large body of literature has assessed employment creation from self-employment perspective (Hammarstedt, 2004; Henrekson and Johansson, 2010). This approach is justified because employment is created largely by small businesses, and most of them begin as independent entities operating without employees (Henley, 2005). The discussion of self-employment is also broad as it may include a formally employed individual who also owns and operates one or several businesses. It does not discriminate actors who have multiple formal/informal employment but considers labour created by operating own business. A similar approach has been used by other scholars such as Burke and Nolan (2002), Cowling *et al.* (2004) and Henley (2005) to assess employment creation by examining factors that push or pull employment. The approach towards assessing self-employment can vary because on one hand different countries interpret self-employment differently and on the other hand, job creation can wrongly be used to mean employment creation.

Self-employment as a key term has been approached differently in the literature. International Labour Organization (ILO) defines it as an individual who operated own economic enterprise independently, with one or more employees (ILO, 2019). Conversely, individuals who earn no wage but derive their return by employing their profession or business on their own account, are also termed by Parker (2004) as self-employed, they may also have employees. Furthermore, partners of unincorporated operation are commonly considered as self-employed. The Organization for Economic Co-operation and Development (OECD) consider self-employed as persons who are sole

owners, or joint owners, of the unincorporated enterprises in which they work. It also accommodate unincorporated enterprises that are classified as quasi-corporations (Blanchflower, 2000). It encompass unpaid family workers, outworkers and worker engaged in production undertaken entirely for their own final consumption or own capital formation, individually or collectively (Eurostat, 2002). However, they should not be having a paid employment which constitutes their principal activity. The definition of employment in this study is extended to incorporate unaccounted family labour which is a common characteristic among small businesses.

### **2.3.3.2 Drivers of selfemployment**

The discussion surrounding employment creation has received large contrasting empirical and theoretical poles. The variation emanates largely from the category or stage of economic development from which analysis is being done. For instance, there has been argument in the literature that rise in self-employment could be related to increase in unemployment rendering self-employment as an alternative option. It could also be due to increase in entrepreneurial drive among individuals, specifically termed as a prosperity push (Parker, 2004; Thurik, Carree, van Stel, and Audretsch, 2008). In developing countries, self-employment push was explained by Ranis and Stewart (1995) to result from adoption of structural adjustment policies, aided by slow growth, and public promotion of private sector as instrument of growth. However, similar rates of self-employment are also observed to increase in developed countries (Pietrobelli *et al.*, 2004). Regarding the earnings, empirical evidence is not consistent as to whether self-employment earnings are low or high compared to wage employment (Thurik *et al.*, 2008). This shows that there are several literal arguments surrounding self-employment, mostly being context specific. Although, some scholars such as Dawson and Henley (2009) and Krueger *et al.* (2000) argue that, the move towards self-employment in

developing countries is not driven by the need of self-expression, or independence but rather due to pecuniary advantages in large informal sector, and as a recourse from unemployment. Despite the limited theoretical discussion regarding self-employment with employees, it is rationally taken that the motive of an enterprise is to maximise profit and thus expand in size and scope. This will create the demand or employment of labour to assist in business operations. Thus, in the process of creating employment small businesses have been widely regarded as employment creators (Henrekson and Johansson, 2010).

Supportive infrastructure, access to credit, education, asset placement, and other government policies such as ease of doing business are widely understood to be among the important factors that fuel employment creation (IFC, 2013). Moreover, avoidance of social discrimination, overcoming liquidity constraints and unemployment, and enhanced capacities in terms of business knowledge and talent have also been recognised as personal motives for self-employment. However, the immediate business and social networking environment which an individual or a business is embedded into has received little attention among the supportive motives of employment creation. Gee et al. (2016), and Granovetter (1985) exemplified that the social circle of individual (strong and more important weak ties) is central in determining his/her economic outcomes. This works largely where social networks are accounted as first contacts and act as first signalling agent to deliver employment related information. Based on the foundations of Granovetter (1985), several studies have attempted to explain how networks influence labour allocation. Strong ties (family and friendship networks) and weak ties (occupational acquaintances) are widely debated whether they take a leading role in influencing labour allocation and employment creation (Kramarz and Skans, 2014; Lancee, 2016). The discussion is however backed by underlying potential that the ties provide, for instance

strong ties are accounted to be the more preferred sources. While, weak ties are endowed with more non-redundant/new information especially from distant actors hence they elevate the chances of obtaining more rewarding opportunities than strong ties (Granovetter, 1973; Brady, 2015; Tian and Lin, 2016; Brashears and Quintane, 2018).

## **2.4 Empirical Review**

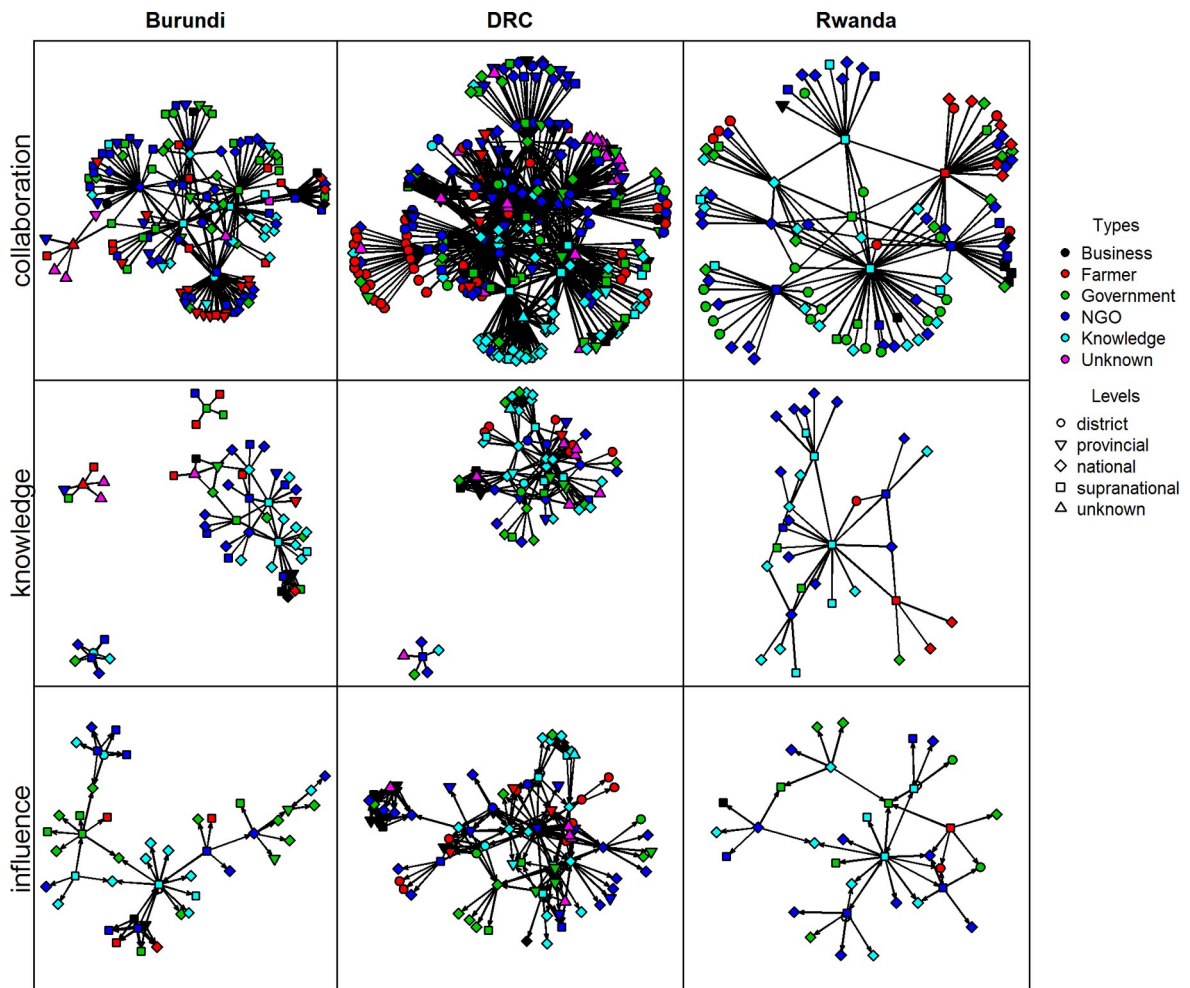
### **2.4.1 Social networks and small towns**

The link between EUCs and social networks is largely scanty in the theoretical literature of rural urban development. Available scientific studies underscore the role of small towns in providing business development avenues and as centres of markets primarily to rural agrarian society (Hardoy and Satterthwaite, 1986; Karg *et al.*, 2018). Some literature explain small town and business networks within the context of rural urban linkages where small towns are focal point of facilitating rural urban connections (Bah *et al.*, 2003; Leinbach, 1992). FAO (2017), document the role of small towns based on its ability to create territorial networks for the spaced and concentrated rural population; thus, enabling access to social amenities like schools, hospitals, and local government administration. However, from the angle of strategic networking little has been documented except for Brønd (2018) who examined territory and trade networks in the small-scale oil-palm industry in rural Ghana. By examining territorial networks, he revealed that SNA helps in uncovering economic networks with some form of organisation among palm oil traders which other methods could not uncover. However deeper empirical analysis to identify how social network are relevant in bringing about these economic developments within the context of small business is yet to be done which justifies the relevance of this study.

### **2.4.2 Empirical review for business networks**

The framework for analysing business networks is embedded within the SNA and it employs the mathematical approach of graph theory. According to Scott and Carrington

(2011), graph theory involves a process where individuals and other social actors are represented by points and their social relations are represented by lines. In this process, networks are analytically represented using sociograms and data presented in various forms like square matrix (sociomatrix) where rows and columns represent individuals and the presence or absence of a social relationship between each pair of individuals is recorded in the cells (Goyal, 2016a; Scott and Carrington, 2011). Common measures used in SNA are things like density of a network and the relative centrality of various points within the graph. Centrality measures like degree, closeness, betweenness and eigenvector are used as indicators of power, influence, popularity and prestige (Costenbader and Valente, 2003; Abbasi *et al.*, 2011). Figure 2.4 by Hermans *et al.* (2017) for instance shows structural properties of the collaborative, knowledge exchange and influence networks of multi stakeholder platforms (Businesses, farmers, NGOs and the like) in Burundi, Rwanda, and South Kivu Province. The graph shows mismatch between webs of collaboration, knowledge, and influence where some actors like the government and NGOs are underrepresented in some, thus constraining innovation in the agriculture sector.



**Figure 2.4: Multi Stakeholder networks for collaboration, knowledge exchange and perceived influence in Burundi, Democratic Republic of Congo (DRC) and Rwanda.**

**Source: Hermans *et al.* (2017)**

Borgatti and Foster (2003) exemplified that network positions occupied by actors can identify constraints and opportunities for a particular business. In the SNA brokerage and embeddedness are positions that most businesses tend to be found in when trying to expand their opportunities and overcoming constraints (Greenberg, Farja, and Gimmon, 2018). A business is embedded when is central among a limited number of other business, it is also said to be a broker when it is structurally found to link different clusters of businesses (Uzzi, 1996, 1997). The importance of social networks in this study is to reveal how different categories of businesses are embedded in the general product and

information networks. Moreover, in revealing what kinds of businesses are central (acting as brokers) in linking different clusters of businesses in the EUCs. The understanding of network positions will inform how the poorly linked businesses can benefit in the network. This is by linking with business that are more central/embedded as well as bridge business within and outside the EUC. While embeddedness is known to expose actors to resources like products and information, business actors who occupy different brokerage positions are understood to be important in providing new/non-redundant business information (Walther 2015a).

Empirical literature analysing social network potentials that can be realised through embeddedness and brokerage actors is broad (see Anderson et al., 1994; Greenberg *et al.*, 2018; Hanna and Walsh, 2002; Walther, 2015a, 2015b). Walther (2014, 2015) document how businesses which are well embedded and those playing diverse roles of brokers can benefit from its connections in the network through a range of resources that they can relish. This comes when brokerage and embedded positions are taken to benefit and reinforce relations with actors in an organisational context than to manipulate or harm others (Halevy *et al.*, 2017). In this study therefore, the use of SNA to examine business networks is vital because it will unearth trading opportunities and constraints given their nature of relations within the EUCs.

### **2.4.3 Empirical review for social network and business investment choices**

Effects of social networks on investment choices are analysed through the evaluation of relative importance of strong and weak ties in providing business information (Granovetter, 1973). Resources such as information and capital that are shared through these ties are assumed to influence business owner's decision to invest in a business venture. There however exist debates on the strength of a tie and its influence on sharing

of resources and the ultimate choice of business ventures among owners. For instance, Krackhardt (1992) and Levin and Cross (2004) argue that strong ties are more influential because of high level of trust that change the ties. However, this influence cannot be generalised as it is bound to vary across businesses as well as other and potentially sector-specific compounding factors. The study contributes new information to the sustained debate on the subject as it draws specific lessons from the EUCs that are unique in terms of key drivers of business investment and growth.

Literature on social networks and business investment discusses the role of tie strength within the social capital theory which is contained/within SNA framework (Johannisson *et al.*, 2002). As discussed by Davidsson and Honig (2003), strong (bonding) ties have been used in entrepreneurship studies to express how family or parental influence can impact investment decisions. This is because they represent relationships characterised by high levels of reciprocity and trust. Furthermore, individual business investment choices are largely clouded by uncertainties due to lack of information. Thus, individuals tend to rely on their social networks to bridge the information gap. Weak ties are also asserted by Granovetter (2005) and Lin (2001b) to be more important because these ties tend to provide more appealing support/information with regard to newness and distance than strong ties. The importance of these relations is however presumed to carry specific weight to an individual depending on the kinds of its surrounding actors.

Although the literature on business investment choice is broad, a lot is yet to be known with respect to what influences business investment in the EUCs of rural areas. Studies by Aren and Aydemir (2015) and Jagongo and Mutswenje (2014) have attempted to explain how individual demographic factors such as education and financial literacy can influence business investment choices. These studies however discussed investment choices from a

corporate point of view without acknowledgement of the role played by social networks in delivering investment related information. An examination of factors driving business choices from a social network perspective is deemed important because, apparently, better EUC transformation is guaranteed by a supportive environment that entice individuals to venture into various businesses.

Klyver and Schøtt (2011), and Vukovic *et al.* (2017) employed the SNA framework to understand how investment choices were moulded. They however, looked at this from the entrepreneurial drive. Earlier studies like Hespos and Strassmann (1965) Katona and Morgan (1952), and Lai *et al.* (2015) that examined factors influencing investment choices could not account for the role of social networks in moulding these choices particularly from the perspective of small towns. Using the framework of SNA, this study will first determine the strong and weak ties (bonding and bridges) in the businesses, and later examine their role in influencing business investment choices. Weak ties (bonding) are hypothesized here to include relations/ networks from and within the business community. Expected parameters of analysis for bonding ties are family (e.g. father, mother, and other relatives) and friends. Hypothesised bridging ties encompass social influence from organisation or institutions. Other control factors are the socioeconomic attributes of the business owner like, age, sex, origin, occupation.

#### **2.4.4 Role of social networks in employment creation**

Research on the role of social networks in facilitating employment creation represents a growing field in network studies. A large proportion of these studies (Brady, 2015; Tian and Lin, 2016; Tian and Liu, 2018) address how individuals employ their network resources to access employment related information or place them in the network of labour markets. The divide in the literature emerges as there are two extremes of social

network influence in labour market. The first is from the labour viewpoint (individual searching for employment) and the second are employers looking for resourceful employees. The former is represented by studies by Kramarz and Skans (2014) and Gee *et al.* (2016), where strong and weak ties are revealed to help job seekers in both formal (where interviews and referral networks are common) and informal sector (where no hiring qualifications are posted). The latter is represented in studies by Bayer *et al.* (2008), Beaman and Magruder (2012) and Beaman (2016), where firms tend to rely on their referral networks and their social networks contacts to verify or acquire sufficient labour information. Thus, networks emerge as a key tool to provide or obtain important labour market information for both job seekers and firms, which this study will assess how the two cases apply in recruiting/finding for employment opportunities among businesses in EUCs.

Some studies took a further step by using the network resource endowment to predict the likelihood of employment creation. For instance Cappellari and Tatsiramos (2011) after controlling for endogeneity with instrumental variables found that an additional employed friend increases the likelihood of getting a job by 13 %. Other empirical attempts in examining social networks influence in employment creation have been made by Lassassi and Alhawarin (2018), and Allen (2000) who found that social networks as related to family attachments, and friends influences one's decision towards self-employment. While using social capital theory as a strand of SNA, Yuen (2006) and de Silva (2021) found that having a social connection in urban areas help self-employed women to access supplies, labour, and credit. It also assists firms in hedging against uncertainties including difficulties in getting licenses and permissions to invest or trade. Other social aspect like ethnicity was noted by Kerr and Mandorff (2015) to influence self-employment decisions.

In determining how business networks may influence employment creation in the EUCs, this study uses a similar analytical process from Allen (2000), and Cappellari and Tatsiramos (2011). The analytical process is approached from a firm's perspective of obtaining labour where strong and weak ties are commonly used. Later the social network influence on the likelihood of a firm to create employment is explored using firms network attribute like its size of connectivity and influence (firms' connectivity with well-connected businesses). In this attempt current level of direct and indirect employment created and imputed own labour and family labour are used as a regressor. This study goes beyond Cappellari and Tatsiramos (2011) empirical approach of using strong ties (relational ties) to evaluate employment creation by further employing firm social network variables. The approach is theoretically accepted by Goyal (2016) where ones network strength can be an important input towards firm's employment creation.

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## CHAPTER THREE

### 3.0 METHODOLOGY

#### 3.1 Research Design

This study adopted a cross-sectional study design where information is collected from respondents in one point in time. This study design was found to be appropriate in studying business developments and business networks and identifying the key features of business operations in EUCs. The study design has been acknowledged to be suitable when the aim is to draw unique inferences from the analysis of both qualitative and quantitative data specifically in social network research (Borgatti *et al.*, 2013). This is due to impracticability of time and process (longitudinal) research to capture the dynamics of social networks. The unit of analysis in this research consists of businesses operating in EUCs in rural areas, whose peculiarities and interest stem from their emergence, development, and impact in creating employment. The study targeted relatively more urban sections of Ilula and Madizini townships, which are growing rapidly in terms of both population and economic activities.

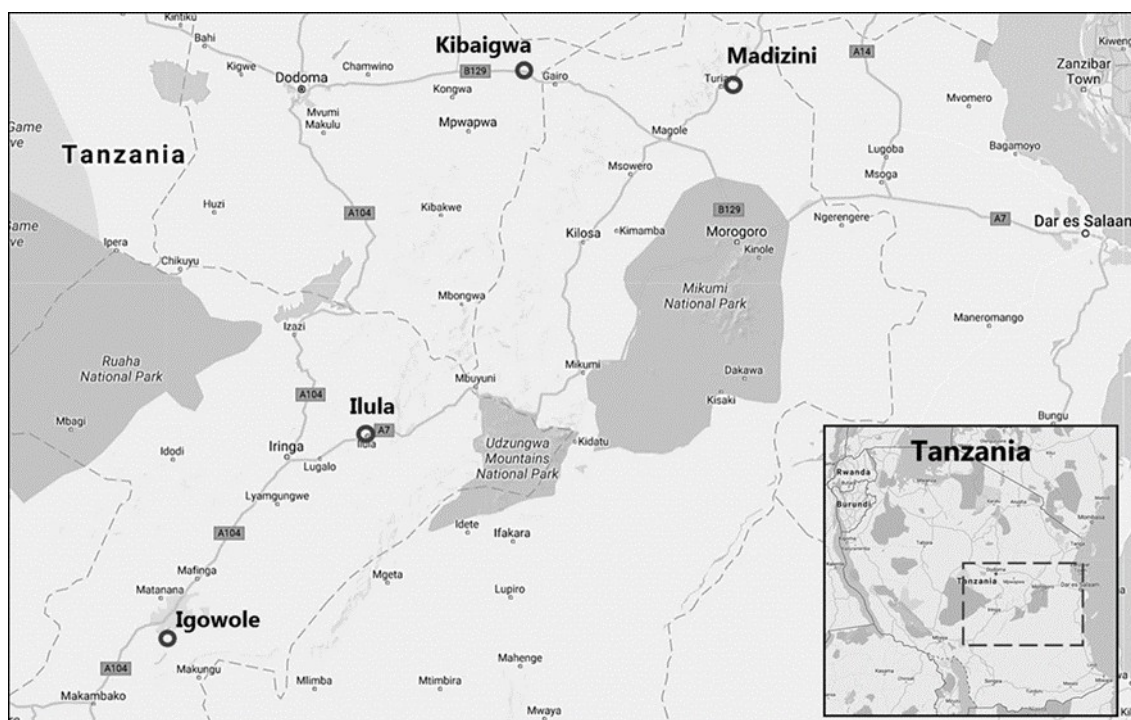
##### 3.1.1 Study sites

The study sites selected for this study are EUC in Ilula, which is in Kilolo District, Iringa, and EUC in Madizini, in Mvomero District, Morogoro. The selected study sites are part of the Rural-Urban Transformation (RUT) project sites which also include Igowole and Kibaigwa EUCs in Iringa and Dodoma regions respectively. Ilula and Madizini EUCs were selected among four study sites under RUT project<sup>2</sup>. They were purposefully selected because of their rapid development attributed by growth of dominant crop

<sup>2</sup> The general objective of Rural Urban Transformation (RUT) Project was to provide a comprehensive understanding of development dynamics of Emerging Urban Centers (EUCs) in Tanzania and explore how these impacts on the physical and socio-economic transformation of EUCs into urban townships.

markets (tomatoes in Ilula) and processing, manufacturing, and industrial investment (sugarcane in Madizini). Coupled with economic potential, location has been a key factor, as Ilula is located along the major Morogoro-Mbeya highway, while Madizini is a bit detached from the main highways of Morogoro-Korogwe. Ilula and Madizini as townships are among a long list of townships that have been gazetted by the Government of Tanzania (GoT) but are at different levels of governance transformation. For instance, Ilula is run by township authority, including Township Executive Officer (TEO) while, Madizini has been gazetted as a township but is still being run like a village (without a TEO).

Geographically, Ilula is situated in Kilolo district, 50 kilometres East of Iringa Regional offices, and Madizini is in Mvomero District, 92 kilometres North of Morogoro Regional offices (Figure 3.1). Ilula township is made up of three wards which are Ilula, Nyalumbu and Mlafu. However, the EUC area in Ilula township is made up of Ilula and Nyalumbu wards while, the EUC in Madizini is within the Mtibwa ward. The surveyed sub-villages of EUC in Ilula were Ilula Sokoni, Ngelango, Ilula Mwaya, Ilula Mtua, Igunga (Isele), Itunda, Ding'inayo (Ilala), Madizini, Masukanzi, Majengo Mapya, Nyakilomo and Itabali. Barabarani, Mji Mpya, Madizini A, Madizini B, Mpingoni, Lusanga road, Kibaite and KKKT were the surveyed sub-villages in Madizini EUC. The selection of the sub-villages was done based on housing density survey done using aerial sentinel photography and google maps in sampling to encompass area of the township with high population settlements and economic activities.



**Figure 3.1: Map of Tanzania showing the location of Ilula and Madizini EUCs.**

### 3.1.2 Data

This study employed a mixed method approach where it gathered both quantitative and qualitative data from primary and secondary sources. Quantitative data were collected using survey questionnaire while qualitative data were collected using interview guides, focus group discussions (FGDs) and observation techniques. The key subjects of the study were businesses which were classified into five major categories namely service-based businesses, shops and trading, workshop, processing and manufacturing, and transport. The groups were formulated based on registration data of businesses from the District Trade Officers and the Tanzania Revenue Authority (TRA). From the mentioned groups, 21 other sub-categories were established. As presented in Table 3.1, the classification of business considered formal (based on formal registration), skill level required (if involved training), and nature of exchange. Businesses involved in food and drinks like restaurants and bars; art, musical and video; hotels; cleaning and beauty, and related services were clustered under the service category. Majority of these businesses are formally registered and trade unperishable commodities which also require skilled

manpower. Businesses related to the trading of items such as food crops; farm inputs; clothing, fabrics, and footwear; hardware, parts, and electronics; wholesale; vendor stalls; and household retail were clustered under shops and trading. Beside farm input shops/stockists, businesses in this category required little or no trained manpower and with little specialization as compared to businesses in the manufacturing sector. The processing and manufacturing category are made up of businesses involved in making packaging materials, like tomato boxes; timber and timber products processing such as carpentry or making of furniture and fixtures; sale of construction materials; iron works/welding; and tailoring. Majority of these businesses are formally registered, producing high value products which also require trained manpower. The workshop category consisted of businesses involved in repair shops and garages. The transport category encompassed transportation services like the *bodaboda* (motorcycles taxis), *bajaji* (three-wheel carriage) and trucking. The business categories were established to reduce the list and ease data analysis. The classification of business was guided by the list and categories established by the Tanzania Revenue Authority and customised to uptake other unregistered businesses absent in the TRA roster. This led to the establishment of business categories with however extremes in features with some businesses being highly informal and unspecialised operating with little or no trained/skilled individuals; and some with high level of specialization, employing skilled manpower, and with high level of product value addition.

**Table 3.1: Summary description of business categories based on their operational characteristics/environment**

<b>Business category</b>	<b>Business Type</b>	<b>Specialization</b>	<b>Perishability and Ease of transport</b>	<b>Formality</b>	<b>Skill level requirement</b>	<b>Average number of formal employees</b>	<b>Scale (Wholesale-retail)</b>	<b>Source of inputs (local - distant)</b>	<b>Space (physical structure or otherwise)</b>
Service	Food and Drinks	Less specialised businesses	Less perishable	Formally operated with registration	Little skills required	4	Small scale-retail	Local and distant	Has physical structure
	Art and studio	Highly specialised businesses	Unperishable goods	Formally operated with registration	Require trained skills	1	Small scale-retail	Distant	Has physical structure
	Hotel Amenities	Less specialised businesses	Unperishable goods	Formally operated with registration	Require trained skills	4	Small scale-retail	Local and distant	Has physical structure
	Cleaning and Beauty (hair dressing saloon)	Specialized line of business	Unperishable goods	Formally operated with registration	Require trained skills	1	Small scale-retail	Local and distant	Has physical structure
	Transport	Highly specialised businesses	Unperishable goods	Formally operated with registration	Require trained skills	2	Small scale-retail	Local and distant	Mobile
	Other services	Less specialised businesses	Less perishable	Informally operated with few registered businesses	Little skills required	1	Small scale-retail	Local and distant	Physical and mobile
Shops and trading	Food crops Trading	Less specialised	Highly perishable	Some are formal and	Little skills	3	Small and large	Local	Some physical and

	businesses	goods	some informal depending on scale	required		scale-retail		some mobile
Farm Inputs	Highly specialised businesses	Less perishable goods	Formally operated with registration	Require trained skills	4	Small scale-retail	Distant	Has physical structure
Clothing	Less specialised businesses	Unperishable goods	Less formal with no registration	No skills required	1	Small scale-retail	Distant	Some physical and some mobile
Hardware	Specialised line of business	Unperishable goods	Formally operated with registration	Require trained skills	4	Large scale-retail	Distant	Has physical structure
Wholesale Retail	Less specialised businesses	Less perishable goods	Formally operated with registration	Little skills required	2	Large scale-wholesale	Local and distant	Has physical structure
Vendor Stall	Less specialised businesses	High perishable goods	Informally operated with few registered businesses	No skills required	0	Small scale-retail	Local and distant	Mobile
Retail shop	Less specialised businesses	Less perishable goods	Some are formal and some informal depending on scale	Little skills required	1	Small and large scale-retail	Local and distant	Has physical structure
Others	Less specialised businesses	Less perishable goods	Informally operated with few	Little skills required	0	Small scale-retail	Local and distant	Some physical and some mobile

Workshop, manufacturing and processing	Workshop- Garage	Highly specialised businesses	Less perishable goods	registered businesses Formally operated with registration	Require trained skills	3	Small and large scale-retail	Distant	Has physical structure
	Packaging Materials	Specialise d businesses	Less perishable goods	Formally operated with registration	Require trained skills	2	Small and large scale-retail	Local and distant	Mobile
	Timber works	Highly specialised businesses	Less perishable goods	Formally operated with registration	Require trained skills	4	Large scale-retail	Local and distant	Has physical structure
	Food Processing	Highly specialised businesses	Highly perishable goods	Formally operated with registration	Require trained skills	3	Large scale-retail and wholesale	Local	Has physical structure
	Construction	Highly specialised businesses	Less perishable goods	Informally operated with few registered businesses	Require trained skills	1	Small scale-retail	Local	Has physical structure and some are mobile
	Iron Works	Highly specialised businesses	Less perishable goods	Formally operated with registration	Require trained skills	3	Small scale-retail	Distant	Has physical structure and some are mobile
	Tailoring	Highly specialised businesses	Less perishable goods	Formally operated with registration	Require trained skills	1	Small scale-retail	Distant	Has physical structure

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## **3.2 Development of Research Tools**

The questionnaire for the business survey as presented in Appendix 1 was structured to address objectives related to business networks and their role in fostering EUC investment and employment creation. This questionnaire was first drafted in English and later translated into Swahili. The questionnaire was structured into four parts: the first part aimed at soliciting personal information and business-specific information; the second part was intended to gather business network information, focusing mainly on product and information flow across networks; the third part solicited information related to business investment, while the fourth part asked for information related to employment.

### **3.2.1 Design of network tool**

The collection of business network information was designed to be a whole network survey which covers the entire network in which all actors in the chain participated. The design is opposite to an ego network design, where network data on specific individuals or institutions are collected to understand how they are networked with their alters. Name generators, which are popular data-collecting method for social network studies (Borgatti *et al.*, 2013), were designed to obtain lists of the actors involved in business networks. Four kinds of business network data were identified, and questions relating to them were included in the questionnaire. These were product purchases, product sales and information obtained from and given to other networks. The information on product purchases and sale networks was obtained by asking respondents to list at most eight individuals with whom they frequently purchased their stock and sold their goods. This involved collating information on the volume of purchases and sales, their location, and the frequency of purchases and sales in both low and high seasons of sowing and harvesting. The names were recorded in the name list (name generator) along with their

corresponding network attributes. Similarly, for information on networks, questions on the kinds of information they received and provided to a maximum of eight people, the frequency of contact and their business type were asked.

Specific questions in section three were asked to identify factors that influence business owners' investment in the EUC and choice of specific business that they run. Social network relations connected to strong and weak ties, including actors such as parents, family, friends, business friends and institutions, and their influence were taken as key variables of interest. Specific questions in the fourth section were asked to solicit business employment data. Some questions were posed to business owners to establish whether their business had waged employees and their related characteristics. Other questions were tailored to assess how much indirect employment was created. These questions primarily focused on the number of individuals who were employed temporarily or indirectly in providing security, transportation and culling, as well as office space.

### **3.2.2 Tools for qualitative data**

Qualitative data were collected through interviews, FGDs, and non-participant observation. Qualitative interviews were undertaken with the aid of semi-structured interview guides (Appendix 3), which were structured around a predefined range of issues and aimed at operationalising those issues in relation to empirical data that were collected using questionnaires. The interviews were structured around six key issues. First, questions were asked about the business situation in the past. This information was qualified by secondary information from printed materials that documented on the township development.

Second, the role of institutions in supporting EUC development was probed to collate information on how different institutions (both public and private) have contributed. This involved identifying individual efforts by institutions like local government and collaborative efforts with other institutions like financial and non-governmental institutions to that end. This process entailed identifying key activities and revealing how such institutions operated, considering their rules and regulations. With respect to financial institutions, the process entailed establishing how they influenced lending and borrowing and accommodated the unique needs of specific groups like women.

Third the task of unearthing business networks in the area, including business associations, which have long been recognized to be key network links (Calvó-Armengol and Jackson, 2004, 2007). The questions here were targeted at establishing whether linkages exist between the agricultural sector and business networks, given the dominance of the agricultural value chain in the area. Questioning also encompassed discovering the existence of relationships between business associations and other associations and institutions like local government, the financial sector and private or business-supporting institutions and NGOs. The interviews were further intended to uncover known sources and destinations of goods bought and sold in and outside the EUC and the key actors involved.

Fourth, drivers of business investment were probed, the intention being to uncover the factors that influence business investment and growth in the two EUCs. The probes were structured to determine the pull factors related to the available business opportunities, locational advantages and push factors that might be attributed to poor exposure to local investment opportunities or a lack of conducive farming or economic conditions. These

factors were expected to paint a broader picture of what might be the investment movers of the near future and reveal what services are projected to support other economic undertakings better.

Fifth, labour movements and employment opportunities were probed, the intent here being to uncover prominent sources of labour in the area and the common sub-sectors and businesses that employ large numbers of employees. To further discover employment opportunities, the interview probed the fast-growing lines of business in which most people were becoming involved.

Sixth, business risks and operational challenges were probed where the intention was to identify common business risks stemming from investment, operations, capital, labour, security and markets that challenge or threaten business development.

### **3.3 Data Collection**

#### **3.3.1 Selection of businesses**

The delineation of each EUCs was done using sentinel satellite <sup>3</sup>and Google maps, which guided identification of the geographical area of each EUC. The area that made up the EUC and sub-villages contained within was drawn from spaces with high population density, built-up areas with new and old houses, and zones where most businesses were located. Since a complete list of all the businesses located in the EUCs was not available at the district or ward level, and no prior business network mapping was done, selection of respondents was guided by means of the network boundaries established during

<sup>3</sup> Sentinel is an Earth observation mission from the Copernicus Programme that systematically acquires optical imagery at high spatial resolution (10 m to 60 m) over land and coastal waters. The mission is a constellation with two twin satellites, Sentinel-2A and Sentinel-2B. The mission supports a broad range of services and applications such as agricultural monitoring, emergencies management, land cover classification or water quality.

fieldwork. These boundaries were restricted to product and information ties within each EUC's location. The businesses surveyed in establishing product and information networks included actors and businesses within the EUC, though the naming and listing of an actor's product and information networks were not limited to location.

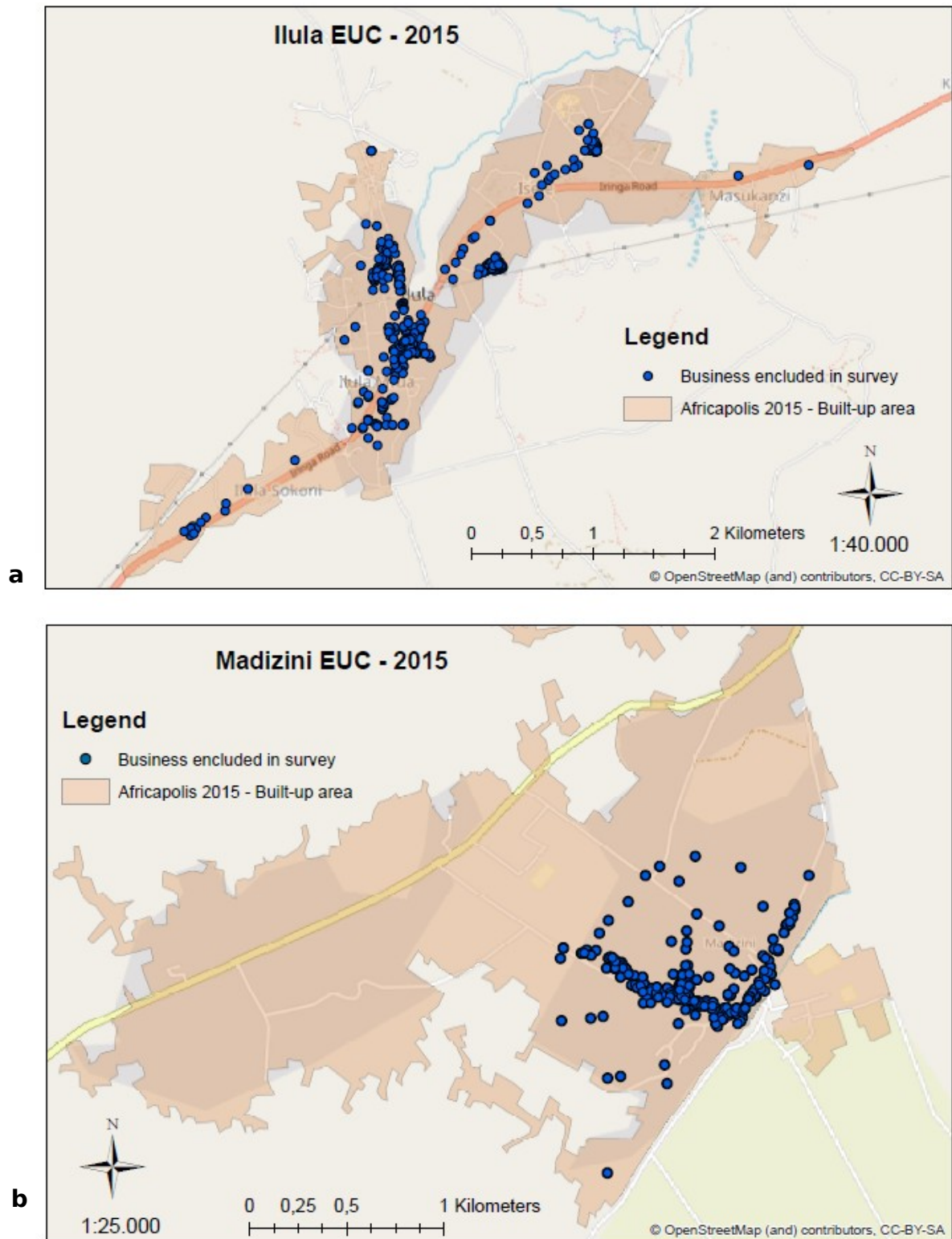
This study was undertaken in 2017 and businesses were chosen at random with proportionate size distribution criteria, guided by classifications of businesses and their spatial distributions on the map where each second-placed business was selected for interview. The random selection process was employed because, unlike other methods, like snowballing and census techniques, which could well be managed in small samples in studying the whole network, the EUCs had large numbers of unregistered businesses. Most businesses were run informally, surveying each business would require additional resources which were not available. Therefore, to ensure better representation and reduce errors from the sample as far as the central limit theorem is concerned (Bellwood-Howard *et al.*, 2015; Karg *et al.*, 2018), spatial and random selection processes were adopted.

Guided by their spatiality and categories, businesses were asked to provide their individual, business-specific, network, investment, and employment information. While the design of network questions was distinct, by using name generators businesses were asked to name a maximum of eight people they had frequently traded and shared information in 2016. The questions were repeated to all five business categories. To keep track of business names and reduce errors in data collection from recording the same actors under different names, respondents were also asked to provide phone numbers and nicknames or aliases of their contacts. The survey was conducted extensively to spatially cover businesses of all kinds in the marked area with the aim of uncovering existing

networks of product and information exchange. Prior to data collection, a business survey questionnaire was piloted and pre-tested among ten business owners in the suburbs of Morogoro Municipality to check for its effectiveness and applicability in answering the key study objectives. This couldn't be done in the study EUCs due to resource limitations at the time of pretesting. Kilimanjaro area in Kihonda ward was used for pretesting because it has similar features (businesses) like Madizini, thus it could test the applicability of the tools.

Six university graduate enumerators were hired (three for each EUC) in both Ilula and Madizini to collect the information on networks. To ease the process of data collection, the enumerators were recruited from the respective study sites for being familiar with the study site and were trained for two days prior to the survey. However, most business owners and other individuals were busy and occasionally away from the business premises, so an extra effort was made to trace them at their home sites.

Using a minimum sample criterion of 384 for an unknown population of business (Louangrath, 2014), a total of 459 businesses in Ilula and 296 business in Madizini were surveyed. The distribution of sampled businesses in Ilula and Madizini is shown in Figure 3.2. To capture many businesses, the survey was conducted during the tomato and rice harvest seasons from March to August because this is when there are large numbers of migrants who come to the two EUCs to trade tomatoes and paddy/rice in Ilula and Madizini respectively.



**Figure 3.2: Sentinel map of Ilula (a) and Madizini (b) EUCs and location of surveyed businesses**

### 3.3.2 Qualitative interviews with key informants

The qualitative interviews involved local government leaders at both the township and district council levels. At the township level, sub-village Executive Officers, Ward Executive Officers, Township Executive Officers and Township Business/Trade Officers were interviewed. At the district level, the District Planning Officer and District Business or Trade Officers were contacted and interviewed. A maximum of five elders from both EUCs were also interviewed to capture changes in the EUC's business environment.

Interviews were also conducted with formal and informal financial institutions, including commercial banks like NMB, CRDB, and Mufindi Commercial Bank (MUCOBA), the Savings and Credit Co-operative Society (SACCOS) like Turiani SACCOS (TURSACCOS) in Ilula and Mazombe SACCOS in Madizini. Other microfinance institutions were BRAC, Sisa, Vision Fund, and Village Community Banks (VICOBA). The TRA Mvomero branch, was also approached for an interview, and a list of businesses operating in Madizini EUC was obtained. The Mtibwa Sugarcane Estates Company, through its processing engineer, was interviewed to describe how the company contributed towards transforming Madizini's business economy. Focus-group discussions involving business groups and associations were organized. Participants in these discussions included furniture and fixtures manufacturing groups, *bodaboda* transportation groups, associations of tomato traders, transporters, and cullies (in Ilula), and rice processors and traders' groups (in Madizini). The interviews were conducted to enrich information and discussions emanating from the quantitative business survey. Specifically, to obtain additional information needed to identify opportunities for, and constraints facing business in the EUCs; choice of business investment and labour

movement within and outside the EUCs. The interviews were recorded on paper and audio using a tape recorder and were later transcribed.

### **3.4 Data Processing and Analysis**

#### **3.4.1 Processing of qualitative data**

The qualitative data obtained from key informant interviews and focus-group discussions were recorded on paper and using audio recording devices subject to interviewees discretion. The audios were transcribed into Word and processed through content analysis using NVIVO software. Content analysis is widely known as a tool that enables one to identify key text, phrases or themes in any text and later analyse them to generate meanings and relationships (Bengtsson, 2016). In this study, conceptual and relational analysis was done by thematically identifying key topics that appeared in the transcriptions through their frequency and relevance, and later relationships with the text were also analysed. The analysis was done categorically across participants, namely local government officials, formal and informal organisations, business groups, companies, and elders.

The key thematic areas identified in the planning phase were the major EUC business development changes. The key concepts in this identification were businesses, infrastructure, agriculture, and manufacturing. The topics covered were intended to capture popular types of businesses in the area, how infrastructure facilities have been transformed, and how agriculture and manufacturing sectors have worked to fuel each EUC's economic growth over the given time. Moreover, to identify how institutions supported EUC business development. The key concepts in this thematical area included institutions, local government, banks, and capital loans. Relational analysis was used to

reveal how these institutions teamed in linking businesses and supporting their operations. Third thematic area was business networks, the purpose being to uncover product flows in and outside each EUC, showing how business groups were linked together to facilitate this process. Key concepts of analysis were the market, tomatoes, rice, brokerage, and transport. The fourth thematical area was business investment, examined to identify the factors that influence people to invest in the two EUCs. Key concepts chosen for conceptual and relational analysis were agriculture, infrastructure, population, jobs, and markets. The fifth thematic area was labour movement and employment creation. The objective was to understand key sources of labour in the area and businesses that create more employment opportunities.

#### **3.4.2 Processing quantitative data**

The data from the business survey were organised, processed and cleaned using SPSS and STATA software. Data cleaning was later undertaken by scanning for possible errors by running simple descriptive statistics to observe if the actual picture properly reflected the data. The product and information network data were exported to Gephi using Comma-Separated Values (CSV) in an Excel spread sheet format. In handling network data, three popular methods were used: the Matrix method, the Node list and the Edge list (Borgatti *et al.*, 2013). The Edge list format was employed in this study because it accepts fewer links than possible links that could exist. In this format, each link is entered in its own row, and each row has two or more columns indicating the pair of nodes the tie has and other ties or relational attributes.

In Gephi, purchasing and selling networks were merged to form a full product network. Similarly, networks of sources and receivers of market information were merged to form a

full network of information exchange. Calculation of required network indices like densities and centralities was done to obtain the variables that are analysed in the manuscripts. Network degree, betweenness and eigenvector centralities to assess business embeddedness, brokerage, and influence in relation to product and information were the key quantitative network indices that were calculated. Embeddedness and brokerage in business and information networks were computed using degree centrality and betweenness centrality respectively. Degree centrality ( $C_d$ ) measures the number of ties that a node has relative to the total number of ties existing in the network (see equation i). A directed network has two kinds of ties which are in-degree and out-degree. In-degree ties are ties towards an actor, reflecting his/her importance. Out-degrees ties are ties away from an actor, reflecting actors' influence. The following equation was used:

$$C_d n_i = \frac{\lambda_i(n_i)}{(N-1)} \dots\dots\dots (i)$$

where  $n_i$  represent the  $i^{\text{th}}$  node in the network,  $\lambda_i(n_i)$  represents the number of ties to  $n_i$ , and  $N-1$  represents the size of the network less the node of interest. Thus, the most highly embedded actors are regarded as central actors who are surrounded by and connected to many other actors.

Betweenness centrality (equation ii and iii) measures how often an actor appears to be on the shortest path among actors in the network of businesses. It represents the number of times a node occurs along a geodesic path<sup>4</sup>. For directed graphs/networks, betweenness centrality is measured as:

<sup>4</sup> Geodesic is the shortest path between two vertices (Borgatti and Everett, 2013). The length of a geodesic path between two vertices is called the 'geodesic distance', or simply the 'distance'. If it takes a unit of time for something (market information) to traverse a link, the distance between two nodes/businesses indicates the fastest information could travel from one business to the other. A long geodesic distance implies that, even under the very best conditions, it would be a long time before market information gets from one business to the other.

$$C_B(i) = \sum_{j \neq k} \frac{n_{jk}(i)}{n_{jk}} \dots\dots\dots (ii)$$

where  $n_{jk}$  is the number of geodesics connecting  $jk$ , and  $n_{jk}(i)$  is the number of geodesics that  $i$  is on (White and Borgatti, 1994). This measure is usually normalized as:

$$C'_B = \frac{C_B(i)}{[(n-1)(n-2)/2]} \dots\dots\dots (iii)$$

where  $[(n-1)(n-2)/2]$  is the number of pairs of vertices/node, excluding the vertex itself.

Different network visualization layouts like Radial axis and OpenOrd layout <sup>5</sup>formats were employed to plot the embeddedness and brokerage positions of actors in the product and information networks respectively.

Eigenvector centrality, which measures the influence of nodes based on the score generated by normalizing the degree centralities of the surrounding nodes, was used to measure the influence of actor networks. Businesses with high eigenvectors were assumed to be more influential, given the richness of information and network resources that could be captured as compared to a business connected to actors with a low degree of centrality.

### 3.5 Data Validity, Reliability and Ethical Considerations

Social network studies are known to be prone to a number of errors that can be committed during study design and execution and in data-processing and analysis, thus leading to wrong inferences. The study was designed to ensure all possible errors are reduced through thorough scrutiny of the research questions, assigning network boundaries and data aggregation to ensure their validity (instruments measure what they are supposed to

<sup>5</sup> These are layout algorithms commonly used to graph network relations. OpenOrd is a force -directed layout with a scale of over one million nodes, common for large graphs, they are used mostly to distinguish clusters.

measure) and reliability (stability or consistency of study outputs when repeated). Among the errors that pose major threats to the validity of network studies is the inclusion of irrelevant nodes and missing data. These might be attributed to interviewee burden and question sensitivity, leading to misspecification of the network model. To reduce these risks, respondents were first introduced to the survey to assure the respondents that any information they provide will be treated with a high level of anonymity and will not be revealed publicly.

Since most business network studies appear to be sensitive, as some businesses fear that their trading secrets might be revealed to their competitors, leading them drop out of the survey, the researcher used trained local enumerators who were known to the area and to the businesses as basis for good rapport and winning respondents' trust. The enumerators were also guided and accompanied by a known local government representative to introduce them to the business. In structuring the tool, the questionnaire was first designed to collect personal and business history information. Relational (product and information exchange) questions were also designed to allow the respondent to name those people (using their common aliases) they bought, sold and shared information with most frequently. Supported by Freeman et al. (1987), the process of recalling those they frequently interacted with in relation to product and information exchange was noted to be less prone to error than pointing to a specific product and place or event. In data aggregation, particularly when compiling product exchange network (purchasing and selling data) and information exchange network (information received and given) a 'sum' Gephi command for adding similar ties was used, and none of the nodes were dropped or filtered in the process. To keep ethical issues further under control, individual names or nicknames were recorded and used to identify their positions. However, in network

visualisations and graphs names were suppressed and the results are discussed from the point of view of the attributes.

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**CHAPTER FOUR**  
**MANUSCRIPT ONE**

**4.0 THE ROLE OF BUSINESS NETWORKS ON BUSINESS DEVELOPMENT IN  
EMERGING URBAN CENTRES IN RURAL AREAS IN TANZANIA**

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**Abstract**

There are several factors including limited information, unfavourable markets, poor infrastructure, inadequate capital, and a high informal business operation that limit the development of business in rural areas of developing countries in the sub-Saharan Africa. Strengthening of social networks in small towns in rural areas have been avenues to foster business development. Yet, how social networks have played a role in influencing business development lacks empirical coverage. This study assessed the role of social networks on business development in rural areas of Tanzania. Based on a random sample of 459 and 296 businesses in Ilula and Madizini Emerging Urban Centres (EUCs), respectively, the study revealed that social network played a significant role in EUC business development. Social networks aided product and information flow in and outside the EUCs. However, despite such a crucial role, many businesses were poorly networked and informal, limiting access to key resources and subsequently development. The study

found that relatively large businesses linked to dominant tomato and paddy/rice value chains, manufacturing and wholesale-retail trading were central in channelling products and market information to many other businesses in the EUCs. The same businesses also acted as brokers of products and information for businesses within and outside the EUCs which guaranteed access to more quality products and information. While well-networked businesses were few, institutions that are key in facilitating business networks played a limited role in the EUC business networks and development. However, increasing business network size supported EUCs' business development through increased stock and sales turnover resulting from widened capital and market channels. Therefore, while building stronger institutions, enhancing vertical and horizontal networks with spatially distant businesses is prime strategy towards EUC business development in the rural areas of Tanzania. The study also calls for public and private sector action in prioritising EUCs as trade and value addition centres that will benefit majority rural populations.

**Keywords:** Emerging Urban Centre, Business network, Embeddedness, and Brokerage.

#### **4.1 Introduction**

Small towns in rural regions in the global South have attracted many scholars' attention in the recent rural-urban development literature (Fold and Tacoli, 2010; Tacoli and Agergaard, 2017a). A significant part of this discussion is centred around the functions that small towns play in linking rural and urban areas. It includes creating markets for products from rural and urban producers and serving as loci points for providing public services within a relatively 'easy to reach' hinterlands (Satterthwaite and Tacoli, 2006; Tacoli and Agergaard, 2017a; Karg *et al.*, 2018). Urban centres create a one-point distribution of urban industrial products to consumers in rural spaces in a similar way.

The centres also provide alternative employment opportunities for people from urban and rural hinterlands contemplating migrating to nearby urban centres. Through this job creation potential, the linkages between urban centres and hinterlands can bring about notable agrarian changes leading to poverty reduction (Larsen and Birch-Thomsen, 2015; Lazaro *et al.*, 2019). Changes which are noted to more apparent in rural areas where businesses are largely in the informal sector and have poor access to resources. The combined effect of business informality and poor access to resources limits business development amid declining farm sector employment and small towns' prospect to create employment opportunities for the growing rural population.

Agriculture sector performance, business development, location-specific factors like infrastructures, and other local, national and international conditions are widely known to have influenced businesses' development and the resulting emergence of small towns (Rijkers and Soderbom, 2013; Djurfeldt, 2015). The development of businesses within small towns is unlikely to be driven by one aspect instead by several interlinked and mutually reinforcing drivers (Karg *et al.*, 2018). Tacoli (2017) described that, social networks have shaped the landscape of business development in small towns for a long time. These networks evolve depending on available opportunities and constraints faced. The significance of social networks in shaping economic activities is underscored by Granovetter (1985) who argued that actions of businesses are largely influenced by their social networks in which they are embedded.

Hite (2005) and Hite and Hesterly (2001) argue that business ventures' characteristics and development are explained mainly by how they understand and manage the evolution of their social network relations or ties and its impact on business plans. Mainly because

networks play a crucial role in discovering opportunity, acquisition of resources and value chain governance. Murphy (2007) cements that networks are a means to ‘tap’ into tacit knowledge, which is affected by trust and spatial proximity and clustering of activities.

While small towns create geographical space for the development of rural businesses, little is known with respect to how social networks can be employed to tap into valuable resources that are vital for business development in these areas owing to the informal setting of the businesses and poor access to resources. Social network catalyses businesses development by endowing businesses with a means to seize strategic opportunities (Ma *et al.*, 2011). Benjamin and Kevin (2019) and Kilkenny and Fuller-Love (2014) support the view that social networks are instrumental to support business development. Moreover, Kuépié *et al.* (2015) attested that social networks supported business development in West Africa by influencing their performance and growth through cross border trade. However, empirical evidence detailing the role of social networks in supporting business development within small towns in the rural areas of the developing world, particularly sub-Saharan Africa is lacking.

This paper contributes to the current understanding of how existing social networks shape business development in small towns focusing on business development trajectories in two Emerging Urban Centres (EUC) in Tanzania. Specifically, it assesses the structure and flow of goods and services within and outside the EUCs. Besides, the study examines business/trading opportunities exploited given the actors’ position in the structure of the existing web of product and information exchange. Finally, the study examines how social networks affect EUC business performance. A hypothesis that tests the objective states that the size and influence of the business owner’s social networks characteristics have no effect on business performance.

## 4.2 Literature Review

Theoretically, this paper takes point of departure in the Social Network theory of organization and management (Borgatti and Foster, 2003). The theory emphasizes that actor's position in a network determines the constraints he or she faces and opportunities he or she seizes. According to Borgatti *et al.* (2013) networks are a way of thinking about social systems that pay special attention to relationships among entities that make up a system which are commonly known as actors or nodes. The characteristics of the nodes (businesses in this case) are termed as attributes while relations between nodes are termed as edges or ties. The edges are either directed or undirected, this study adopts a direct network to capture the flow of goods, services, and information between actors within and to and from the EUCs. On the contrary, undirected edges only signal that there exists a relation between actors/nodes without pointing out the direction of flow

Several studies have empirically established the influence of social networks on business development particularly in small towns (Dubini and Aldrich, 1991; Hoang and Antoncic, 2003; Walther, 2014). The role that business network performs is facilitation of the flow of market information, which is critical in creation and development of a business venture. Empirical evidence of the role of business networks on small business performance was established by Kuépié *et al.* (2015), where high returns were significantly explained by high network connectivity. The outcome of which depend on the structure and nature of embeddedness of a particular business in the network (Borgatti and Foster, 2003; Borgatti and Lopez-Kidwell, 2014; Walther, 2015). Social network analysis (SNA) as a method of analysing networks has in a similar way been used by Brønd (2018) to study differences in the oil-palm trading in Ghana. According to Brønd (2018), SNA allowed examination of the complexities of trade relations that other

methods seem to be incapable of doing. Analyses employed by both Brønd (2018) and Kuépié *et al.* (2015) encompassed informal filaments but were sector specific and narrow in scope. Thus, disfavours the large informal business sector present in most rural areas in the Global South.

Several studies (Fafchamps, 2001b; Bouzdine and Bourakova-Lorgnier, 2004; Spiro *et al.*, 2013) suggest that trade should be perceived as a relational activity. Furthermore, agents or businesses with similar attributes may realize similar outcomes because they tend to occupy similar network positions in their social structures and are exposed to similar constraints and opportunities (Borgatti and Lopez-Kidwell, 2014; Goyal, 2016b, 2016a). It has also been observed that economic agents like producers and traders tend to strike a balance between two structural extremes that determines their exposure to opportunities and affect their operations (Walther, 2015; Greenberg *et al.*, 2018). First, is a situation where economic agents are central to a limited number of peers (embeddedness) and second is a situation where they are structurally positioned as brokers between clusters of actors (Uzzi, 1997).

Embeddedness in networks is known to expose actors to information, ideas and shared values and promote collaboration across a variety of business categories. Tregear and Cooper (2016) found that embeddedness in rural communities allow sharing of knowledge and brings actors closer, thus empowering both individuals and the communities. A broker, on the other hand is considered crucial in providing external resources and ideas. Spiro, Acton and Butts (2013), identify three key roles played by brokers when there are many disconnected networks of actors. The roles include: transfer of resources between two disconnected parties 'rejoicing third', this role is played by

business that have external linkages connecting retailers with producers or suppliers; facilitating matching between two social actors for shared benefits ‘the third who joins, for instance, connecting businesses with banks or institutions that offer business development services such as provision of additional capital and training, and; connecting and coordinating business activities of third parties, this include sharing of new information with dispersed and geographically constrained actors (Brass and Krackhardt, 2012; Walther, 2015).

The literature reviewed reveals pathways through which business networks can influence business performance. However, more empirical studies are needed to clearly delineate such effects considering differences in business set-up, economic agents involved and key drivers of business performance and development including dominant agricultural commodities. The major focus of the study is on networks linking agents in farm and non-farm businesses in areas where businesses are predominantly in the informal sector and actors encounter unique challenges in accessing information and resources. The motive is to profile key actors, their positions and influence and how these factors affect exchange of information and products as well as overall business development in the EUCs.

The remaining part of the paper is organised as follows; the next section discusses the study methodology followed by a results section which; first presents an analysis of the kinds of businesses and products flow in and outside the EUCs; secondly, an examination of embeddedness and brokerage positions for businesses in their product and information networks; and thirdly, the discussion which reveals trading opportunities that can be realised through their connectivity. Later the study presents empirical analysis of the effect of social network size and influence on business development. Finally, the paper

provides a discussion of major findings observed and ends by a conclusion and policy implications.

### **4.3 Methodology**

A cross-sectional study design was adopted to obtain social network information from business owners in Ilula and Madizini EUCs where data was collected from specific points in time. Business networks are studied from a relational view encompassing product and information exchange, and from an attribute standpoint where tie relational features in terms of embeddedness and brokerage will be matched against business attribute characteristics across all categories of businesses. In this study, brokers (businesses with high betweenness centrality) are classified based on the roles they play in linking businesses within and across the business categories and those who coordinate traders within and outside the EUCs. Based on their structural positions (Gould and Fernandez, 1989) five types of brokers are analysed. These are gatekeeper, coordinator, representative, itinerant/consultant, and liaison (Spiro *et al.*, 2013; Walther, 2015). Gatekeepers link business from within the group, which in this case is within the EUC to businesses outside the EUC. Representatives, like a gatekeeper, play a central role of linking businesses outside the EUC to those within the EUC (vertical linkage). In this study these two are presumed to be central in sourcing and channelling potential (non-redundant) information and resources from new and distant actors. Coordinators are brokers who connect various kinds of businesses within the EUC. Information and resources shared via these brokers is considered vital for horizontal linkage. Liaison link businesses with the actor belonging to either of the group. They mostly include institutions like government and financial institutions. Itinerant or consultant are brokers who link two or more businesses of the same kind without him/her belonging to that kind or cluster of business. Institutions are the dominant players under this category.

The examination of the role of social networks on business performance was undertaken using individual (owner) characteristics and business dummies as controls. Business performance was modelled using estimates of daily sales turnover and size of its stock measured in Tanzania shillings. Sales turnover and stock data were used as a proxy for business performance because business profits (revenue and costs) could not be obtained due to lacking accounts of business transactions. In modelling business performance, the ordinary least squares method (OLS) is commonly used as it provides a causal linear prediction of the social network effect on economic outcomes, holding other factors constant (Berrou and Combarous, 2011; Kuépié *et al.*, 2015). While Goyal (2016) reveals the difficulties involved in determining the direct effects of social network on economic variables due to common endogeneity biases, the OLS regression was tested for endogeneity using two-stage least square regression (2SLS). Ethnic group dummies and father's business experience on the basis of information supplied by Kuépié *et al.* (2015), were used as instruments for degree and eigenvector centrality. Network degree and eigenvector centrality are social network attribute variables representing size and influence. However, robust chi-square tests identified them to be exogenous except for Madizini stock size, where 2SLS estimates were used.

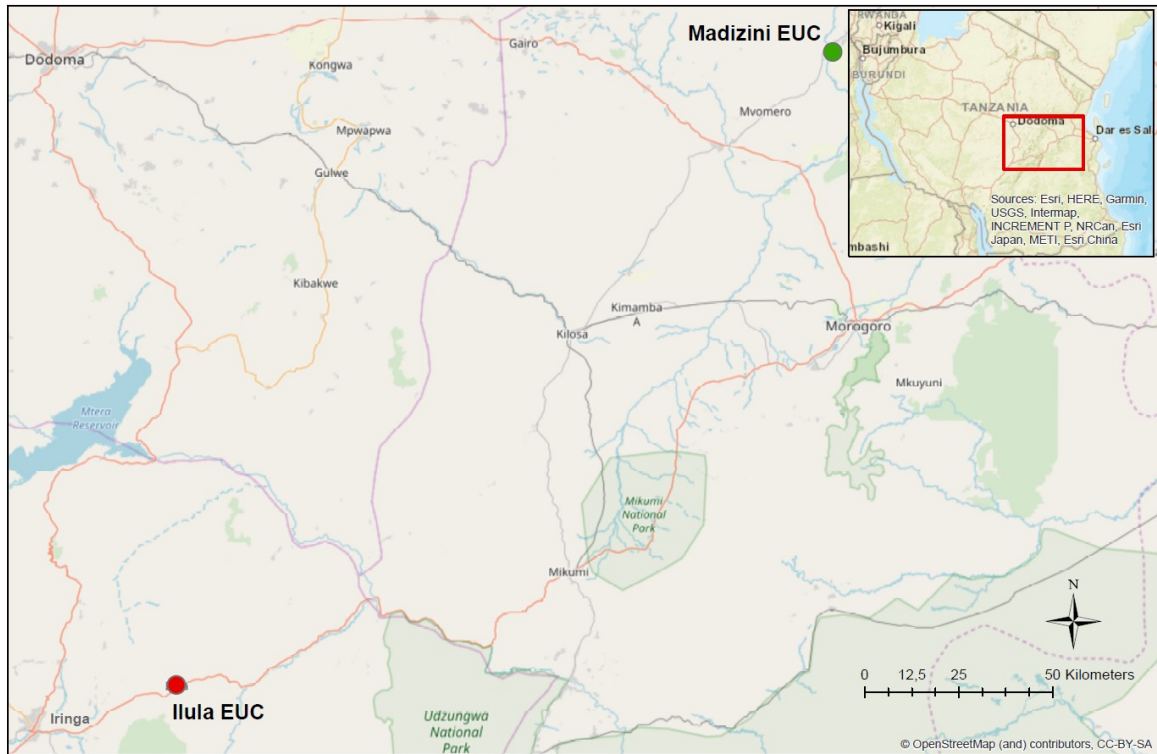
#### **4.3.1 Data collection and analysis**

Data were collected in 2017 through a business survey with structured questionnaire. The businesses as the unit of analysis were classified into five major categories comprising service-based businesses, shops and trading, workshop, processing manufacturing and transport. Business categories were formulated based on data for registered businesses obtained from the district trade officers and the Tanzania Revenue Authority (TRA). From the listed categories, 21 sub-categories were established. Businesses involved in

food and drinks like restaurants and bars; art, musical and video; hotels; cleaning and beauty and related services are clustered under service category. Businesses related to trading of items such as food crops; farm inputs; clothing, fabrics, and footwear; hardware, parts, and electronics; wholesale; vendor stalls; and household retail are clustered under shops and trading. The processing and manufacturing category comprised businesses involved in making packaging materials like tomato boxes; processing of timber and timber products; sale of construction materials; iron works; and tailoring. The workshop category consisted of businesses involved in repair shops and garages. The transport category encompassed transportation services like Bodaboda (motorcycles), Bajaji (three-wheel carriage) and trucking.

Ilula and Madizini EUCs were selected among four other EUCs from Tanzania within the Rural Urban Transformation Project (RUT) that studies how governance structures support economic transformation of small towns (Lazaro and Birch-Thomsen, 2013). The selection of the two EUCs was also informed by Africapolis<sup>6</sup> urbanisation database of Africa which spots growing towns overtime (Africapolis, 2019). Geographically, Ilula and Madizini are in the rural regions of Iringa and Morogoro regions. Ilula is situated in Kilolo district, 50 kilometres East of Iringa regional Offices and Madizini is within Mvomero district, 92 kilometres North of Morogoro regional Offices (Figure 4.1).

<sup>6</sup>Africapolis is a comprehensive and standardised geospatial database on cities and urbanisation in Africa, it combines demographic data, satellite and aerial imagery and other cartographic sources to generate long-term comparative and urban dynamics analyses for about 7 500 agglomerations in 50 countries. See [www.africapolic.org](http://www.africapolic.org)



**Figure 4.1: Map of Tanzania showing Ilula and Madizini EUC**

### 4.3.2 Sample and sampling design

The goals of the business survey were to 1) extract basic information on the actors (businesses) in the EUCs covering both business and individual characteristics; and 2) generate product/service and information networks using so-called name generators. This involved asking questions like from whom they buy from and sell their products most frequently, and from whom do they get and give/share information regarding the business more frequently. In addition, the questionnaire contained closed and open-ended questions about the types of products and information that were shared, frequency of interaction, volume of exchange and location related to the sources and destinations of the goods.

A complete list of all the businesses located in the EUCs was not available at the district or ward level, as no prior business network mapping was done in these two locations.

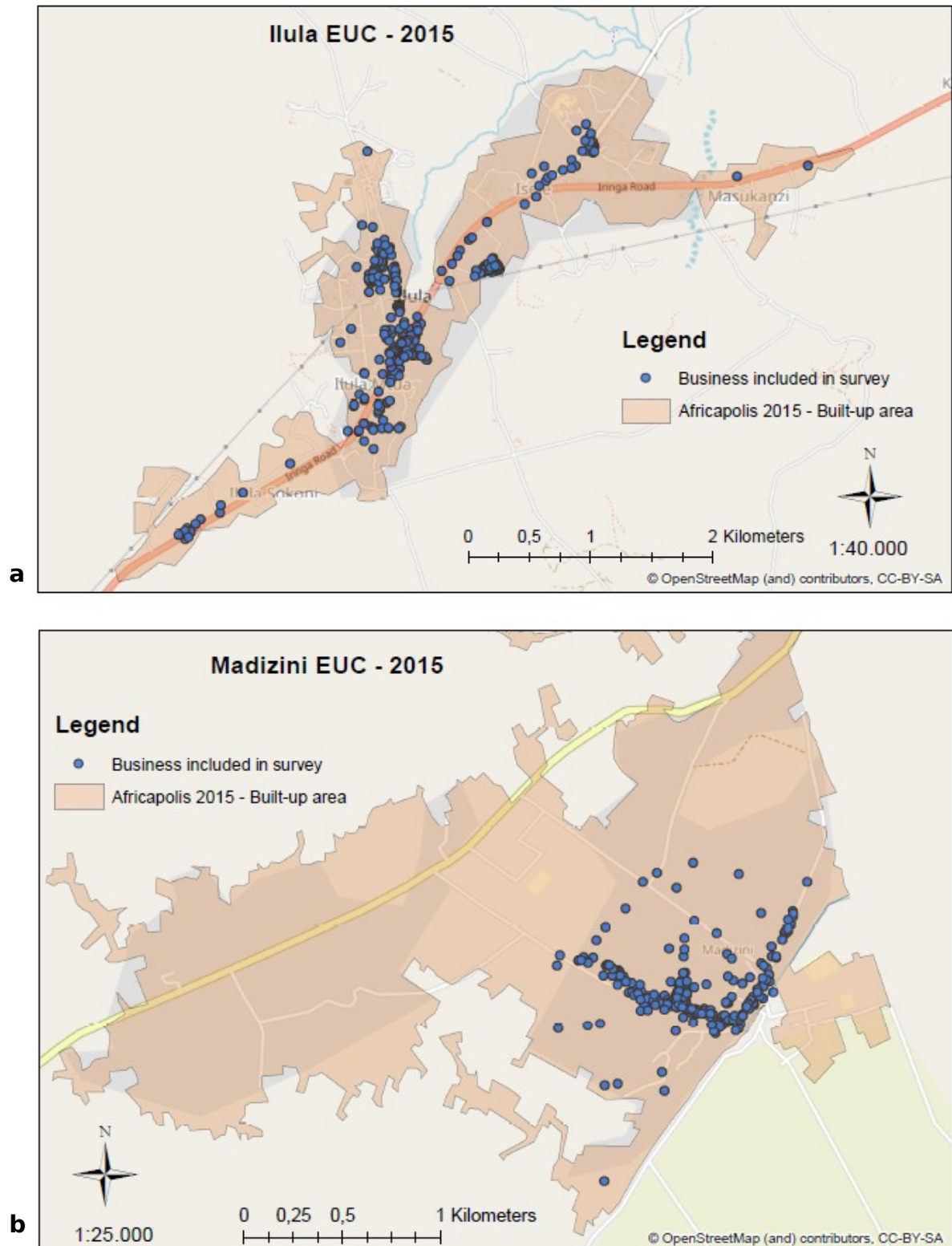
Therefore, the selection of respondents was guided by network boundaries established during fieldwork, which were product and information ties within pre-defined boundaries of the EUCs. In identifying the boundaries, satellite and google maps were used to delineate the geographical areas of the EUCs with high built-up areas and zones where most businesses were located. Using spatial-random design as by Brønd (2018), the selection of businesses was done randomly within each of the predetermined categories of businesses (as previously discussed) and geocoded based on their location. Guided by their spatiality and importance, businesses were asked to name at most eight people that they frequently traded and shared information in 2016. The survey was extensively done to have spatial coverage of businesses of all kinds in the EUC area with an intent to uncover the existing network of product and information exchange. A total of 459 businesses in Ilula and 296 business in Madizini were surveyed. The scope of the study was limited to business-to-business ties and businesses within the custom established by the boundaries of the EUCs. The location of sampled businesses in Ilula and Madizini are illustrated in Figure 4.2 and were generated using Africapolis (2015) sentinel maps.

To supplement the network information obtained through the questionnaire survey, qualitative data were collected through key informant interviews and focused group discussions. Interviews were conducted with the Township and/or Ward administration, elders, financial institutions (including banks and other financial intermediaries like Savings and Credit Cooperatives (SACCOs) and Village Community Banking (VICOBA)), Tanzania Revenue Authority, Mtibwa Sugar Company, Mvomero and Kilolo District offices, business associations and Township Trade Officers. Focus group discussions were also carried out with members of business associations including two Bodaboda groups, and two Furniture making groups, as well as one youth groups. All

interviews were conducted with the aid of semi-structured interview guides that entailed a set of questions about the historical development of the businesses and the role and scope of the institutions in supporting business development in the EUCs.

The network data obtained from the business survey was analysed in Gephi software (Bastian, Heymann, and Jacomy, 2009) in order to obtain centrality measures. Embeddedness and brokerage in business and information networks were computed using degree centrality and betweenness centrality, respectively. Degree centrality ( $C_d$ ) measures the number of ties that a node has relative to the total number of ties existing in a network. A directed network has in-degree and out-degree ties whereby, in-degree are ties towards an actor, reflecting his/her importance and, out-degrees are ties away from an actor, reflecting actors influence. Embeddedness in this study therefore is used to refer to a state where a firm has large size of total network connections of high degree centrality compared to other surrounding firms or nodes. Betweenness centrality measures how often an actor appears to be on the shortest path among actors in the network of businesses. It's the number of times a node occurs along a geodesic path.

Figure 4.2 a and b shows that businesses in both EUCs are found to be along the major transport routes and areas where most agricultural products are traded. Majority of these businesses were tomato traders, brokers, transporters, and other service providers like restaurants, food vendors and bars which concentrated around the Ilula TASAF tomato market. While wholesale and retail stores are located on the roadside of Morogoro to Mbeya highway in Ilula. In Madizini, rice traders and brokers were closer to paddy/rice milling machines, while wholesale and retail shops and restaurants were located along the Madizini road and traders of agricultural produce were concentrated in the Madizini food market. The reallocation of Madizini bus terminal to Manyinga has created new avenue for new business operations.



**Figure 4.2: The location of surveyed businesses in Ilula (a) and Madizini (b) EUCs**

After data processing, nodes in the purchase and selling networks were merged to form a full product network. Similarly, network of sources and receivers of market information were merged to form a full network of information exchange. Yifan Hu proportional and OpenOrd visualization layout formats (Hu, 2011; Martin *et al.*, 2011) were employed to plot embeddedness and brokerage position of actors in the product and information networks respectively (Figures 4.3 to 4.6). The qualitative data obtained from key informants and focus group discussions were processed according to the different types of questions asked followed by a more detailed examination of patterns and explanatory factors on business development trajectories in the EUCs.

The following section presents the results of analyses of the nature and role of business networks in the studied EUCs. The section starts with a brief outline of the main characteristics of the businesses in the EUCs, followed by discussion of flow of goods bought and sold within and outside the EUCs. thereafter the manuscript presents the discussion of business networks depicting businesses occupying brokerage and central positions in the EUC product and information networks and their potentials. Finally, is the discussion of the role of social networks on business performance as an indicator of development.

## **4.4 Results**

### **4.4.1 Characteristics of the businesses in the EUCs**

The business environment in both Ilula and Madizini EUC has developed dramatically in the last decade with 64% of the sampled businesses in both EUCs being established between 2010 and 2016 (Table 4.1). While it reflects increasing business developments targeting strategic opportunities in the EUCs, it also shows low survival rate for rural

businesses. Businesses established before 2005 makes up a very small proportion with less than 12 and 20 % of total establishments in Ilula and Madizini EUC respectively. Moreover, despite the remarkable growth, majority of these businesses are operating in an informal sector. About 68 % and 42 % of the businesses in Ilula and Madizini EUCs respectively were not registered at any formal authority, like Business Registration and Licensing Agency (BRELA) and Tanzania Revenue Authority (TRA).

**Table 4.1: Description of business owners in Ilula and Madizini EUCs**

Category	Description	Ilula		Madizini	
		n	%	n	%
Year of start-up	<2005	55	12.04	55	18.84
	2006-2010	101	22.10	55	18.84
	2011-2015	235	51.42	100	34.25
	>2016	66	14.44	82	28.08
Business ownership	Private	419	91.29	249	83.84
	Family	30	6.54	31	10.44
	Partnership	10	2.18	17	5.72
Business registration status	Formal (registered)	146	31.81	173	58.25
	Informal (unregistered)	313	68.19	124	41.75

Note: The variation in the sample was attributed by nonresponses within category

With large informal sector, majority of businesses were also in an easy to enter and exit ventures like shops and trading (Table 4.2). In both EUCs, more than 60% of the businesses were either general shops and/or engaged in trade and were largely unspecialized. Majority of these businesses were put in the same category to represent a group of businesses that tend to be small in size with low investment capital, employing few or no formal workers and involved in trading small and mostly unspecialised commodities (requiring little or no trained skills) (Adisae *et al.*, 2014). Transportation<sup>7</sup> (Bodaboda, Bajaj, minibuses, and trucking) and food related businesses accounted for 53

<sup>7</sup> For ease of analysis, transportation and workshop business categories under this section are included in the service and manufacturing categories respectively, because they were considered as a less distinct business types. They are however considered as unique categories in other sections analyses.

and 35 % in Ilula and 23 and 38 % in Madizini of the businesses in the service category. About 34% and 20 % of businesses in Ilula and Madizini operated/traded food crops like tomatoes, rice/paddy, and other cereals, followed by vendor stalls and retail shops. In Ilula, food processors accounted for 31 % of businesses within the category of processing and manufacturing. On the other hand, sewing works were dominant in Madizini (37 %) and were fuelled by high demand for school uniforms from at least 4 primary and 3 secondary schools located in the district. Timber related businesses like wood/log processing and carpentry were notable in both EUCs (19% in Ilula and 21% in Madizini). The development of these businesses is attributed by proximate tree plantations in Mafinga and Mtibwa for Ilula and Madizini EUCs accordingly.

**Table 4.2: Category of studied businesses in Ilula and Madizini EUCs**

Business category	Business Type	Ilula			Madizini		
		n=459	Category	% of total	n=296	Category %	% of total
Service	Food and Drinks	46	35.66	28.10	28	38.36	24.66
	Art and studio	2	1.55		1	1.37	
	Hotel Amenities	7	5.43		3	4.11	
	Cleaning and Beauty	1	0.78		11	15.07	
	Transport	69	53.49		17	23.29	
	Other services	4	3.10		13	17.81	
	Shops and trading	Food crops Trading	94		33.81	38	
Farm Inputs	16	5.76	2	1.05			
Clothing's	23	8.27	36	18.85			
Hardware	19	6.83	60.57	23	12.04		
Wholesale Retail	4	1.44		6	3.14		
Vendor Stall	75	26.98	14	7.33			
Retail shop	33	11.87	67	35.08			
Others	14	5.04	5	2.62			
Workshop, manufacturing and processing	Workshop/Garage	11	21.15	5	15.63	10.81	
	Packaging Materials	11	21.15	0	0.00		
	Timber works	10	19.23	7	21.88		
	Food Processing	16	30.77	11.33	4		12.50
	Construction	2	3.85		0		0.00
	Iron Works	0	0.00	4	12.50		
	Tailoring	2	3.85	12	37.50		

Note: The variation in the sample is attributed to non-responses within each category.

Another dominant manufacturing-based business in Ilula was the repair shops/garages and makers of bamboo baskets and tomato packing materials. Workshop included small repair shops and garages for bicycle, motorcycle (most of which were located near hardware stores) and motor vehicles. Some of the salient and emerging businesses observed in Ilula were shoe making, tractor-trailer manufacturing businesses, and food processing factories due to new opportunities created in the tomato and rice subsectors.

#### **4.4.2 Business networks and the flow of goods and services**

##### **4.4.2.1 Purchase and selling networks in and outside the EUCs**

This section examines the flow of goods and services within and outside Ilula and Madizini EUCs with respect to goods purchased and sold to reflect the characteristics of products traded and origin. The study identified that more than half of stocks sold by the surveyed businesses within Ilula EUC were purchased from within the EUC, while about half of the items sold by the businesses in Madizini came from within the EUC (Appendix 9A). This is based on the report where, 70 and 54 % of 1066 and 740 identified network ties or connections of purchase network in Ilula and Madizini, respectively were linked to trade exchanges within the EUC. Moreover, about 80 % of product sales in Ilula and Madizini went to businesses and final customers within Ilula and Madizini EUCs (Appendix 9B). Among the goods purchased within Ilula EUC, 15 % and 13 % were tomatoes and food items sold in vendor stalls. A high proportion of locally purchased and sold products reveals expanding intra-EUC trading. This reflects available market potentials for goods produced and sold within and outside the EUCs. This also cements EUCs as trade hubs in the rural areas of the Tanzania as EUCs provided a cheaper means

to access goods in wholesale due to variables connected to low capital base and distance that add into high transaction costs. One local retailer in Madizini said that:

*“... it is easier for many of us to buy goods from our local wholesalers because travelling to Dar es Salaam or Morogoro town to buy small sized stock will not be profitable as most of businesses here (in Madizini) and nearby villages have small capital and the high risk of brokerage and theft/loss of goods while on transit makes it even more difficult...”* (interview conducted with a retailer, Madizini, July 2017)

Ilula and Madizini EUCs are also revealed as market nodes for goods from surrounding villages, districts and regions, most notably agricultural related products including forestry products. An interesting observation was the growth of specialized lines of businesses in both EUCs like mini supermarkets, hardware stores, spare parts, electronics, furniture and fixtures, motorcycles, and tricycles (*Bodaboda* and *Bajaji*) where goods were sourced mainly from outside the EUCs and traded to customers within the EUCs. Other specialised industrial goods like hardware, gas, timber, farms inputs, clothing and processed rice were the popular commodities from the EUCs traded to surrounding sub-villages and wards of Ilula and Madizini. Agricultural produces mainly tomato (84 %) and paddy/rice, made-up a large proportion of goods sold outside the EUCs, mainly to surrounding regions like Dar es Salaam, Coast region, and other countries like Kenya and Uganda.

#### **4.4.3 Structure of business networks in EUCs**

Assessment of business position within a network of products and information exchange in and outside the EUCs and across different business clusters are expected to inform

about trading potentials and constraints. While embeddedness and brokerage are in theory known to be important extremes, most actors like to exploit these influences for own benefit, the study treats the influences as avenues to foster businesses development and ensure mutual benefits to agents involved. The next section therefore classifies businesses using their scale of connections (degree centrality) and positions across business clusters (betweenness/brokerage). This aims to uncover the more central (highly embedded) actors and brokers (connectors). The analysis is based on the five overall categories of businesses presented in Table 4.2.

#### **4.4.3.1 Embeddedness and brokerage in product networks**

Highly embedded businesses are known to have large market power/influence, and thus, act as central links to access resources like information for other businesses in the network. In this study, businesses in the shops and trading category, mainly hardware stores, wholesale and retail traders, and tomato traders were observed to be highly embedded businesses in Ilula, as portrayed in Figure 4.3. Similar findings were observed in Madizini where hardware stores, wholesale and retail, and paddy/rice processing businesses were the highly embedded businesses in EUC's product network. Most of these businesses sourced goods from a few general suppliers in both EUCs as backed up by the earlier observation of high volume of within EUC purchases. The highly embedded businesses in both EUCs were also well connected to other businesses in the service, transport, manufacturing, and processing categories. Apart from businesses in the trading category, two service-based businesses in Madizini and three service-based businesses and manufacturing in Ilula were found to be highly embedded, mainly due to the linkages they formed with businesses in rice and tomato value chains. Interconnectivity with

variety of other business pictures their influence and is also a benefit to the businesses that can be realized through these connections to further expand their products' markets.

High level of embeddedness amongst these businesses also translate to high level of trust existing among the businesses in the EUCs. In an interview with a representative from the association of businesses and retail shops in Madizini, he reported:

*“... most businesses here are retail shops and obtain their products from popular wholesale shops. Some businesses buy their goods on credit because they are trusted to repay the shop owner in future and most businesses in the food market started by getting products on credit...”* (Interview conducted with a business association representative, Madizini, July 2017).

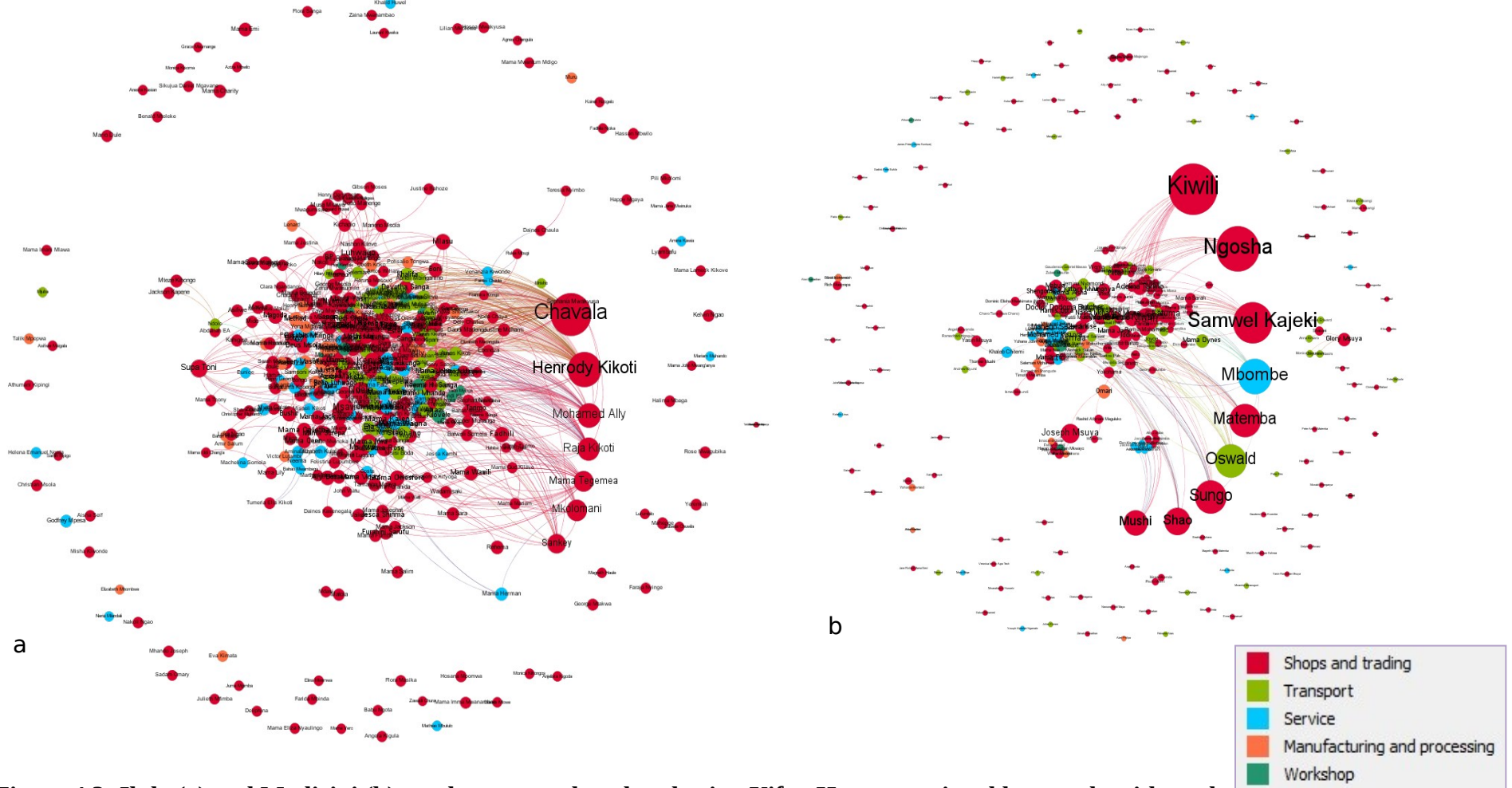
Thus, trust was central in maintaining relations chiefly with wholesale and retail businesses and traders of agricultural commodities in the local food market. It also acted as a tool to source stock on credit which further guaranteed the ties and continued business transactions.

#### **4.4.3.2 Brokerage in product networks**

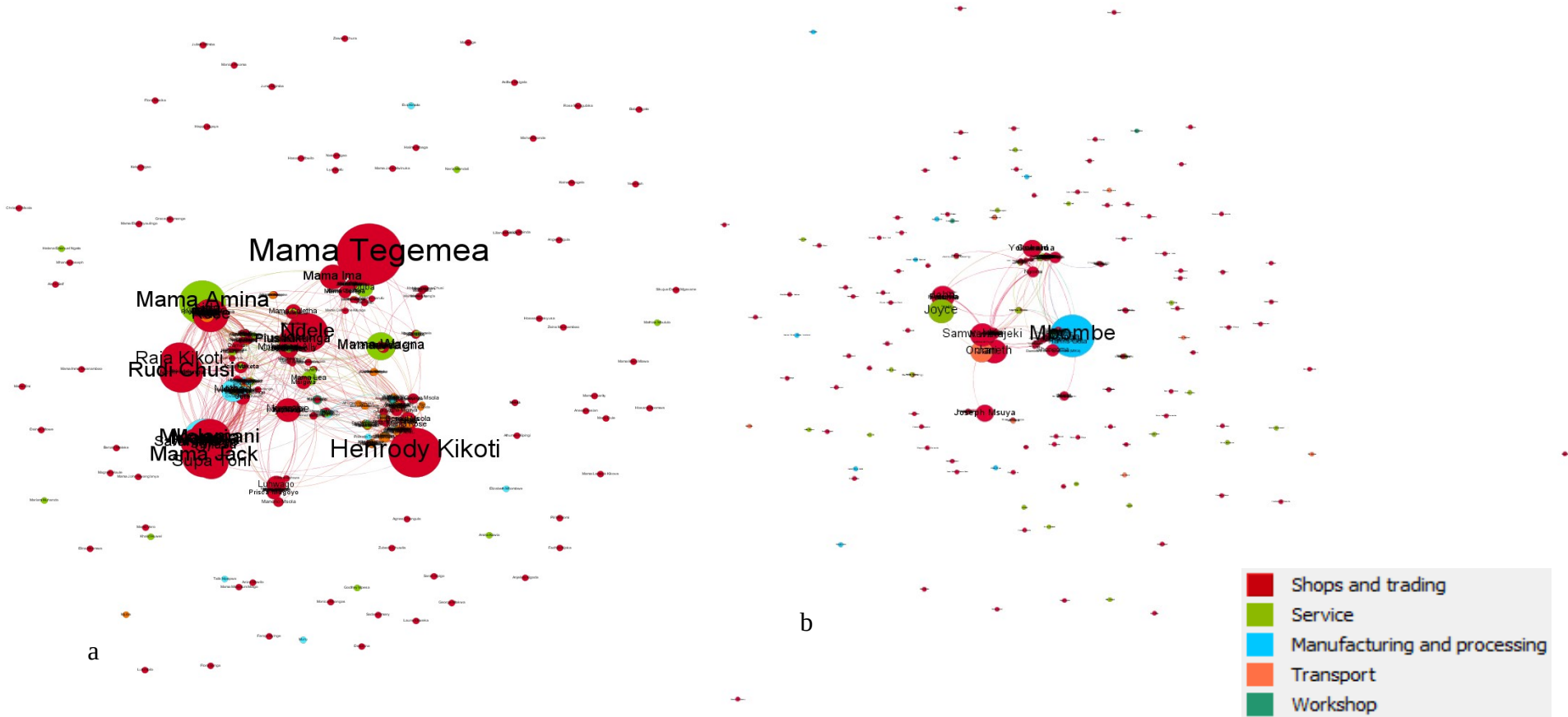
In the context of brokerage of resources, results are categorised based on the four kinds of brokerage positions. In both EUCs, the gatekeeping position was found to be occupied by businesses belonging to the shops and trading category like wholesalers and traders of agricultural products who were all highly connected with businesses outside the EUC. In Ilula, the gatekeeping brokerage role was played by tomato brokers<sup>8</sup> and traders,

<sup>8</sup> Tomato brokers here are identified as agents who mediate exchanges between tomato farmers and tomato traders or buyers, so the actual meaning of a broker differs from brokers as expressed in other contexts where the rest of the text like term is used such as gatekeeper, coordinator, and liaison brokers.

wholesalers of vendors stall and household consumables. About six groups/clusters of tomato traders, wholesalers, tomato brokers, vendors stall, and restaurants/food vendors were observed with at least one business being a major connector or broker of the cluster. As illustrated in Figure 4.4, brokers/gatekeepers were clustered based on the rate of product exchange recurrence. The two large actors with high normalised betweenness centrality as key brokers exerted significant influence on products network beyond the EUCs. In Madizini (Figure 4.4), two wholesalers, hardware store, and crop traders within the shops and trading category as well as transporters and operators of mobile money service occupied gatekeeping brokerage positions. Fewer paddy value chain actors were observed to take this position in Madizini, compared to the case in Ilula. One prominent paddy processor and one wholesale shop owner were the main brokers in Madizini. Similarly, it was revealed that tomato traders, and wholesale traders in Ilula, and mobile money service providers, transporters and wholesalers in Madizini acted as representative brokers who played a role of linking businesses outside the EUC with those within the EUC. Information and resources from external actors/businesses linked by representative brokers engaged with tomato, wholesale trade, transportation, and money transfer business were seen to be vital for businesses development. Business playing a gatekeeping and representative brokerage roles are thus a potential to EUCs economy given their positions and resources like market access and information at their disposal.



**Figure 4.3: Ilula (a) and Madizini (b) product network ordered using Yifan Hu proportional layout algorithm where node size represent the degree centrality and node colour represent business category**



**Figure 4.4: Ilula (a) and Madizini (b) brokerage network mapped using Openord layout with node colour representing business category, node size representing betweenness centrality, and edge colour depicting location**

Coordinator brokers, traders of wholesale-retail household consumable goods and restaurants in Ilula and one rice/paddy processor in Madizini were observed to play leading role in linking businesses internally in the EUCs. Most of the businesses with medium and high level of embeddedness were also connected to many other businesses across different categories such as retailers, transporters, and service providers (e.g. local food vendors). The observation that similar businesses appear to link businesses internally reflect low density/diversity of product networks whose implication are related to lack of new information, innovation, and subsequent constrained business development. In Madizini, one rice processing business was observed to take a leading role in coordinating information than other businesses in the entire sample as it was linked to many poorly intra- and interconnected businesses. The business was referred to as the trusted processor and supplier of rice in and outside the EUC, the reputation was cultivated for more than 20 years of lone operation. While rice production and demand are increasing, emphasising, and strengthening networks amongst currently poorly connected business community is an opportunity that is not yet fully exploited.

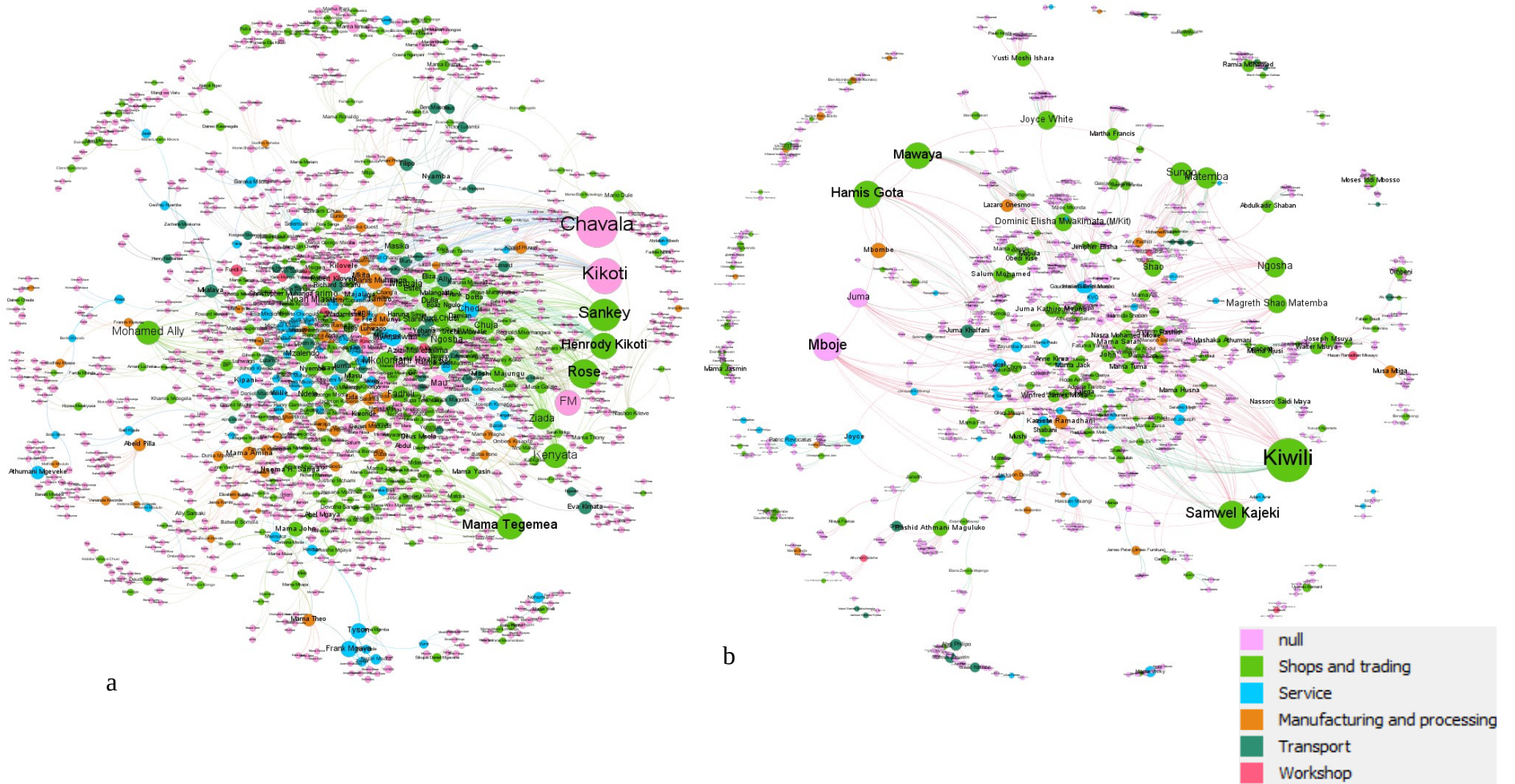
Liaison and itinerant brokerage positions are not presented in the network graphs (Figure 4.4). However, they implicitly made an impact in the network of business and information exchange. The liaison brokerage position or role in Ilula and Madizini was largely played by public and private institutions like NMB and CRDB commercial banks; Turiani SACCOS in Madizini and Mazombe SACCOS in Ilula; local government (Township Executive Officers office); and other government and non-governmental institutions such as TASAF, BRAC, Vision Fund, and Mama Bahati Foundation. It was realised through interviews that public and private formal institutions provided knowhow and information to businesses in the EUCs through consultations and training. Itinerant or consultant brokerage position in the two EUCs was played by small financial intermediaries like

BRAC, SACCOS (in both EUCs), and Vision Fund. They only linked the targeted business groups like food vendors and vendor stalls.

#### **4.4.4 Information exchange network**

##### **4.4.4.1 Embeddedness in information networks**

While product exchange networks act as sources of market information, the trusted sources of exchanging market information are not limited to actors who exchange goods. Businesses with high degree centrality in information network reflects the level of trust invested and key role they play in delivering reliable market information. Compared to the product networks, information exchange network in Ilula had more actors with high degree centrality, including businesses engaged in wholesale, hardware, tomato trading, and transportation. Paddy/rice traders, food crops traders, wholesalers, tailoring/couture and mobile money service businesses appeared to be highly embedded in the Madizini information network (Figure 4.5). A closer examination revealed that a trader of paddy/rice play a more central role in the information network than in the product network in Madizini. In Ilula, a transportation broker/agent surfaced as a central player in channelling (receiving and delivering) transportation-related information in the whole area of Ilula EUC, mainly to business actors involved in the tomato value chain. Businesses presented as null represent businesses which were referred to be prime sources of information within and outside the EUC, but they were not surveyed due to non-responses.



**Figure 4.5: Ilula (a) and Madizini (b) information network graph ordered using Yifan Hu layout algorithm where node size represent the degree centrality and node colour represent business category**

The structural position of many of businesses in Ilula as illustrated in the network graph (Figure 4.5) rely on their network structure with tomato value chain businesses. This signals that the businesses within tomato value chain largely influences the nature of business and information networks in Ilula. The majority of businesses located outside the graphs in Figure 4.5 are seen to have a poor linkage with EUC information networks. Coupled with other variables like capital and informality, poor network integration curtails their development initiatives as innovative information is limited. Businesses in the category 'workshops' (garage and repair) in Madizini had one actor who played a central position. The structural position of the business was influenced by 24 years of experience and networks that the business maintained mainly from motor vehicle businesses, spare parts shops and other garages. The networks persisted for a long time given the information and expertise shared which also cultivated high level of social capital. Information networks are hereby revealed to be broader, involving more actors driven by the intrinsic value/importance of information for enterprise development as each business tries to broaden its network base to have better access to information.

#### **4.4.4.2 Brokerage in information networks**

Like product exchange network, the act of relaying business information to different groups or clusters of businesses was observed to vary across categories/type businesses and proximity to each other. In Ilula information exchange network, tomato traders and brokers/agents, and wholesale traders were observed to play a gatekeeping brokerage role. That is by linking businesses within the EUCs to businesses outside the EUCs. The nature of interaction between clusters was based on the kind of information they frequently exchanged (Figure 4.6). About six major clusters of information network were observed, each with two dominant gatekeepers channelling information across other clusters. The

exchange included information on product market or customers, pricing, freight, and time of supply as well as seasonality.

In Madizini (Figure 4.6), wholesalers, rice traders and rice processors played the role of gatekeeping with three major clusters created among them. While no distinct clusters were found in Madizini product network, the information network revealed the interdependencies they share across. In the clusters, a high association was observed between rice/paddy processors and traders, wholesalers, and traders of houseware and plastics. Another cluster comprised hardware stores, wholesale shops, clothing traders and transporters where information on market, price, transportation, and product availability was frequently shared.

While involving more actors than in the product network, gatekeepers in the information exchange network in both EUCs played a key role of channelling information across other interconnected clusters. This enhanced efficiency compared to product business network where clusters were of specific trading class. Whereas many businesses were less connected into these clusters within and outside the EUCs and given the broader mix of actors present in the information exchange network, creation of linkages particularly with such gatekeepers is important.

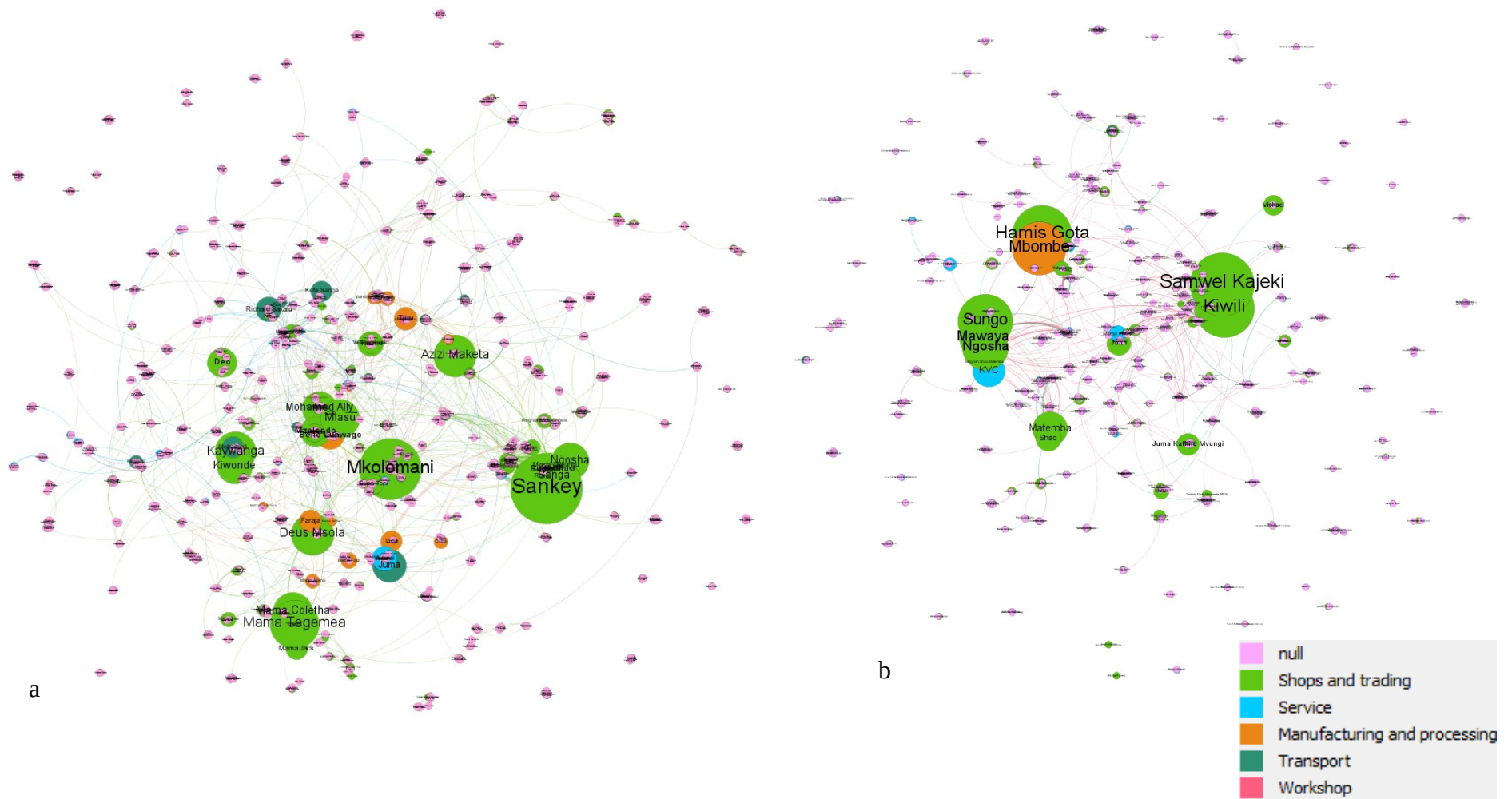
In the service sub-sector, the traders, and suppliers of soft drinks to customers engaged in tomato business in Ilula were observed to play a central role of gatekeeping in this category. In Madizini, one actor involved in the hotel and transportation business appeared to be a key gatekeeper. This business's structural position and role was peculiar because the owner provided other businesses with information related to hospitality and

transportation of both passengers and goods from areas outside the EUC. In a similar way, one rice processor who was a gatekeeper in the product network in Madizini also appeared in the information network. Like other brokers, the business linked and channelled information to most rice traders, processors, retail and wholesale shops, and institutions within and outside Madizini EUC. Its structural position comes along with long lasting trade relations, some dating back to the 1990s.

The brokerage role of a coordinator was performed by similar businesses in both Ilula and Madizini information networks. In both EUCs, wholesale and retail shops in the shops and trading category played this role by coordinating information flow across other different categories of businesses within the EUCs. This is because most of the products were sold locally to retail shops and customers within the EUC as opposed to tomato and rice/paddy that were mainly sold outside the EUC. The network graphs of Ilula show that businesses relied on information from businesses in proximity to each other and involved in the similar business. In Madizini, most businesses that played the role of a broker exchanged information with more than one category of businesses as compared to the product network.

Similar to product exchange network, government and non-governmental institutions played limited role of liaison and itinerant brokerage position in channelling market information to businesses. According to the interviews conducted with key informants, information was channelled to businesses through their formal and informal business and social organisations like the association of Ilula and Madizini businesses. This information was largely in form of directives (laws and regulations from the local government and business associations providing guidance on business operational issues

in the EUCs) and training or support in form of business initiatives. While organisations are understood to be organs that facilitate networking and smoothen information and resource flow, a large proportion of business community was not served by these organisations.



**Figure 4.6: Ilula (a) and Madizini (b) information brokerage network, structured using openOrd layout where edge colour represent location, node colour represents business type and node size represents betweenness centrality**

#### **4.4.5 Social networks and business performance**

The structure of EUC business networks revealed a pool of trading potentials. Similarly, increasing business owners network connectivity increased likelihood of business development through increasing its returns. The results of a correlation and OLS (2SLS) analysis revealed that social networks positively influenced EUC business performance. The size of social networks measured by weighted degree centrality and network influence measured by eigenvector centrality were observed to have a positive and significant correlation with business stock size and sales turnover in both EUCs (Appendix 7). From Table 4.3 it was revealed that a percentage increase in the size of the social network (measured by weighted degree centrality) in the product exchange network increased the size of stock and sales turnover by 30 % and 48 % in Ilula and Madizini respectively. Eigenvector centrality scores suggested that being linked to actors who are also well connected (with high weighted degree centrality) increased business sales turnover by 55 % in Ilula. Based on other controls, the analysis further established that being a male business owner, trading food crops, wholesale and retail businesses, with capital and years of experience increased by a percent led to increased percentage of stock and sales turnover in both EUCs. This cements the fact that while position of a business in the general web of network increased access to resources the increase impacted positively on business development via increasing its returns.

**Table 4.3: OLS and 2SLS regression of influence of social network on business performance**

Regressors	Ilula		Madizini	
	Log Sales turnover	Log Stock	Log Sales turnover	Log Stock (2SLS)
Log age	0.150 (0.477)	0.470 (0.325)	0.144 (0.439)	-0.152 (0.708)
Dummy sex (male=1 and zero otherwise)	0.790*** (0.224)	0.268* (0.151)	0.371* (0.220)	0.226 (0.502)
Log education	0.123 (0.222)	-0.056 (0.126)	0.455 (0.382)	0.982 (0.953)
Log household size	-0.009 (0.148)	-0.056 (0.119)	0.169 (0.172)	0.362 (0.480)
Food-crop trading	1.330*** (0.242)	0.009 (0.188)	0.813** (0.341)	0.137 (0.917)
Wholesale and retail trading	-0.073 (0.269)	0.614*** (0.214)	0.324 (0.272)	1.380*** (0.511)
Manufacturing and processing	0.401 (0.477)	-0.166 (0.356)	-0.404 (0.379)	0.528 (0.553)
Transport	-3.376*** (0.358)	0.406 (0.293)	-1.272*** (0.414)	1.806** (0.740)
Log start-up capital	0.596*** (0.066)	0.694*** (0.052)	0.170*** (0.062)	0.428*** (0.110)
Log network size	-0.229 (0.204)	0.301* (0.160)	0.484** (0.199)	2.298 (2.590)
Log network influence	0.546*** (0.118)	0.026 (0.091)	0.065 (0.103)	-1.655 (1.139)
Log business experience	-0.051 (0.115)	0.184** (0.091)	0.435*** (0.120)	0.312 (0.247)
Constant	5.236** (2.086)	1.996 (1.399)	6.352*** (1.866)	-3.742 (6.065)
No. of observations	366	325	198	205
F	45.3	12 312 (80.69)	12 185 (9.88)	12 192 (19.77)
Prob>F	0.000	0.000	0.000	0.000
R-squared	0.5711	0.7089	0.3388	0.5679
Root MSE	1.4531	0.97875	1.4339	1.2924
Robust score chi2(2)	4.403 (0.111)	1.670 (0.428)	2.259 (0.323)	5.225 (0.073)
Robust regression (Wu-Hausman test F(2,351))	2.129 (0.120)	0.829 (0.438)	1.154 (0.318)	2.782 (0.064)

Note: \*, \*\* and \*\*\* denote that the coefficient is significant at 10%, 5% and 1%; respectively. Robust standard errors are in parentheses.

Source: author's compilation.

#### 4.5 Discussion

The results reflect the vibrancy of EUCs in Ilula and Madizini as fast-growing centres attracting migrants from surrounding rural and urban areas and other parts of the country which in turn impact positively on the EUCs growth and business investment. Many business investments were observed to mushroom mainly around crop value chains. Tomato trading in Ilula for instance, saw an increasing number of business ventures operating alongside like processing and manufacturing, transportation, trading, and retail businesses. Similar businesses also developed alongside paddy value chain in Madizini. Business in EUCs in Ilula and Madizini were also observed to operate more in an informal economy as majority of them were established in an easy to enter venture with low capital requirements like retail trading and vending. However, informality has been well documented as a major constraint to business development in developing countries particularly in sub-Saharan Africa as it constrains access to financial services, and market information (Meagher, 1995). While informality has been a constraint, social networks can be described as a potential that rural businesses around EUCs can deploy/capitalise to source limited resources.

The two EUCs were revealed to be market and agglomeration centres for produce brought from other urban areas and agricultural produce from surrounding rural areas. Most of these products were traded to and from many local, regional, and international markets, depicting the interconnectedness and potentials that EUCs possess. This conforms with Lazaro *et al.* (2019), Griet Steel *et al.* (2019), and Tacoli (2017) who exemplified that fast growing urban centres in the rural areas of the Global South like Tanzania represent market nodes or points of agglomeration for rural and urban goods.

While most of goods traded out to regional and international markets is of low value (ungraded, unpacked or in raw form), the emergence and growth of specialised lines of businesses particularly in industrial products such as furniture, fixtures, manufacturing and processing are projected to significantly impact future business development in the EUCs. This is supported by Dutta (2002) and Roberts (2016), where networks of specialized businesses are stressed to be core in fostering small towns development and economies of size as evidenced in Vietnam and West Bengal.

Products and information were identified to be key social network flow variables that were critical for rural business development. Businesses in Ilula were observed to be increasingly interconnected compared to businesses in Madizini and trust functioned as a tool to solidify exchanges. However, most businesses (59 % from Ilula and 89 % from Madizini EUCs) were observed to be less networked with fewer than 9 weighted connections, thus occupying residual positions. The remaining few businesses mostly in wholesale and those connected to agricultural value chain business were observed to occupy central positions where access to products and resources is more guaranteed. Lacking or poor integration with majority of businesses is considered as a constraint towards business development. This conforms with Fafchamps (2001a) and Mugione and Farinelli (2010) arguments that, as businesses are motivated by opportunity seeking attribute to develop, poor linkages and relations within the wider network of business lower their chances of finding inputs and markets thus, curtailing development.

Businesses involved in trading products and services to and from the EUC to surrounding rural areas, regions and international markets were a unit of vertical network linkages. These were central in sourcing quality goods and non-redundant market information pertinent to EUC business development. Similar businesses that were central in linking

businesses vertically played a role of enhancing horizontal network linkage for both product and information networks. However horizontal network linkage with businesses within the EUC were limited to businesses within similar cluster/category and neighbourhood and were fewer in Madizini than Ilula which limited chances of development due to information redundancy. This discussion conform to strength of weak tie theory by Granovetter (1973) and Groh *et al.* (2013) who assert that distant actors who are spatially separated have a greater role in enhancing growth than close strong bridges. According to Håkansson and Snehota (1995; 2006) and Håkansson and Ford (2002), connections with distant actors contributes significantly to business development as value of goods traded increases and information acquired from such markets adds to fuel further exchanges and innovation. Thus, enhancing vertical and horizontal network with spatially distant businesses is prime strategy towards EUC business development in the rural areas of Tanzania. Jung and Lake (2011) have emphasised that formal institutions/organisations are instrumental in smoothening information exchange and reduce market uncertainties. However, institutional arrangements in the EUCs played no role in supporting business network and development due to lacking organisations and governance role play.

Similarly, increasing business network, guaranteed business development through enhanced performance where well-connected businesses experienced growth of stock and sales turnover. This reflects that increasing the number of network linkages broadens the business resource base. More importantly, increasing connections with well-networked actors ensures access to the right information, know-how, markets and customers, and capital. The impact of such advantages drives business development through multiplier effects. Berrou and Combarous (2011), and Kuépié *et al.* (2015) clarifies further that expanding the size of network linkages is positively associated with increase in business productivity.

## **4.6 Conclusion and Policy Implications**

### **4.6.1 Conclusion**

The objective of this paper was to examine the business developments in Ilula and Madizini EUCs and expound how the existing nature of business networks can be a potential to realise EUC business developments amid informal and resource constrained rural businesses. Through profiling EUC businesses, Ilula and Madizini EUCs were understood to be central or focal points of doing business in the rural regions of Iringa and Morogoro. This was proved by increasing proportion of businesses buying and selling goods and services in the EUCs and from the surrounding rural villages, regional and international markets. In both EUCs, a rapid increase in the number of businesses between 2010 and 2016 including development of more specialised lines of businesses reflect increasing business potentials. This coupled with fast growing population mainly through migration in Ilula and Madizini EUCs might suggest a promising business future. Majority of businesses were seen to be within a low barrier to entry businesses such as shops, trading, and vending of food and non-food products. As majority of businesses were small and operated in the informal sector with constrained access to capital, product, and information, social networks were pivotal in their development. Social networks were pivotal to all businesses as the system of social relations (friendship and business ties) provided access to resources across all businesses in and outside the EUC.

The analysis presented in this manuscript reveals that the structure of business networks in Ilula and Madizini EUCs is built around the major crop sub-sector and crop value chain dynamics. In Ilula, tomato is a dominant cash crop and has for some time shaped the network of business exchanges in the EUC. In Madizini, paddy/rice has emerged as a major crop and actors are investing in the paddy value chain activities like trading, processing, and warehousing.

In an analysis of embeddedness, the SNA revealed that large part of EUCs product and information exchanges revolved around few businesses involved in shops and trading of tomatoes and paddy/rice, and wholesale-retail trading. Though interconnectivity to other categories of businesses was deep in Ilula, access to market information, capital, and innovation in business performance cannot be enhanced by few well connected businesses. Brokerage roles of linking businesses horizontally within EUC and vertically beyond the EUC were also dominated by businesses trading crops and wholesale-retail business in both product and information exchanges. Institutions/organisations which were presumed to assist in relaying and supporting resource flow across businesses played a limited role.

While institutions (as organisations and rules of the game) did not play a central networking role to support business developments, social networks are seen to be the best tool to acquire resources that majority small, informal, and less linked businesses are short of. Thus, capitalising on networks with businesses that are horizontally and vertically well linked into product and information flow across the EUCs and rural areas, neighbouring district and regions, and international markets is key. This information is important in supporting rural business development through gaining more inputs, new markets information and growing business social and financial capital. Empirical analysis justifies this conclusion because the development of businesses in the EUCs via increasing their stock and sales turnover was significantly influenced by increasing network linkages.

The study generally concludes that businesses in the EUCs are more engaged into shops, trading, and vending of food and non-food products majority of whom are small and operating in informal sector. Large businesses mostly involved in wholesale trading are at the centre of EUC business networks with crops value chains being the stem of EUC

business developments given the strategic opportunities created along the chain. Thus, while EUCs provide an avenue for business development in the rural global south, majority of small and informal businesses rely on social networks especially large businesses to gain access to information, capital, and markets.

#### **4.6.2 Policy implications**

The observed rapid development of businesses in the EUCs sheds light on the importance of EUCs in rural economic development via investment in specialised businesses. This calls for government and private sector action in prioritising EUCs as trade and value addition centres that will benefit majority rural populations.

A major salient observation that underlies building of vibrant networks of businesses are the major crops grown in and around the EUCs. Thus, a dedicated public and private sector support on the development of crop value chains around EUCs is called for to support subsequent business and rural development initiatives

#### **4.7 Acknowledgements**

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#### 4.8 Disclosure statement

No potential conflict of interest was reported by the authors.

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**CHAPTER FIVE**  
**MANUSCRIPT TWO**

**5.0 SOCIAL NETWORKS AND BUSINESS INVESTMENT IN EMERGING  
URBAN CENTRES IN RURAL TANZANIA**

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**Abstract**

Business investments continue to be a key policy focus to support economic diversification and employment generation in rural region of the global South. As the share of agriculture employment declines, small towns in the rural areas provide a gateway for non-farm activities and business investment. Using a sample of 459 and 296 business-owners from Ilula and Madizini emerging urban centres (EUCs) in Tanzania, the study found that social networks significantly influenced business investment decisions. However, the influence of social networks on business investment decisions depended on experience, skills, and financial capital endowment. Social networks of family, friendship and a business acquaintance were instrumental in informing what business to venture in. Businesses dealing with- and connected to main crop value chain like tomato and paddy trading, wholesale, retail, and transportation relied more on social networks to make decisions, unlike processing/manufacturing and construction, which demanded more capital. Conclusively, social networks within the EUCs were vital for informing business

decisions and accessing resources among businesses in the rural areas of Tanzania. The relevance of networks arises from lacking formal institutional arrangements to guide business investment amid large rural informal sectors.

**Key words:** Emerging urban centres, Business investment, social networks

## 5.1 Introduction

Agriculture has for a long time been a major employer of the growing rural population (Haggblade *et al.*, 2007). However, in the current economic transformation era, investment in other non-farm sectors like services and manufacturing has been a growing means of income generation (Haggblade *et al.*, 2010). Increasing sectoral linkages between the primary sector of agriculture, manufacturing, services and commerce present opportunities to the resource-constrained rural poor to find employment in other service-based investments, like food, restaurants and transportation (Haggblade *et al.*, 2010; Reardon *et al.*, 1994). However, decisions to exploit these business opportunities are influenced by several factors whose configuration partly depends on individuals' resource endowments and partly on institutional environment (Jayne *et al.*, 2018). Access to capital, credit, inputs, stock, markets, and information are critical success factors for business investment. However, many rural populations have poor access to these resources because of their low asset base and skills. While urban sections of small towns termed by Lazaro *et al.* (2017) as Emerging Urban Centres (EUC) are observed to attract and accommodate investments, Kristiansen (2003) acknowledged that social networks play a central role in situations of constrained access to capital and information among the growing numbers of unemployed rural population.

The role of social networks in relaying information and resources to businesses has been emphasized by several studies (Huggins, 2000; Wailerdsak and Siengthai, 2017). However, studies on how social networks influence actors' decisions regarding business investments given the opportunities available around small towns in the rural spaces are scarce. Studies within the framework of business investment and social networks have largely used a relational framework of social networks to examine how business investment decisions are framed and affected (Jung and Lake, 2011; Mabadu, 2014). This mainly takes place through social capital accumulated via interactions with family, relatives and friends, also called strong ties, and relations with business friends, acquaintances and institutions, referred to as weak ties (Lin, 2001b). Lin (2001b) and Lai *et al.* (2015) identify information, influence, social credentials, and reinforcement as key forms of social capital that influence individual decisions, quite apart from endowments of economic and human capital.

This manuscript perceives business owners' investment decisions to be guided by the proximate social environments they relate to, like family, friends, other businesses, social groups, and other casual acquaintances. The aim is therefore to examine the role played by social networks in influencing EUC business owner's investment decisions. To achieve this objective, the manuscript first assesses the present structure of the business networks in the EUC using social network measures like degree centrality and business geographical information. Furthermore, using network information on strong and weak ties, the manuscript examines factors that have encouraged or discouraged business owners from relying on their strong and weak ties in making investment decisions. The analysis concludes by examining the effect of social networks in influencing choice of a business investment for EUC business owners. These are tested using the following hypotheses

es: H1: individual characteristics of business owners and business-specific features have no effect on the use of strong and weak social ties to make business investment decisions; and H2: strong ties of family and friendship networks, and weak ties of business acquaintance networks and institutions characteristics do not significantly influence the choice of a business investment in the EUCs.

## **5.2 Literature Review**

This study hinged on the social network theory which is perceived as a system of interconnected dyadic relationships with nodes and ties of relations (Johannisson, 2000). The nodes represent the actors, which here are businesses, while the ties represent connections between businesses, through which resource and information flow. The Social Network Analysis (SNA) framework used in this study as a mathematical model of analysing networks, treats business owners as social agents whose operations depend on and affect the surrounding social structure. Thus, social, and business-specific networks are intertwined and are perceived as part of enterprise development. As a component of social network theory, social capital theory (Lin, 2001a) is implicitly employed to account for the value vested in social agents that affect exchanges between businesses. Besides having social contacts, business networks were constructed to represent business and trade relations between actors in Ilula and Madizini EUCs in Tanzania.

According to Brüderl and Preisendörfer (1998), doing business is known to be a social role that is embedded in a society's social, political, and cultural contexts. Therefore, the operations and decisions of social actors (business investors) and their structural position in the social fabric affect the set-up, opportunities, and workings of an enterprise in terms of the information, resources and support it acquires. This argument is supported by the classic view that economic actions are structured and affected by the social relations in

which they are embedded (Granovetter, 1983 and 2005). Thus, the processes of business investment and development are largely immersed in the investor's existing social networks. According to Dyer *et al.* (2017), business men and women tend to be uncertain with respect to what to invest in and where to invest because they normally have imperfect market information. To reduce the uncertainty and risks associated with such decisions, agents tend to rely on their social networks as a means to gain access to critical resources and business information (Hoang and Antoncic, 2003). Furthermore, social networks may assist businesses in addressing the hurdles of newness and its associated challenges when exploring markets and engaging with new agents (Soetanto *et al.*, 2018). According to Klyver and Schøtt (2011) business owners use resources from social network to strike a balance between demand and supply variables. On the demand side, business owners use social networks to establish connections to markets, while on the supply side these networks are used to identify new suppliers of critical resources, including business capital, and to strengthen their business relationships with those they trust and trade with (Aldrich and Catherine, 1986).

In the literature (Berrou and Combarous, 2011; Lai *et al.*, 2015), the relationship between business investments and social networks is largely built around social capital theory. The theory interprets social relations as investments with expected returns (Lin, 1999). This is because exchange (the process of doing business) is largely built around social actors whose attachments and emotions tend to affect economic choices. Social capital theory within the realm of social networks revolves around the studies of Granovetter (1973) and Burt (1992). Granovetter's (1973) 'strength of weak ties' theory (SWT) claims that strong ties have less ability to provide novel business information compared to weak ties. This is because, unlike weak ties, stronger ties tend to exist in the same social world (creating transitivity in relations) and tend to possess similar

characteristics (homophily), thus creating few opportunities for information to be differentiated.

According to Burt's (1992) Structural Hole Theory of social capital (SHT) the existence of weak connections between groups creates holes in the social structure where actors linking different groups act as a bridge giving an actor whose network spans the bridge a competitive advantage. The relationship between groups provides additive rather than overlapping network benefits. The knowledge that SWT and SHT bring to the understanding of business investment is that bridging ties are instrumental in acquiring novel information to inform individual business investment choices. However, better endowment of human capital in terms of skills and experience and financial capital or ability alone cannot make one's business competitive because social capital enables an individual to access resources outside his or her human and financial capital capabilities. In effect, businesses acquire such resources through both weak ties and strong ties. Thus, an examination of the influence of weak and strong ties on shaping business investment decisions and choice of business around EUCs is imperative. It is more important to rural areas of the global south specifically Tanzania where informal sector is large and information on capital and markets to inform decisions is curtailed.

The choice of a business investment in this study is also guided by resource endowment theory which recognises human capital (like financial and natural resource) as an important but conditional determinant of firm performance (Teodoro and Switzer, 2016). This is built on the case that improvement in human capital in form of education or skills boost firm performance and decision making as firm owners can employ their knowledge to access or operate with least cost and obtain maximum possible outcomes. Resource endowment theory is employed in this study as improvement on one's human capital, has

a role to play in influencing choices of business investment particularly in rural setting where level of skilled labour demand and specialized investment is mushrooming.

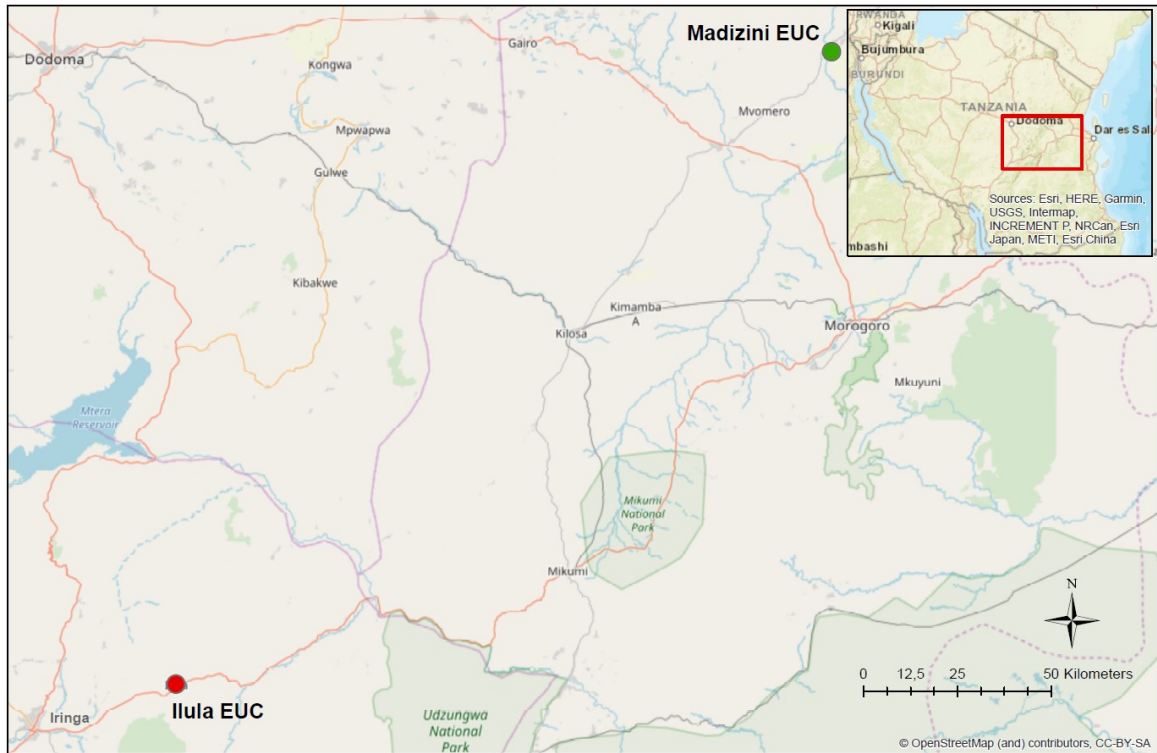
The rest of the manuscript is organised as follows. First, the following section outlines the methodology used, including the study design, the means of data collection, the study sites and the analytical methods used. Second is the results section, which presents the results for the spatial distribution of businesses in both EUCs and the impact of social networks on business investment choices. Third is the discussion section which narrate the implications of the findings in relation to key lessons from the literature. The focus is on the spatial structure of business investments and how social networks influence business choices in both EUCs. The last is the conclusion and recommendation section which provides summary of the study findings and its recommendations.

### **5.3 Methodology**

#### **5.3.1 Study design and study sites**

The study adopted a cross sectional research design and it was limited to business-to-business networks and to business owners available within the map guided by the boundaries of the two EUCs. A custom area for each EUC was marked enclosing an area with a high population and settlement in the township. This is because most of these small towns are also made up of vast areas of agricultural land with dispersed populations and settlements that do not mimic the urban structure. Ilula and Madizini (Figure 5.1) were purposefully selected to represent many other EUCs which are registering fast growth in business investment in the rural areas (Lazaro *et al.*, 2019). Geographically, the EUCs are in the rural regions of Iringa and Morogoro. Ilula is located 50 kilometres East of Iringa Regional Offices, while Madizini is located 92 kilometres North of Morogoro Regional Offices. Ilula EUC is located along the Morogoro–Mbeya highway and is a marketing hub

for tomatoes that are cultivated in the township. Madizini is a trade centre for Mtibwa Sugar Estate workers, as well as for the residents of surrounding villages, and is approximately 1.6 kilometres East of the Dodoma–Korogwe road.



**Figure 5.1: Map of Tanzania showing Ilula and Madizini EUCs**

**Source: Torben Birch-Thomsen**

Satellite and Google maps were used to delineate the geographical area of both EUCs with and without high concentration of physical infrastructure, like residential and business buildings or marketplaces. The sub-villages surveyed in Ilula EUC were Ilula Mwaya, Mtua, Sokoni, Matalawe, Igunga, Itunda/Isele, Ding'inayo/Ilala, Masukanzi, Itabali, Nyakilomo, Madizini, and Majengo Mapya, while Madizini A, Barabarani, Mpingoni, Kwa Kibwaite, Mji Mpya, Mpingoni, and KKKKT were the sub-villages surveyed in Madizini EUC. The sub-villages were selected using sentinel map of settlement and built-up areas to represent the area of EUC in Ilula and Madizini that has high population settlements and economic activities.

### 5.3.2 Data

Data were collected in 2017 through a business survey involving the use of a structured questionnaire with which businesses with and without a physical location in the two EUCs were interviewed. The aim was to solicit basic information on the businesses in the EUCs, covering both business and individual characteristics, and to identify networks which they relied on to make their investment decisions. Data on product networks were analysed to determine the structure of the networks in relation to their respective degrees of connectivity and location. Data on social network ties (strong and weak ties) were used to make inferences about their effects on investment and business decisions. Survey data was processed and analysed using SPSS and STATA software, while social network information was processed and analysed using Gephi software (Bastian *et al.*, 2009). The NVIVO 12 was used to organise and thematically analyse qualitative information.

### 5.3.3 Sampling

Businesses were selected randomly within each of the predetermined categories of businesses and geocoded based on their location. Business categories were formulated based on data for registered businesses obtained from the district trade officers and the Tanzania Revenue Authority (TRA). The business categories were services, which included businesses such as restaurants and hotels; shops and trading, which included businesses like retail and wholesale shops, crop-traders and brokers; workshops, which included businesses like repair shops; manufacturing and processing, which included businesses like tailoring, tomato- and paddy-processing, brick-making and manufacture and carpentry; and transportation, which comprised trucking, *bodaboda* or motorcycles and tricycle businesses. Guided by their spatiality, businesses were asked to name at most eight people with whom they had frequently traded and shared information in 2016. Steered by Google maps, the survey was undertaken so as to cover businesses of all kinds

in the spatially- marked areas with the aim of uncovering the existing networks of product exchange and social contact. Based on a minimum sample criterion for non-finite population by Louangrath (2014), a total of 459 businesses in Ilula and 296 business in Madizini were surveyed.

**5.3.4 Analytical framework**

The network of businesses was plotted on a Google Earth map and graphed in Geolayout format, the size of each node being represented by its degree centrality and a colour representing its business category. The factors that were hypothesized as influencing investment and business decisions were analysed descriptively. A bivariate Probit model was estimated in order to understand the factors that influenced the role of social networks on business investment decisions, or what affected the influence of social networks in influencing business owner’s investment decisions. The probit model was used because the dependent variables had binary outcomes. In the form of latent variable, the probit model can be written as:

$$Y^i = X' \beta + \varepsilon \dots\dots\dots (i)$$

Where  $Y^i$  represents the latent variable that lies behind having relied on social network in making investment decisions, and  $\varepsilon$  is the error term,  $\beta_i$  represent the vector of unknown parameters to be estimated, and  $X$  represent the vector of explanatory variables which affect the outcome variable. It can also be written as:

$$Y_{ij} = \alpha + \sum X_1 \beta + \varepsilon \dots\dots\dots (ii)$$

Where  $Y_{ij}$  stand for binary outcome variable, which is having social network influence in investing on the current business.  $Y^i = 0$  if  $Y^i$  is less than 0, and  $Y^i = 1$  when  $Y^i$  is greater than 0 as shown below:

$$Y_{ij} = \begin{cases} 1 & \text{if } Y^i > 0 \\ 0 & \text{otherwise} \end{cases} \dots\dots\dots (iii)$$

The dependent variable ( $Y$ ) is defined as  $Y_i=1$  if the business owner decision to invest in the current business was supported by his social networks, that is parents, relatives and friends, business friends, organizations, or social groups, and as  $Y_i=0$  otherwise. The regressors that discriminate the choices are human capital variables such as age and educational level (years of schooling), household size calculated as the number of people under the same roof, sub-sector- and industry-specific experience in years, and a dummy for having operated a business before. Other control variables were a migration dummy and dummy variables for the business categories of food-crop trading, wholesale and retail trading, manufacturing and processing, transportation, with services as a reference category. To obtain the actual effect of the regressors, the marginal effects at their mean were estimated and significant regressors interpreted.

Logit and probit models are the best known specifications used to model binary choices, as they provide efficient estimators for multi-attribute equations compared to ordinary least squares (OLS) regression (Gensch and Recker, 1976). Logit and probit models are identical and produce similar estimates of the underlying latent variable. The difference is that the logit model uses a cumulative distribution function of a standard logistic random variable, while the probit model uses a standard normal cumulative distribution function (CDF).

A multinomial logit model (MNL) of choice was estimated to understand the role played by strong and weak social network ties in influencing choices of a business investment in the EUCs. Trading food crops and operating general wholesale and retail trading, manufacturing, processing and transportation were selected as choice variables, with services used as a base category. Bonding variables like the influences of parents, relatives, and friends, and bridging ties like business friends and organisations' influences



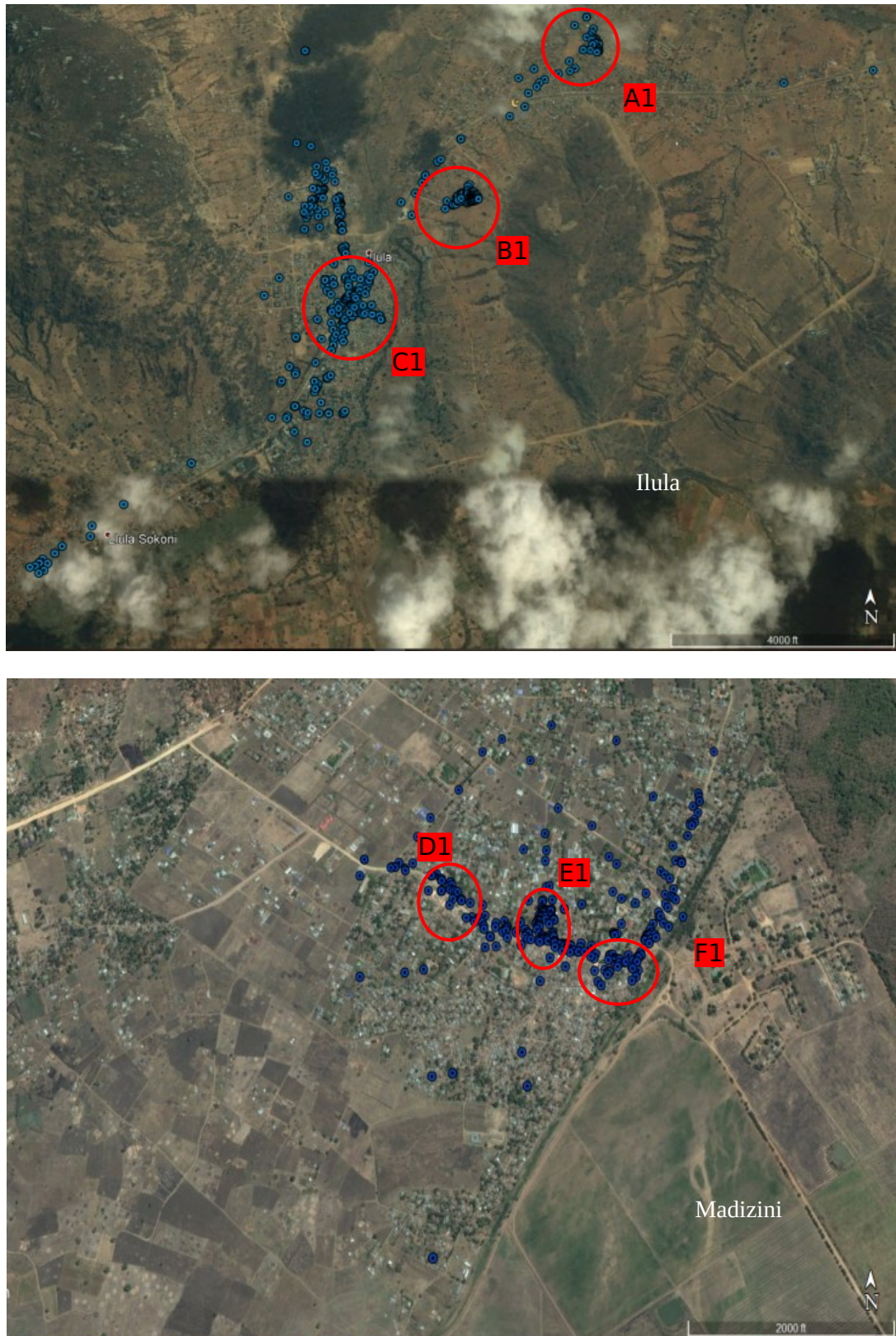
Where  $P_i(k:A_i)$  is the probability that the  $i^{\text{th}}$  business owner will prefer the  $k^{\text{th}}$  business category from a set of all available business categories/alternatives.  $V_i^k$  and  $V_i^l$  are the deterministic components.

## 5.4 Results

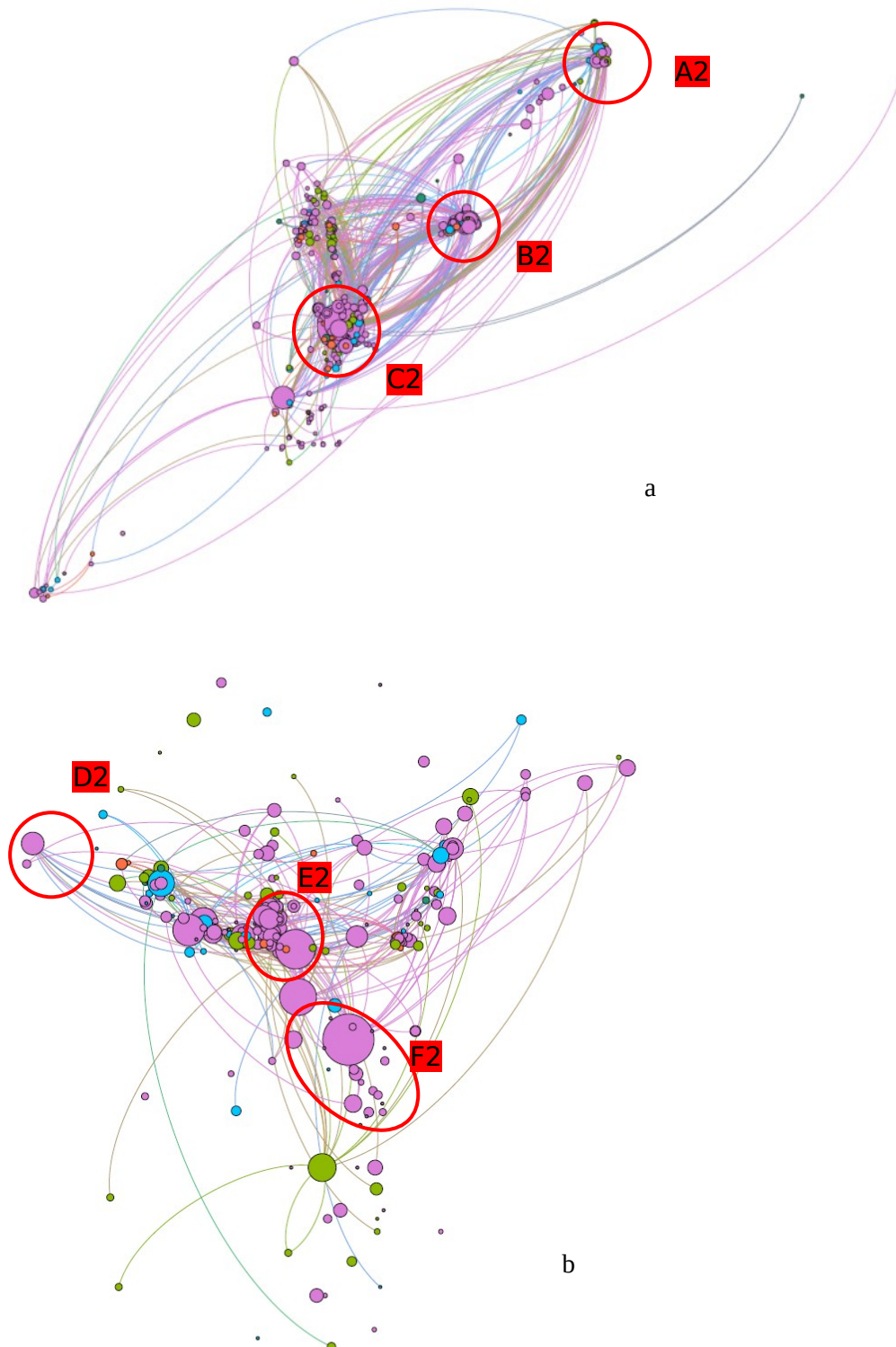
### 5.4.1 Distribution of businesses in the EUCs

The analysis of the structure of business networks using geographical data in Ilula and Madizini EUCs (Figure 5.2 and 5.3) showed that business networks were dominated by wholesale and retail trade and the trade in food crops (high degree centrality). Connections of network ties also gravitated towards the centre of the two EUCs reflecting the central business districts (CBD) of the EUCs. Most of these businesses were spatially distributed along the major transport routes, while other small or less connected businesses were unevenly distributed across the EUC (Figure 5.2). Roads provided ease to access products and customers both within and outside the EUCs. The red circles show business hotspots that align the Google map in Figure 1 to the geo-layout network map in Figure 5.2. Another clustering factor was the location aspect, like proximity to market centres (red circles B1 and E1) and a bus stand where more specific kinds of businesses were located. With regard to tomato traders, the concentration was high in the TASAF market (red circles B1 and B2) and the Mtua (red circles C1 and C2) and Itunda/Isele (red circles A1 and A2) bus stands at Ilula (Figures 5.1 and 5.2). In Madizini food-crop markets (red circles E1 and E2) and old bus terminals (red circles F1 and F2) were areas with distinct clusters of businesses (Figures 5.1 and 5.2). The new bus terminal in Madizini (red circles D1 and D2) and the tomato market in Ilula are hotspots expected to attract more business investments and to support further transformation of the EUC. As

reported by the Ilula TEO, the installation of electricity along the highway in Ilula was also a key determinant of the observed pattern of settlements and businesses.



**Figure 5.2: Google Earth aerial shot of the distribution of the businesses surveyed in Ilula and Madizini**



**Figure 5.3: Ilula (a) and Madizini (b) business network graphs plotted using Geo Layout with degree represented by node size and business category by colour**

#### **5.4.2 Business investment and the role of social networks**

While recognising the role of social networks in supporting investments in the EUCs, reliance on and the use of these networks as pools of information and resources were influenced by several inherent personal and business-specific characteristics. As indicated in Table 5.1, the marginal effects at the mean of covariates for a probit model revealed that, in Ilula, a percentage increase in years of education and start-up capital reduced the likelihood of strong ties (relatives' and friends' networks) to influence investment decisions by 14.7 and 4 percent respectively. In the same way, the increase in category-specific years of business experience and having operated a business before significantly reduced the likelihood of the strong ties to influence investment decisions by 11.7 and 15.4 % respectively. Similarly, a percentage increase in category-specific business experience and a discrete change in or having operated a business before reduced the likelihood of parents influencing investment decisions by 5 and 16.2 % respectively. Having operated a business before and increase in one's category-specific business experience among Madizini business owners was also observed to reduce the probability that one's business investment decisions would be influenced by strong and weak ties by 7.5 and 8 percent respectively. Conversely, having operated a business in trading food crops, wholesale and retail shop, and a transportation business increased the probability that one would source information from (relatives and friends) by 22.3, 20, and 16.5 % respectively. In Madizini, the importance or influence of strong and weak ties increased with an increase in business owners' education, which underscores the view that improvements to one's skill level increase one's ability to harness resources from social networks and enhances the capacity to make more informed decisions.

**Table 5.1: Marginal effects of a probit model for factors that influence the probability of seeking support from strong and weak ties**

Variables	Ilula				Madizini			
	Strong ties		Weak ties		Strong ties		Weak ties	
	Parents	Relatives/ friends	Business friends	Organis ation	Parents	Relatives/ friends	Business friends	Organis ation
Log Age	-0.097 (-0.760)	0.169 (1.310)	0.219 (1.450)	-0.016 (-0.420)	-0.059 (-0.660)	-0.120 (-1.190)	0.046 (0.350)	-0.001 (-0.010)
Log Household size	-0.009 (-0.200)	-0.063 (-1.210)	-0.077 (-1.290)	-0.005 (-0.270)	-0.031 (-0.870)	-0.055 (-1.390)	-0.019 (-0.350)	-0.016 (-0.970)
Log Education	-0.047 (-0.610)	-0.147* (-1.850)	-0.049 (-0.580)	0.006 (0.390)	0.203** (2.630)	-0.118 (-1.450)	0.221* (1.830)	0.023 (0.690)
Log Startup capital	-0.012 (-0.830)	-0.040*** (-2.720)	-0.010 (-0.600)	-0.007 (-1.540)	-0.009 (-0.750)	0.011 (0.810)	0.026 (1.310)	0.008 (1.290)
Log Experience	-0.055* (-1.650)	-0.117*** (-3.430)	-0.017 (-0.420)	0.004 (0.430)	0.002 (0.080)	-0.002 (-0.090)	-0.079** (-2.290)	0.008 (0.660)
Had business	-0.162*** (-3.740)	-0.154*** (-3.540)	-0.089 (-1.460)	-0.005 (-0.300)	0.040 (0.870)	-0.075* (-1.730)	-0.020 (-0.310)	-0.006 (-0.330)
Food-crop trading	0.057 (0.890)	0.223*** (4.080)	0.383*** (5.100)		0.105 (1.500)	0.012 (0.180)	0.062 (0.620)	
Wholesale and retail trading	0.109 (1.480)	0.198*** (3.160)	0.359*** (4.310)		0.050 (1.110)	0.033 (0.580)	0.109 (1.330)	
Manufacturing and processing	-0.060 (-0.750)	-0.036 (-0.660)	0.075 (0.700)		0.026 (0.410)	0.041 (0.480)	-0.063 (-0.640)	
Transport	0.149 (1.560)	0.165** (1.960)	0.428*** (4.310)		-0.007 (-0.110)		0.004 (0.030)	
Migration	0.065 (1.410)	0.011 (0.230)	-0.089 (-1.590)	0.005 (0.310)	-0.008 (-0.180)	0.016 (0.290)	-0.044 (-0.610)	0.051 (1.070)
Number of cases	386	386	386	244	216	207	216	144

\* Denotes that the means are significantly different at 10%, \*\* at 5%, and \*\*\* at 1%. Z values in parentheses.

### 5.4.3 Influence of social networks on the choice of business investment

The marginal effect of the maximum likelihood estimates of a multinomial logit model were extracted to identify factors that influenced choices of a business type among business owners in the two EUCs. The businesses selected were grouped into five subcategories: services (taken as a base group), agricultural and food-crop trading, wholesale and retail trading, manufacturing and processing, and transportation businesses.

The results presented in Table 5.2 show that both strong and weak ties had a role to play in influencing choices of business investments in the two EUCs. In Ilula, businesses that received support from parents or other relatives and friendship networks were more likely to decide to invest in transportation and general wholesale and retail businesses by 5.4 and 14.2 percentage points respectively. In Madizini, receiving support from one's parents increased the likelihood of one choosing to invest in food crops trading by 23 % but reduced the likelihood of investing in transportation by 5.4 %.

Weak ties, consisting specifically of business friends and organisations, also played a significant role in influencing investments in businesses in the two EUCs. The results presented in Table 5.2 show that having firm business friendship networks increased the likelihood of choosing a food-crop trading business and transportation in Ilula EUC by 9.7 and 5 percentage points respectively. However, this support reduced the likelihood of a manufacturing and processing business at Ilula EUC being chosen by 6 percent. In Madizini, owners who received business support from friends were more likely to invest in general wholesale and retail trading by 13.4 %. Business acquaintances are known to enhance owners' access to crucial information regarding markets and the sources of products. In an interview with the leader of tomato traders in Ilula, he said that:

*“...to better understand the market structure and obtain networks of information linking with people within the business is inevitable. You cannot come from Dar es Salaam and choose to become a tomato broker or trader without learning and linking with the local people and present traders. Because their networks are important for you to find products, find trusted transporters and trusted handlers who will take care of your goods in the destined market. This will help you in the future where you could be absent, but you can buy and transport your goods based on the trust vested in the network...”* interview done on March 13<sup>th</sup>, 2017, in Ilula.

Being a member of an organisation or social group and an association was observed to increase the likelihood of one choosing general wholesale and retail shops by 90 % and trading food crops by 114.2 percentage points in Ilula. Similarly, membership in such groups and associations was observed to increase the likelihood of choosing general wholesale and retail trading by 309.1 percentage points for business owners in Madizini. This could be attributed to increased frequencies of interaction and exchanges of business information among members of these groups and organizations, along with their joint efforts to address common concerns. Conversely, membership in such organizations reduced the likelihood of investing in services, manufacturing or transportation by 98, 47.2 and 58.4 percentage points respectively for business owners in Ilula. Similarly, being in an organization reduced the likelihood of an individual choosing services, food-crop trading, manufacturing and transportation in Madizini by 109.4, 109, 69 and 22 percentage points respectively. This is because of the lacking institutional environment governing business investment in EUCs.

An analysis of other control factors revealed that a percentage increase in an individual's age was observed to increase his or her likelihood to invest in food-crop trading or manufacturing by 23.1 and 14.5 percentage points among business owners in Ilula respectively. However, it reduced the likelihood of investing in a transportation business by 58 percentage points. A similar situation was observed when household size was increased by one percent, which led to a decrease in the likelihood of choosing transportation by 4 percentage points. Investment in transportation and in general wholesale and retail trading seemed to require more start-up capital in both Ilula and Madizini EUCs. A percentage increase in the size of one's start-up capital increased the likelihood of venturing into transportation and general wholesale and retail business in Ilula by 6.2 and 3.3 percentage points, while in Madizini it increased the likelihood by 1.6

and 7 percentage points respectively. This could be explained by high initial investment required to start these businesses as compared to starting a service business like a restaurant or food-crop trading, which became more unlikely as one's capital increased. As indicated in Table 5.2, a percentage increase in the amount of start-up capital was observed to reduce the likelihood of deciding to invest in services and food crops in Ilula by 3.5 and 7.1 percentage points, while it increased the same likelihood in Madizini by 3.3 and 4.4 percentage points respectively. Being a migrant appeared to increase the likelihood of choosing to invest in transportation business in Madizini by 4.7 percentage points.

Having received training increased the likelihood of choosing to invest in manufacturing and processing or food-crop trading in Madizini and Ilula by 18.1 and 15.1 percentage points respectively. Conversely receiving training decreased the likelihood of choosing to invest in food-crop trading in Madizini and service businesses in Ilula by 16.2 and 9.6 percentage points. Similar findings were observed when the business owner saw ready market opportunities within the EUC, where it reduced the likelihood of choosing to trade food crops in Ilula by 9.5 percentage points; investing in service businesses in Madizini and Ilula by 10.4 and 10.8 percentage points respectively; and investing in manufacturing and processing in Ilula by 5.3 percentage points. Training was therefore observed to scale up investment in business opportunities which required technical practise unlike crop trading and service like food vending which relied only on experience. A decline in farm harvests was observed to be a disincentive for investing in transportation in Madizini, as the likelihood of an investment declined by 34.6 percentage points.

**Table 5.2: Marginal effects of a multinomial logit model for factors that influenced the choice of business**

	Ilula					Madizini				
	Service	Food crops trading	General wholesale and retail	Manufacturing and processing	Transportation	Service	Food crops trading	General wholesale and retail	Manufacturing and processing	Transportation
Log age	0.076 (0.790)	0.231** (1.980)	0.127 (1.030)	0.145* (1.810)	-0.579*** (-8.440)	0.043 (0.340)	0.054 (0.450)	-0.064 (-0.470)	0.077 (0.850)	-0.111 (-1.570)
Log household size	-0.041 (-1.060)	0.126** (2.160)	-0.019 (-0.320)	-0.026 (-0.710)	-0.040* (-1.720)	-0.060 (-1.210)	0.023 (0.430)	0.016 (0.250)	0.036 (0.840)	-0.015 (-0.690)
Log education	-0.011 (-0.210)	0.017 (0.250)	-0.056 (-0.910)	0.033 (0.920)	0.016 (0.360)	0.156* (1.770)	-0.200** (-1.970)	0.041 (0.300)	-0.030 (-0.400)	0.032 (0.940)
Log start-up capital	-0.035*** (-3.930)	-0.071*** (-5.710)	0.033*** (2.810)	0.011 (1.410)	0.062*** (6.780)	-0.033** (-2.070)	-0.044*** (-3.060)	0.070*** (3.800)	-0.010 (-0.690)	0.016** (2.240)
Log experience	-0.015 (-0.520)	0.020 (0.590)	0.003 (0.110)	-0.034 (-1.520)	0.026 (1.330)	-0.038 (-1.250)	0.031 (1.110)	0.010 (0.280)	0.007 (0.340)	-0.010 (-0.700)
Had business history	-0.046 (-1.210)	0.054 (1.050)	0.009 (0.190)	-0.015 (-0.460)	-0.003 (-0.080)	-0.004 (-0.060)	-0.078 (-1.440)	0.091 (1.290)	0.015 (0.320)	-0.024 (-0.520)
Migration	0.010 (0.280)	-0.069 (-1.440)	0.052 (1.100)	-0.028 (-1.070)	0.035 (1.480)	-0.058 (-1.000)	0.061 (0.960)	-0.045 (-0.580)	-0.005 (-0.100)	0.047* (1.770)
Parents' influence	-0.027 (-0.600)	0.001 (0.020)	0.022 (0.390)	-0.050 (-1.100)	0.054* (1.890)	-0.073 (-0.760)	0.229*** (3.190)	-0.100 (-0.900)	-0.002 (-0.030)	-0.054* (-1.760)
Relatives/ friends	-0.089 (-1.560)	0.059 (0.890)	0.142** (2.360)	-0.105 (-1.450)	-0.007 (-0.190)	-0.096 (-0.900)	-0.020 (-0.280)	0.138 (1.440)	-0.034 (-0.450)	0.013 (0.450)
Business friends	-0.020 (-0.660)	0.097** (2.350)	-0.068 (-1.600)	-0.059* (-1.950)	0.050* (1.890)	-0.039 (-0.600)	-0.006 (-0.100)	0.134* (1.720)	-0.076 (-1.290)	-0.013 (-0.390)
Organisation	-0.983*** (-6.890)	1.140*** (7.610)	0.899*** (6.360)	-0.472*** (-4.200)	-0.584*** (-5.380)	-1.094*** (-5.120)	-1.089*** (-5.640)	3.091*** (13.310)	-0.690*** (-4.020)	-0.218** (-2.310)
Business Opportunities	-0.108*** (-2.940)	0.148** (2.530)	-0.003 (-0.060)	-0.053* (-1.930)	0.016 (0.490)	0.045 (0.640)	-0.026 (-0.380)	0.031 (0.350)	-0.004 (-0.090)	-0.046 (-1.370)
Poor farm harvest	-0.155 (-1.140)	0.170 (1.440)	0.028 (0.270)	-0.067 (-0.990)	0.025 (0.410)	0.133 (1.390)	0.057 (0.580)	0.112 (0.760)	0.043 (0.540)	-0.346*** (-2.810)
Income diversification	-0.096** (-2.530)	0.085* (1.860)	0.063 (1.470)	-0.031 (-1.000)	-0.022 (-0.780)	-0.029 (-0.530)	0.006 (0.120)	-0.043 (-0.590)	0.040 (0.750)	0.027 (0.740)
Had training	-0.047 (-0.730)	0.151** (1.980)	-0.154 (-1.420)	0.033 (0.680)	0.017 (0.510)	0.047 (0.780)	-0.162* (-1.840)	-0.104 (-1.190)	0.181*** (4.180)	0.038 (1.280)
Ready market	0.023 (0.650)	-0.095* (-1.900)	0.030 (0.63)	0.040 (1.580)	0.002 (0.060)	-0.104** (-2.100)	0.082* (1.650)	0.037 (0.540)	0.007 (0.160)	-0.022 (-0.480)

#### 5.4.4 Sources of capital

Level of capital during start-up was identified as a significant determinant in choice of business. Thus, it was crucial to understand the major sources of capital for businesses in the two EUCs. Table 5.3 shows that more than 78 % of businesses in Ilula and 63 % in Madizini obtained capital from personal savings earned from farm proceeds, savings from other projects and wages from casual employment. Proceeds from farms accounted for 50 and 34.5 % of start-up capital for businesses involved in food-crop trading and the wholesale-retail business in Madizini and 29 % of food crops traders in Ilula. A majority of businesses were unregistered (that is informal businesses) and hence sourcing capital from formal lending institutions was not a possibility. Instead, informal sources like family, friends, relatives, and business acquaintances were the preferred. Strong ties mainly support from parents (24 %) in Ilula as well as relatives (14.5%) and friends (15.6 %) in Madizini, were the preferred sources of start-up capital for business owners in transportation, services, and manufacturing and processing. In an interview with the chairman of Madizini businesses, he said that:

*“...people who migrate to Madizini, most of them started with farming and reinvested the proceeds into a business and some started from nothing. Myself for instance I moved from Mwanza to Madizini with no capital at all, I however managed to link up with familiar people who helped me with capital goods on credit. Where after you sell them, you return some of the money and take more goods. In that process I managed to accumulate enough capital for my cereal trading business...”* interview done with Malik in April 2017, in Madizini.

As majority of businesses were in the informal sector, formal lending institutions like banks, Savings and Credit Cooperative (SACCOS) and Village Community Banking (VICOBA) were only accessed by wholesale as well as manufacturing and processing

businesses. This reflects the fact that the formal credit system is yet to impact EUC business development as only a small fraction of businesses have credit appeal. Hence, reemphasising the role of social networks in capital/credit access in the rural areas of the global south.

**Table 5.3: Sources of start-up capital among small businesses in the two EUCs in percentages**

Factors	Name of the EUC									
	Ilula (N 459)					Madizini (N 296)				
	Service	Food crops trading	Wholesale and retail trading	Manufacturing and processing	Transport	Services	Food crops trading	Wholesale and retail trading	Manufacturing and processing	Transport
Personal savings	91.7	92.9	92.7	92.3	78.3	74.5	63.5	74.1	62.5	64.7
From parents	6.7	6.5	1.8	3.8	24.6	5.5	7.7	10.1	6.3	5.9
From relatives	6.7	4.1	0.9	7.7	1.4	14.5	3.8	6.5	15.6	0.0
From friends	0.0	0.6	0.0	0.0	2.9	0.0	0.0	1.4	6.3	5.9
Loan from the bank	8.3	7.1	8.3	7.7	2.9	1.8	1.9	10.8	6.3	0.0
Loan from SACCOS	3.3	2.4	0.9	5.8	4.3	1.8	0.0	2.2	6.3	0.0
Loan from VICOBA	3.3	1.2	1.8	0.0	0.0	3.6	0.0	2.2	6.3	5.9
Farm proceeds	6.7	28.8	19.3	13.5	11.6	25.5	50.0	34.5	31.3	17.6
Formal Employment	0.0	2.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
From business	5.0	1.2	6.4	15.4	14.5	0.0	1.9	1.4	0.0	0.0
Retirement benefits/pension	0.0	0.0	0.0	1.9	0.0	0.0	0.0	0.0	0.0	0.0
Partnership	0.0	0.0	0.0	0.0	11.6	0.0	0.0	0.0	0.0	17.6
Non-monetary Loan/Loan of Goods (Mali Kauli)	0.0	0.0	0.0	0.0	0.0	1.8	0.0	0.0	0.0	0.0

## 5.5 Discussion

The analysis of the structure of product exchange networks plotted using location data in Ilula and Madizini revealed that businesses were spatially distributed by following the nature of the transportation routes. It also showed market centres and bus terminals to be core centres of current and future business investments and exchange. The pattern of distribution was yet unguided as businesses were established in an unordered structure

based on the proximate business opportunities. The random nature of business investment is also related to the yet to be established institutions and institutional arrangements to govern EUC business investment.

Social networks were revealed to largely influence decisions of business owners particularly in determining what and where to invest. However, the role that social networks played especially by strong ties (family and friends) in informing and coining investment decisions decreased as one improved his/her financial and human capital. This is because as capital base increase, the type, scale, and requirements of the business change. Similarly, skills gained through training and experience adds on the pool of requisites that strong ties cannot provide which is consistent with the resource endowment theory by Teodoro and Switzer (2016). This also conforms with the findings of Davidsson and Honig (2003), according to which a high endowment of human capital, among others factors like finance and experience are key resources in support of one's own investment decisions. Unlike the businesses surveyed in Ilula, the relevance of strong and weak ties improved with increases in business owners' education levels in Madizini. The reduced relevance of the social networks of business owners in Madizini could be attributed to the current nature of network connectivity, which is poor; thus, to validate investment choices, information from weak and strong ties is seen important.

The choice of specific business investment within Ilula and Madizini among the business owners surveyed were reported to be determined by their proximate social networks. Due to high level of informality of investment in crop trading, retail, and vending of food and non-food business which form majority of small businesses in the EUC relied on social networks in guiding business owner's investment decisions. Social network resources like

information, market networks and experience accrued from parents and other relatives and friendship networks were also crucial to navigate uncertain rural business environment. One of the key observations was that formal institutions/organisations and social groups appeared to discourage business investment choices particularly among those investing in services, manufacturing and processing, and transportation businesses. This could be due to lacking formal institutional arrangement to guide investment in the EUCs particularly for large/high capital investment like manufacturing. This is supported by North (1990) who identified institutions (both organisations and rules/regulations) to be crucial in reducing uncertainties in business networks. Thus, creating supportive institutional environment is pertinent especially in supporting current economic transformation.

Non-redundant information provided by business ties of friendship and acquaintance appeared to exert an influence on business owners' investment choices in food-crop trading and transportation in Ilula, and in wholesale and retail trading in Madizini. The role of business friendship network ties in Ilula could be accrued from effect of the tomato economy, where access to inputs, markets, and means of transportation largely relied on one's social network base, as shown in Nyaki *et al.* (2022). This also justifies the disincentive of the influence of business friends in respect of investment in manufacturing and processing, which could be outweighed by the high capital requirements for such investments.

Other factors that supported the investment drives in Ilula and Madizini EUCs were age, capital, household size, migration, demand for income diversification, existence of a ready market, low farm harvests and seasonality. Age and capital were key variables that inculcated experience and an ability to diversify to wholesale, transportation, and

manufacturing businesses. A negative effect of increases in capital on investments in food crops and service businesses reflect a shift in investments from service businesses like food and stall-vending to wholesale and transportation businesses in both EUCs. An incentive for this shift is created by increasing rates of population growth coupled with flourishing business opportunities from crop value chains that favour transportation, wholesale, and retail businesses. While capital appeared to structure business investments, businesses in both EUCs relied largely on agricultural proceeds as a key sources of start-up capital, with formal lending institutions like banks and SACCOS being avoided due to the lack of an asset base or collateral and the fear of bankruptcy. Strong ties in networks of parents, relatives and friends played a key role in supporting businesses with capital, largely provided in monetary form or as goods on credit popularly known as '*mali kauli*'. This underscores the importance of social networks in the underdeveloped world where role of formal financial institutions in supporting rural business investment is minimal and are yet to be realised. This is supported by Brühwiler (2014), Ogawa (2006), and Susomrith and Suseno (2017), all of whom pointed out that social capital vested in bonding social ties acts as security for most small businesses whose access to formal credit sources is limited. This is reflecting the potential of social networks around EUCs in supporting informal businesses who are alienated from the formal sources of finance.

## **5.6 Conclusion**

The two EUCs in Ilula and Madizini have been shown to play a central role in supporting business investments. The innate role of social networks in shaping business investments has been examined in this manuscript. While attempting to assess how social networks influence business investment, the study deduced that transportation routes and exchange hotspots are instrumental in shaping the spatial nature of EUC business networks.

The major deduction from the study was that social networks of strong and weak ties influenced the choices of a business investment in both EUCs. The importance of social network relations however varied depending on human capital endowment and business-specific characteristics. Moreover, formal institutional arrangements in form of the rules of the game and organisations were pertinent in aiding networks of EUC businesses, though its role is unrealised.

Establishing a business investment in the rural areas of the sub-Saharan Africa has been hard due to constrained access to information, capital, input/products, market, and infrastructure. These constraints are more detrimental to small businesses that are within the large informal sector thus making them less competitive. As a prerequisite to inform decisions, social networks have been the main gateway to obtain market information and capital to businesses particularly around EUC. To aid the speed of EUC business investment and networks, the study recommends strengthening of formal institutions both as rule of the game (rules and regulations) to guide EUC investment and as organisations both private and public to be primary. This will aid the growth of local networks of businesses and fast flow of market information and subsequent increase in business investment.

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No potential conflict of interest was reported by the authors.

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## CHAPTER SIX

### MANUSCRIPT THREE

#### 6.0 EMPLOYMENT CREATION THROUGH SOCIAL NETWORKS IN EMERGING URBAN CENTRES IN RURAL TANZANIA

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#### **Abstract**

Development of non-farm businesses in rural small towns is pivotal to increasing employment opportunities to resource curtailed rural population. This paper aims to examine how businesses use social networks to recruit labour and how the size of their social network influence employment creation around Emerging Urban Centres (EUCs). A business survey of 459 and 296 businesses in Ilula and Madizini EUCs revealed that strong and weak social network ties were equally instrumental in recruiting labour. Crop value chains (tomato in Ilula and paddy in Madizini) through multiplier effect generated a ripple of employment opportunities in businesses like wholesale, trading, manufacturing, and construction. Moreover, the likelihood of creating more employment opportunities in Madizini and Ilula was improved by increasing the size of business network and forging linkages with well-networked businesses. Thus, just as social networks are revealed to

play a major role in recruiting labour and employment opportunities around EUCs, they are also important in supporting future employment creation prospects. This is with particular importance in rural areas where informal sector is dominant. Employment creation efforts should be capitalised along major crop value chains which provide forward and backward linkage to wholesale, trading, manufacturing, and construction business subsectors.

**Key words:** Emerging Urban Centres, social networks, employment creation

## **6.1 Introduction**

The importance of businesses as employment creators has been widely documented (Fritsch, 2011; Henrekson and Johansson, 2010; Rotar *et al.*, 2019). In the developing world, small businesses account for the majority of the employment opportunities created. According to a recent ILO study (ILO, 2019), businesses account to an average of 70 % of all employment created globally, the highest proportions (90 %) being in low-income countries and 58 % among high-income countries. Most of these jobs are in agriculture, industry and manufacturing and the service sectors (Davis *et al.*, 1996; Fragkos and Paroussos, 2018; Wang and Chanda, 2018). In sub-Saharan Africa and in Tanzania about 44 % and 58% of working population are into non-farm business, respectively (Diao *et al.*, 2018; Nagler and Naude, 2014). About 42 % of the total employment is created in rural areas of sub-Saharan Africa (Nagler and Naude, 2017).

As economic transformation is catching pace in the rural areas of sub-Saharan Africa, particularly Tanzania where rural population is growing and the share of farm employment is declining, majority of rural population struggle to find non-farm

business/employment mainly around small towns (Lazaro et al 2019; Steel et al., 2019). However, access to necessary capital, business information and employment opportunities for rural residents is more constrained relative to the town/cities. Behind these hurdles Kristiansen, (2003) clarifies that rural businesses employ their social networks like friends, family and trade partners to obtain capital, recruit labour and obtain market information. Social networks are identified to influence information, capital and labour flow to serve economic activities such as business investments (Gee *et al.*, 2016; Goyal, 2016). Inherent social relations which are stronger in rural areas have been a vehicle for rural labour to obtain jobs and recruit productive labour into non-farm businesses. Empirical assessment of how social networks have aided resource constrained individuals in rural areas of the Tanzania to obtain labour and employment opportunities is scant.

A large body of literature aligned with social network analysis (Allen, 2000; Bian *et al.*, 2015; Xiong *et al.*, 2017) has documented social networks as a key tool to signal or transfer and shape labour recruitment in both the formal and informal sectors. Hällsten *et al.* (2017) and Hensvik and Skans (2016) argue that social networks have been influential in conveying information about employment opportunities to both employers and workers. Social networks through provision of information, goods and services, capital and labour (Mano, 2010; Mabadu, 2014; Nolan *et al.*, 2017) are thus presumed to play a significant role in recruiting labour and influencing business development in small towns.

This paper examines the role of social networks in employment creation among businesses in EUCs of Ilula and Madizini townships in rural areas of Tanzania. Specifically, it examines the role of strong and weak social network ties in recruiting/allocating temporary and waged employees to businesses. It also examines

potential effect of social networks on employment creation. The analysis tests the hypothesis that size and influence of business owner social networks characteristics have no significant effect on employment creation among businesses in the EUCs. The paper argues that the creation of employment opportunities around EUCs in rural areas largely hinges on the function of social networks, which channel resources across the increasingly interlinked agriculture, commerce, service, and manufacturing sectors.

## **6.2 Literature Review**

Social networks are also often discussed from a relational point of view with a greater focus on the strength of ties (conceptualized as strong and weak ties) an actor maintains, which in turns dictates the amount and quality of resources they receive from the network. Regarding labour allocation, strong network ties are mostly those with family, relatives and friends, while weak network ties are linked to occupational acquaintances, partners and institutions, these are acclaimed to play an instrumental role in employment creation (Granovetter, 2018). However, literature has a mixed view on who plays a leading role in influencing employment creation. According to Granovetter (1973) and Brady (2015), weak ties have been proved instrumental in effecting employment creation, while strong ties like family and friends are perceived to be less effective. This is based on the argument that strong ties tend to involve actors who are less connected to individuals with relevant information to facilitate employment creation. In contrast, weak ties, which are normally based on occupational acquaintances, involve actors who are spatially linked than strong ties. Weak ties are reported to be used by migrants to find work, particularly in urban areas, where strong or close ties of family and friendship might be rare (Lancee, 2016). While weak ties are considered beneficial in accessing distant and non-redundant (new) information, Kim and Fernandez (2017) and Kramarz and Skans (2014) show that

weak ties are less likely to share information about job opportunities than the strong ties. These conflicting views, however, emerge from the heterogeneity of populations and perspectives (Gee *et al.*, 2017). By contrast, most of these studies target uniform populations like students and formal institutions like companies (Barbulescu, 2015).

Meanwhile, the discussion of social networks dwelt on relational aspect (Tian and Lin, 2016; Kim and Fernandez, 2017; Tian and Liu, 2018) of the network attributes, like the size and influence of such relations measured by degree and eigenvector centrality, are presumed to be instrumental in inducing employment creation and subsequent business development. Kuépié *et al.* (2015), for instance, shown that expanding business network connections resulted in an increase in firm profits among small businesses in West Africa. This was, however, conditional on the actor a firm is linked to. Berrou and Combarous (2011) further show that expanding one's size of social network broadens the scope of one's resources, especially in accessing information and finance, both of which are vital to improving business performance and employment creation. The impact of social networks on businesses is acclaimed to be realized if businesses struggle to broaden their connections, as networks tend to favour the well-connected rather than well-qualified actors (Tenikue and Walther, 2014). This network configuration is important in guaranteeing the acquisition of better resources, business development and subsequent employment creation (Arregle *et al.*, 2015). Thus, while network size and the relevance of the connected nodes emerge as key components, establishing their effect on employment creation is important.

The current discussion around employment creation reveals notable differences with respect to definitions and applications. The total employment created by a sector or

business is perceived to be a combination of direct, indirect and induced employment (Kweka *et al.*, 2003). Direct employment refers to wage employment. Indirect employment entails hiring a service for an entity, while induced employment occurs through expenditure on consumption of income generated from direct and indirect employment. Thus, the actual amount of employment created is a product of sector multipliers and direct employment (Kweka *et al.*, 2003). However, in small-town settings where the informal sector is dominant, multiplier indices can hardly paint the actual situation (Mendez-parra, 2015). Other studies, such as Henley (2005, 2007) and Henrekson and Johansson (2010), have examined employment creation from a self-employment perspective, which largely targets small businesses or entrepreneurs (see also Parker, 2004 and Cowling *et al.*, 2004). The perspective was connected to the argument that a transition from being a sole trader to having shareholders and employees provides a significant economic contribution to employment creation.

The effect of social networks on employment creation has been analysed differently across the literature. Brady (2015) modelled social network size and strength based on the frequency of interactions however, this approach differs from a standard measurement of network strength as suggested by Granovetter (1973). According to Granovetter (1973) the strength of ties relies on the time, intimacy, emotional intensity, and reciprocal services that characterize it. Others (Burns *et al.*, 2010) have employed mean neighbourhood characteristics as a proxy for social networks, which might introduce omission biases. Network size as measured by the number of ties (degree) and influence, given the degree of connections with neighbouring nodes, are presumed to be the best way to measure the bases of business owners' social networks. In this study, these

methods are therefore used to determine the effect of social networks on employment creation in small towns.

The remainder of the paper is structured as follows. Section two is the methodology section, which discusses the theoretical departure of the study, study design, means of data collection, study sites and analytical methods used. Section three examines the employment characteristics of the studied businesses, focusing on the amount of employment created and the influence of social networks in sourcing labour and employment creation in small towns. Finally, the paper ends with a discussion of the results and concluding remarks.

### **Theoretical framework**

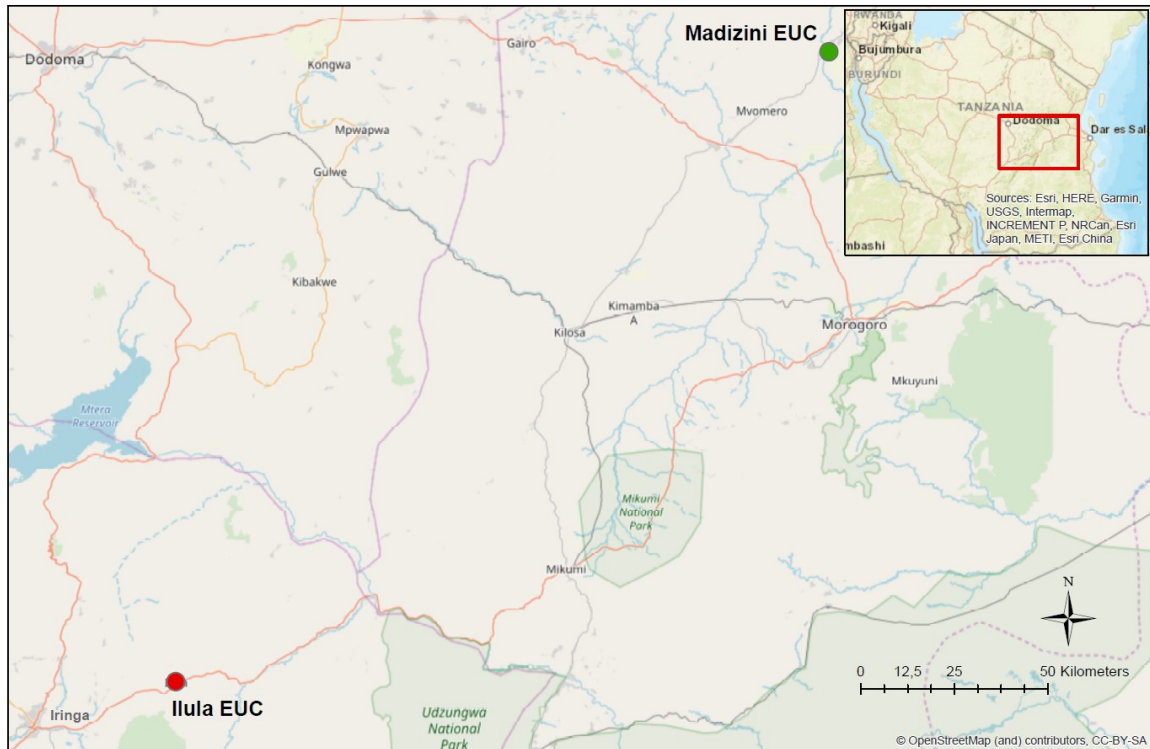
The paper employs social network theory, which is contextualized as a social system that focuses on relationships between the entities that make up a system, which are called actors or nodes (Borgatti *et al.*, 2013). The relationships between these actors are represented as ties or links. The type of relationship that an actor or business has, whether strong or weak, depends on time, emotions and intimacy, and the reciprocal sharing of services (Granovetter, 1973). These interactions play a crucial role in the success of an enterprise. The relationship between weak and strong ties and its contribution to labour market studies is drawn from the theory of social capital as a component of the general social network. According to Lin (1999), social capital is defined as investment in social relations with expected returns. It also encapsulates trust, norms and shared values (Brady, 2015). In this study a network view of social capital as a relational good is employed to explain how the type, size and influence of their social connections might affect employment creation in small towns.

## **6.3 Methodology**

### **6.3.1 Study sites**

Geographically, Ilula and Madizini EUCs are in the rural parts of Iringa and Morogoro regions respectively (see figure 6.1). Ilula is in Kilolo District, about 50 kilometres East of Iringa Regional Offices, while Madizini is in Mvomero District, about 92 kilometres North of Morogoro Regional Offices. The two EUCs were selected amongst four EUCs from Rural Urban Transformation (RUT<sup>9</sup>) project. This was because the EUCs have registered rapid economic growth in the last decade creating employment opportunities mainly around tomato, paddy, and sugarcane crop value chains. Ilula EUC is made up of Ilula and Nyalumbu wards, while Madizini EUC is part of Mtibwa ward. The sub-villages surveyed in Ilula EUC were Ilula Sokoni, Ngelango, Ilula Mwaya, Ilula Mtua, Igunga (Isele), Itunda, Ding'inayo (Ilala), Madizini, Masukanzi, Majengo Mapya, Nyakilomo, and Itabali. Barabarani, Mji Mpya, Madizini A, Madizini B, Mpingoni, Lusanga road, Kibaite and KKKT were the sub-villages surveyed in Madizini EUC. Satellite and Google maps were used to delineate areas of the EUC with high settlement/built-up areas and zones where most businesses were located.

<sup>9</sup> Rural-Urban Transformation (RUT): Economic Dynamics, Mobility and Governance of Emerging Urban Centres for Poverty Reduction is a collaborative project between School of Agricultural Economics and Business Studies of Sokoine University of Agriculture and Department of Geosciences and Natural Resource Management (DGNRM), Geography Section, of University of Copenhagen. RUT is designed to primarily contribute to Tanzania as well as DANIDA's priority to reduce poverty.



**Figure 6.1: Map of Tanzania showing Ilula and Madizini EUCs**

### 6.3.2 Study design

The study used a cross-sectional design to obtain quantitative and qualitative data. The quantitative data were collected in 2017 during a survey of businesses in both Ilula and Madizini EUCs using a structured questionnaire. The survey intended to obtain business information related to business owners' involvement in farming (key crops cultivated) and employment status based on the number of direct/waged employees and their characteristics. Other information collected included the number of people involved or hired indirectly to provide transportation, culling (loading and unloading), storage, office space and security. Relational and attributional social network data were also collected as evidence of the means used to obtain labour and explain the social network effect on EUC employment creation. Network size and influence obtained from degree and eigenvector centralities were used as proxies of business owners' social network base. The centralities

were obtained from assessment of firms' connectivity to product exchange networks, which merged buying and selling networks.

### **6.3.3 Sampling and data collection**

Businesses were selected at random based on their categories and were geocoded based on their locations. Business categories were formulated based on data for registered businesses obtained from the district trade officers and the Tanzania Revenue Authority (TRA). The business categories were services, which included businesses like restaurants and hotels; shops and trading, which included businesses such as retail and wholesale shops, crop-traders and brokers; workshops, which included businesses such as repair shops; manufacturing and processing, which included businesses like tailoring, tomato- and paddy-processing, brickmaking and manufacture and carpentry; and transportation, which comprised trucking, *bodaboda* or motorcycles and tricycle businesses.

Each business owner was asked to name a maximum of eight people with whom they frequently traded and shared information in 2016. The survey was conducted to ensure spatial coverage of all kinds of businesses in the EUCs' marked areas with the aim of uncovering the existing business networks and employment creation status. A total of 459 businesses in Ilula and 296 businesses in Madizini were surveyed, and the scope of the study was limited to business-to-business ties and businesses within the EUCs' respective boundaries.

In order to supplement the information on networks obtained by means of the questionnaire, qualitative data were also collected through key informant interviews and focus-group discussions. Interviews were conducted with the Township and/or Ward

administration, elders, financial institutions (including banks and other financial intermediaries such as SACCOS<sup>10</sup> and VICOBA<sup>11</sup>), Tanzania Revenue Authority, Mtibwa Sugar Company, Mvomero and Kilolo District offices, business associations and Township Trade Officers. Focus-group discussions were carried out with members of business associations, including two *bodaboda* groups and two furniture manufacturing groups, as well as one youth group. All interviews were conducted with the aid of semi-structured interview guides that contained questions related to the historical development of the businesses, labour movements and employment-creating ventures that were fast developing in the EUCs.

#### **6.3.4 Analytical methods**

The paper employs descriptive statistics, multivariate analyses, and content analysis to analyse both quantitative and qualitative information. Descriptive statistics were based on frequencies, means and standard deviations to profile business, farm, and employment characteristics. To examine the likelihood of employment creation, a log-transformed left-censored Tobit model of employment creation was estimated. The explained variable included total employment, which was obtained by aggregating own employment with the number of waged employees, unpaid family labour and indirect employment. Owning a business was also regarded as employment created for the business owner. This is because an ability to establish a business venture is considered employment creation as it optimizes the use of one's own labour, apart from being formally employed. Indirect employment was computed as the sum of employment created through hiring processes, including casual labour to transport, load, unload, and store goods. Other forms of indirect

<sup>10</sup> The Savings and Credit Co-operative Society is an informal financial intermediary receiving savings and providing credit to the registered members of a community.

<sup>11</sup> Village Community Banks are informal savings and lending institutions which mainly supplies the credit demands of low-income community members.

employment included people hired to provide security services and act of hiring office space. The total employment data was observed to be left-skewed, as a large proportion of businesses operated as sole proprietors. This study adopted an estimate proposed by Carson and Sun (2007), whereby a log-normal variant of the standard Tobit model to obtain the maximum likelihood estimators was introduced, assuming a non-zero threshold of one. The model measures the likelihood of creating employment based on its inherent owner, business, farm, and network characteristics.

The independent variables that entered a log-variant Tobit equation were the logarithms of weighted degree centrality and eigenvector centrality, introduced to the model as indicators of the size and influence of EUC social networks. Weighted degree centrality was obtained by weighting combined buying and selling networks. Degree centrality is a measure of the number of ties a node has relative to the total number of ties in the entire network. Eigenvector centrality measures the influence or importance of a node based on its connections in the network. The influence of a node is based on a comparison of its degree centrality relative to the degree centrality of its adjacent nodes (Borgatti *et al.*, 2013). Bonacich and Lloyd (2001) developed a beta centrality measure  $C_{CB}$  with a parameter  $\alpha$  for adjusting the importance of a node's degree vis-à-vis parameter  $\beta$  for adjusting the importance of the centrality of nodes in the neighbourhood between node  $i$  and  $j$ . This is shown in equation 1:

$$C_{CB} = \sum_{j \in N(i)} \alpha + [\beta C_{BC}(j)] = \alpha \log(i)_n + \beta \sum_{j \in N(i)} C_{BC}(j) \dots \dots \dots (6.1)$$

Other regressors were the age of the business owners, sex, marital status, household size (the number of people living under the same roof), education measured in terms of years of schooling, a dummy for agriculture that determined whether a respondent cultivated

any crop in 2016, and a dummy for the ownership of other business. Business-specific variables were dummies for service, trading, workshop, manufacturing, stock value and business turnover (average sales per day). The log-transformed model was estimated in STATA software using the maximum likelihood estimator while taking care of possible estimation problems. Potential model diagnostics like collinearity and a normality test were undertaken, no problem being observed. Regression results are reported using robust standard errors. Content analysis was done thematically using NVIVO 12. Thematic areas were intended to identify fast-growing business ventures following an already established list of business categories. The analysis also identified businesses that employed significant numbers of people with respect to their age and/or sex and lastly identified the factors that might limit employment creation among the businesses studied. Organisation and analysis of social network information was done using Gephi software (Bastian, Heymann, and Jacomy, 2009).

## **6.4 Results**

This section presents the characteristics of the businesses studied in terms of their involvement in farming and employment features. It further presents an analysis of the 21 business categories with respect to size of employment created directly and indirectly, followed by a presentation of the strategies used by business owners to recruit this labour. Finally, the section ends by presenting results regarding the importance of social networks in EUC employment creation prospects.

### **6.4.1 Business, agricultural and employment characteristics**

Despite operating non-farm businesses, crop farming was observed to be practised by majority EUC business owners. Table 6.1 shows that, majority of the businesses (55 % in

Ilula and 53 % in Madizini) were involved in farming the main crops in the area, namely tomatoes in Ilula and paddy/rice in Madizini. In Ilula, the tomato was the key cash crop, cultivated by 30 % of the surveyed businesses. Paddy/rice was observed as a key cash crop cultivated by 37 % of the businesses studied in Madizini. Maize was also cultivated by many business owners (56%) as a key food crop in both EUCs.

It was further revealed that 66 and 62 % of businesses in Ilula and Madizini respectively did not have any waged employees, though more employment opportunities were created indirectly through the services demanded by the businesses. These opportunities were mainly created by hiring transport (30 % in both EUCs), cullies (21 % in Ilula, mostly in the tomato chain business), security (20 % in Ilula and 25 % in Madizini), as well as storage and renting. Most waged employees were also males with basic primary education working under informal contractual arrangements.

**Table 6.1: Business owners' farm and employment characteristics**

	Category	Description	Ilula		Madizini	
			n	%	n	%
<b>Farm-level characteristics</b>	Cultivated crop(s)	No	207	45.1	138	46.6
		Yes	252	54.9	158	53.4
	Crops cultivated	Tomatoes	107	30.1	4	1.8
		Maize	200	56.3	129	57.8
		Paddy	3	0.8	83	37.2
		Beans	27	7.6	4	1.8
		Sunflowers	18	5.1	3	1.3
<b>Employment characteristics</b>	Employment status	Without employees	304	66.2	185	62.5
		With employees	155	33.8	111	37.5
	Indirect employment	Transport	359	30.3	189	29.8
		Cullies (loading and unloading)	255	21.6	83	13.1
		Security	242	20.5	163	25.7
		Storage	111	9.4	17	2.7
		Rent for the shop or stall	216	18.3	183	28.8
		Employee's sex	Male	120	76.1	82
		Female	37	23.9	27	24.8
	Employee's education	Primary education	90	58.8	62	57.4
		Secondary education	38	24.8	24	22.2
		Both primary and secondary	24	15.7	13	12.0
		College education	1	0.7	9	8.3
	Payment arrangements	Weekly	8	5.2	4	4
		Monthly	59	38.6	70	70
		After completion	16	10.5	10	10
	Contract arrangements	Daily	70	45.8	16	16
Formal contract		14	9.1	14	12.6	
Informal/verbal contract		128	83.1	92	82.9	
	No contract agreements	12	7.8	5	4.5	

#### 6.4.2 Employment creation across different business categories

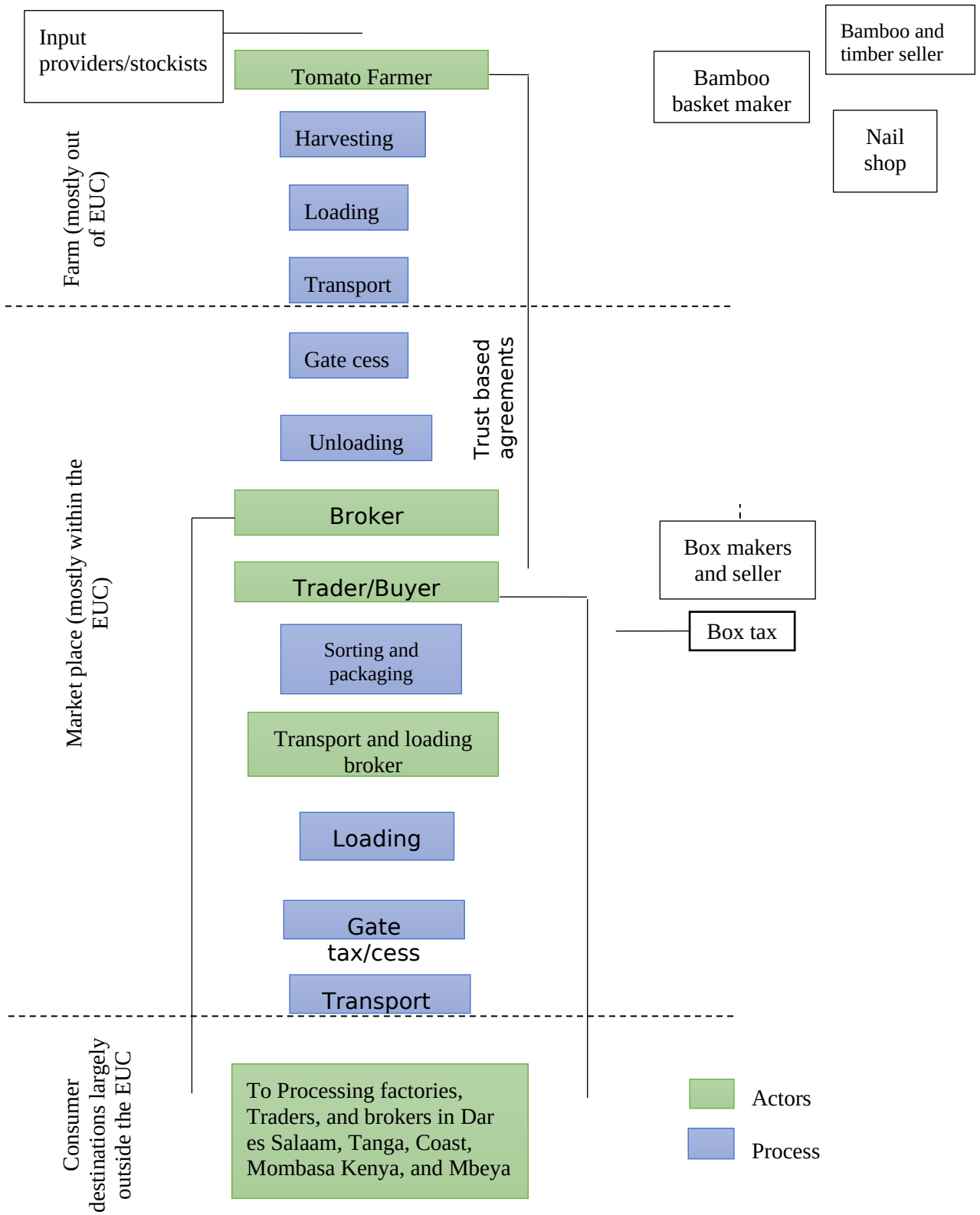
As most of the businesses (mainly in Ilula) were engaged in economic activities related to the tomato value chain, most of the employment opportunities were created around and linked to the tomato sector (tomato flow chart in Figure 6.2). For instance, the tomato value chain created employment opportunities around input provision where there are

stockists; crate makers where they bought nails and other materials from hardware stores; cullies who did the loading and unloading, and sorting or grading of tomatoes; transporters using motorcycles, tricycles, and trucking business; other employment opportunities developed around the TASAF market were food vendors, restaurants, bars, mobile money services, pool table, retail shop, and stores. Similarly, Paddy/rice business in Madizini created numerous employment opportunities from input supply and different on-farm activities to off-farm activities in transportation, processing, and loading/offloading activities. Activities which attracted business investment in mobile money and banking services, repair shops, hospitality, and food services (see figure 6.3).

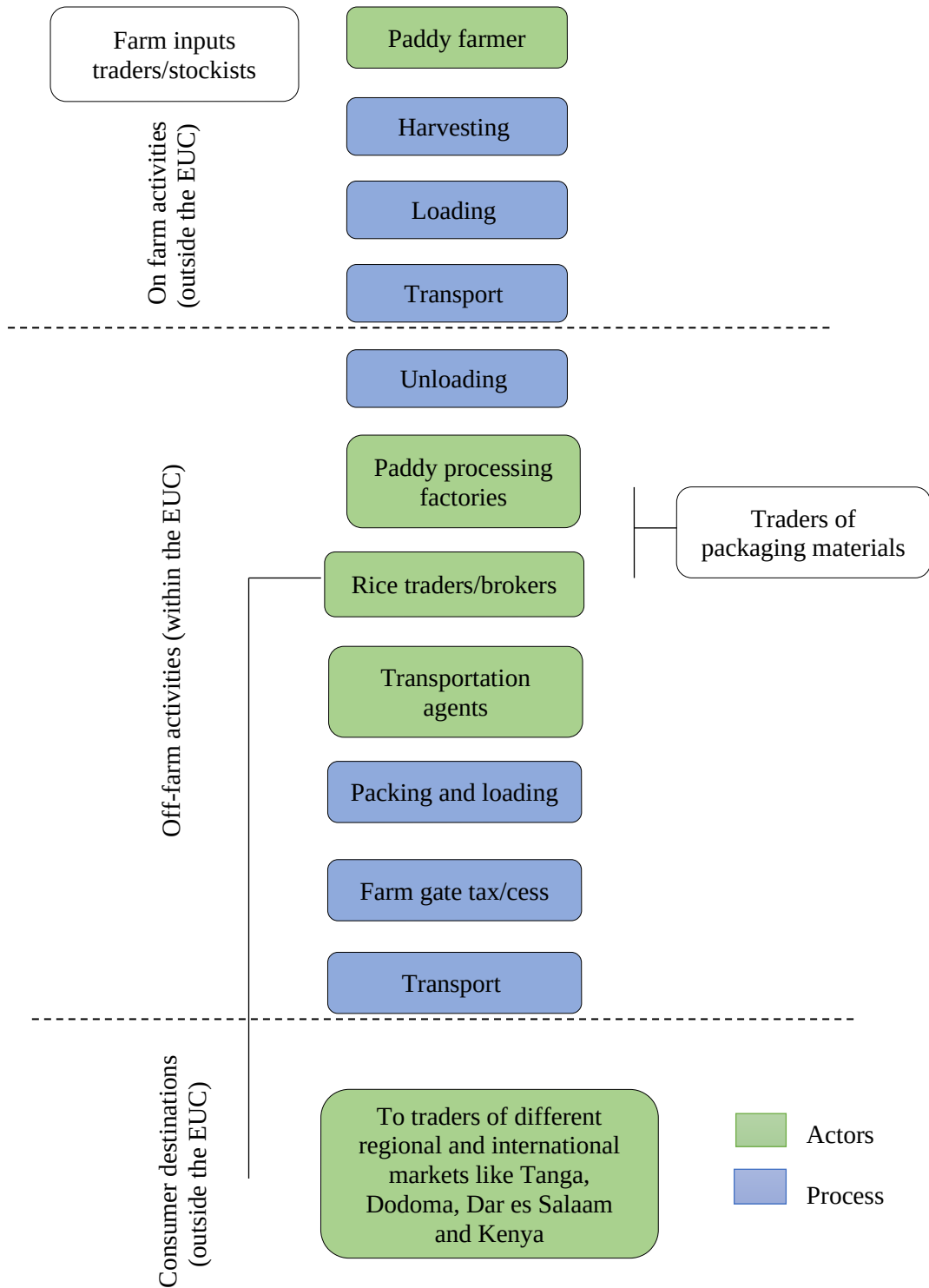
Among the businesses with high employment potential in the EUCs were production of packaging materials in Ilula which on average employed eight waged employees as well as construction-based businesses and food-crop vending that employed an average of five and four individuals, respectively, (Table 6.2). In Madizini timber-related businesses like carpentry and hotel services employed an average of seven and three employees respectively. Food-crop trading and wholesale and retail in Ilula and food processors, mainly paddy/rice processors and traders of food crops in Madizini, were observed to employ an average of nine to eleven people. Wholesale and retail trading, crop-traders, food-processors, and construction businesses were also identified as indirectly employing more labour, especially through the demand for transportation, cullies, and security services.

Generally, businesses in Ilula and Madizini created a total of 3 655 and 1 693 employment opportunities where 1 121 and 511 were hired directly (direct employment), while 2 750 and 1 236 were hired indirectly (indirect employment). this makes a ratio of 6 and 8 hired

labour for each business in Ilula and Madizini, respectively. The number of hired labour varied depending on the season where it increased during the harvesting and decreased thereafter.



**Figure 6.2: Tomato business flow diagram representing businesses, actors, process, flow of goods within the tomato value chain and employment opportunities created along the chain in Ilula EUC**



**Figure 6.3: Paddy/rice business flow diagram representing businesses, actors, process, flow of goods within the paddy/rice value chain and employment opportunities created along the chain in Madizini EUC**

**Table 6.2: Business categories and the amount of direct and indirect employment created**

Business category	Business type	Ilula					Madizini				
		n = 459	Direct Employment		Indirect Employment		n = 296	Direct Employment		Indirect Employment	
			Mean	S. Dev	Mean	S. Dev		Mean	S. Dev	Mean	S. Dev
Service	Food and Drink	46	2.6	1.9	5.6	5.4	28	2.7	2.5	3	1.7
	Art, Musical and Video	2	1	0	5		1	1		1	
	Hotel Amenities	7	4.3	0.8	5.6	1.7	3	3.3	3.2	3.5	2.1
	Cleaning and Beauty	1	2		3		11	1.4	0.7	1.4	0.7
	Transport	69	4.3	0.8	5.6	1.7	17	3.3	3.2	3.5	2.1
	Other services	4	1	0	3.3	2.3	13	1.3	0.5	1.6	0.5
Shops and Trading	Food crops Trading	94	4.8	6.3	11.7	11.8	38	2.4	4.9	9.3	9.1
	Farm Inputs	16	1.9	1.6	7.4	5.2	2	2	1.4	5.5	2.1
	Clothing, Fabrics and Footwear	23	1.1	0.5	4.7	3.9	36	1.2	0.5	4.1	2.3
	Hardware, Motor/parts, and Electronics	19	4	6.1	8.2	6.2	23	2.2	1.9	6	4.6
	Wholesale/Retail	4	3.5	3.8	10.3	5.6	6	3	1.3	6	2.8
	Vending Stall	76	1	0.3	7.7	9.5	14	1	0	4.2	3.9
	Retail shop	33	1.5	0.8	6.6	7.4	67	1.3	0.7	5	9.3
	Other Trading	14	1	0	1.2	0.4	5	1.4	0.9	2.4	0.9
Workshop, manufacturing, and processing	Workshop	11	2.7	3	7.9	4.8	5	3.2	2.3	2	1.4
	Packaging Materials	11	7.8	5.9	8.2	4.8	0				
	Timber Processing and Products	10	3	2.2	7.8	7.6	7	3.1	1.9	5.9	3.8
	Food Processing	16	3.2	1.1	6.2	4.4	4	3	2.3	7.3	10.5
	Construction and Materials	2	5	5.7	16	4.2	0				
	Iron Works	0	2.6	1.9	5.6	5.4	4	2.7	2.5	3	1.7
	Tailoring/Sewing Works	2	1	0	5		12	1		1	

### 6.4.3 Role of social networks in recruiting labour

While many business categories created more employment via indirect means, strategies to recruit this labour relied largely on their social networks. Strong and weak network ties were central in recruiting and obtaining labour-related information like work experience and wages in the EUCs. As shown in Table 6.3, majority of business owners in Ilula (about 90 %) and Madizini (46 %) reported using their strong ties of friendship networks to obtain information when searching for permanent (waged) and temporary (casual) labour. As part of strong network ties, family networks were also reported by 62 and 31 % of business owners in Ilula and Madizini. Regarding the strategy used to hire workers who were in employment at the time of the survey, business friends (occupational acquaintances) were the preferred means in both Ilula and Madizini, besides business unrelated friendship networks. The results thus underscore that both strong and weak social ties, are all important in influencing labour recruitment in both EUCs. One manufacturer of tomato boxes (wooden crates) mainly used for packing tomatoes who also worked as tomato trader said that:

*“... I normally get people to make boxes from other box makers in Ilula, and sometimes workers recommend their friends as being hard-working and productive. It is the same with workers we hire for sorting and packing tomatoes, as some works are performed by a group of people through their leader, and I hire them based on recommendations I get from my colleagues (tomato traders, here regarded as business friends) ...”* (interview done with a tomato box/crate maker in March 2017, in Ilula)

Formal procedures of screening and recruiting labour were also reported to be common among large and/or formal businesses in the EUCs. This confirms the finding that the

provision of information related to labour issues across businesses linked through weak ties was common between businesses within similar categories, especially those located in the neighbourhoods.

**Table 6.3: Social network methods of recruiting labour in Ilula and Madizini EUCs**

Category	Description	Ilula		Madizini	
		n	%	n	%
Contacts for sourcing temporary labour	Family/Relatives	158	35.0	40	26.1
	Friends	289	63.9	59	38.6
	Personal efforts	3	0.7	18	11.8
	They come themselves	2	0.4	36	23.5
Contacts for sourcing waged labour	Family/Relatives	137	39.8	31	27.0
	Friends	204	59.3	50	43.5
	Personal efforts	1	0.3	14	12.2
	They come themselves	2	0.6	20	17.4
Sources of current employees	Family/Relatives	88	15.9	36	18.8
	Friends	259	46.9	61	31.9
	Business friends	161	29.2	32	16.8
	Government leaders	40	7.2	5	2.6
	They came themselves	4	0.7	47	24.6
	Personal efforts	0	0.0	10	5.2

#### 6.4.4 Social networks and employment creation

To determine the role of social networks in supporting employment creation in the EUCs a left censored Tobit regression was estimated. The findings from a maximum likelihood estimators of the Tobit model revealed that having a robust social network increases the likelihood that employment will be created in both EUCs. As illustrated in Table 6.4 a one percent increase in network influence (eigenvector scores) was observed to increase the likelihood of creating employment among Ilula businesses by 22 %. However, a one percent increase in the influence of social networks among Madizini businesses decreased the likelihood of employment creation by 13 %. This observation negates the theoretical expectations where having actors with high weighted degree centrality in the

neighbourhood is expected to increase business performance and subsequent employment creation. The unexpected result echoes the observed problem of poor linkages between non-farm businesses and the dominant crops (sugarcane and paddy) grown in Madizini EUC as seen in Nyaki et al, (2022). While the influence of network size was insignificant in Ilula, a one percent increase in the size of social networks as measured by weighted degree increased the likelihood of creating employment among Madizini businesses by 35 %.

The analysis further revealed that in Ilula, male-owned businesses were associated with a decrease in employment creation (by 34%) than female owned businesses, an observation which contradicts prior expectations. This observation could stem from business ownership disproportions which affect decision making and under-representation of female business owners in most establishments (Blanchflower, 2000). Conversely, a percentage increase in household size in Madizini increased the likelihood that additional labour would be employed by 21 %. This could be explained by the fact that where most businesses are run by a family, each additional member of the household is expected to work for the businesses, which implicitly increases employment. Experience of running a business was also observed to be important in supporting employment creation in both EUCs. Specifically, having run a business in the past among businesses in Ilula and having another business in operation among business owners in Madizini increased their likelihood of creating employment opportunities by 24 and 30 % respectively.

Investment in food-crop trading, and manufacturing and processing businesses was observed to be the ventures creating the most employment with a likelihood of 41 and 53 % in Ilula and 42 % in Madizini relative to service-based operations. Conversely, running

a transportation business decreased the likelihood of creating employment in both EUCs compared to service businesses. In Ilula and Madizini, a percentage increase in business stock size led to an increase in the likelihood of creating employment by 23 and 8 percent, respectively. Similarly, a percentage increase in sales turnover in Ilula increased the likelihood that employment would be created by 9 percent.

**Table 6.4: Employment creation in Ilula and Madizini using log likelihood estimates of a Tobit model**

	Ilula			Madizini		
	Coef.	Robust Std. Err		Coef.	Robust Std. Err	
Log network Influence	0.223	0.069	***	-0.132	0.064	**
Log network size	-0.136	0.124		0.352	0.134	***
Log age	0.229	0.296		-0.032	0.207	
Log education	0.231	0.186		0.138	0.179	
Log household size	-0.039	0.132		0.212	0.105	**
Sex	-0.342	0.134	**	-0.067	0.112	
Log business experience	-0.084	0.073		0.088	0.064	
Owens another business	0.040	0.119		0.246	0.141	*
Had businesses before	0.301	0.121	**	-0.024	0.117	
Food-crop trading	0.414	0.202	**	0.426	0.170	**
Wholesale and retail trading	-0.079	0.207		-0.111	0.127	
Manufacturing	0.533	0.248	**	0.196	0.170	
Transport	-1.867	0.293	***	-1.325	0.377	***
Tomato/Paddy-growing	0.216	0.131	*	0.054	0.119	
Log stock	0.233	0.043	***	0.087	0.039	**
Log sales turnover	0.090	0.036	**	-0.009	0.042	
Constant	-2.919	1.121		-1.371	0.862	
Sigma	0.888	0.044		0.772	0.057	
Number of observations	350			215		
F (16,334)/ (16,199)	30.35			4.82		
Prob>F	0.000			0.000		
Pseudo R2	0.233			0.151		
Log pseudolikelihood	-423.405			-246.949		

Note: \*, \*\* and \*\*\* denotes that the coefficients are significant at 10%, 5% and 1%; respectively. Source: author's compilation.

An interview with the leaders of the business associations in Ilula and Madizini revealed that the employment opportunities that were created varied greatly depending on the

seasonality of the dominant crop produced. A chairperson of Madizini's business association reported that:

*"... in the harvest season we normally receive a large number of migrants who come to trade crops and for other business activities. A large influx of people is also observed in periodic markets (also known as gوليو), and more job opportunities arise because most people who are farmers will come to spend money, they get from selling their produce. They mostly buy household consumable goods, clothing and building materials, which creates jobs in transportation, hospitality (hotels, lodges and guest houses and restaurants). During the planting of paddy less money is spent, as most of it is channelled back to the farm ..."* (interview with a chairperson of Madizini business association, in July 2017, in Madizini)

His explanations conform with empirical evidence on employment created by means of an indirect multiplier effect of increased consumption due to changes or increase in personal incomes.

## **6.5 Discussion**

An analysis of business owners in the EUCs learned that, despite being in an EUC settings and practising non-farm activities, the cultivation of major crops (tomatoes and paddy/rice) played a significant role in business and household development. This underscores the primal importance of the farm sector and non-farm sector interdependence as each sustains the other. Thus, creating forward and backward linkages as proceeds from farm business also fund non-farm business operations. Linkages which tend to be stronger around EUCs which act as areas of agglomeration and value addition through processing, and service centres. The discussion is supported by Reardon *et al.*

(1994) and Tacoli and Agergaard (2017) who substantiate that farm business has been essential to non-farm businesses and they have been coexisting in small towns as they provide income and ensure food availability.

Employment creation potential among businesses in both EUCs, particularly waged employment, is constrained by the nature of the businesses, most of which could not support many employees. This is largely due to their inability to pay full-time wages and the economic uncertainties that most small businesses encounter and high level of informality. Most businesses remain small (do not expand) and prefer to operate as sole or family-run proprietors to save wages and because of the fear of losing control when they expand. This is supported by Parker (2004) discussion who substantiated that many small businesses particularly in developing countries prefer to be small due to uncertainties of expansion and unreadiness to employ extra labour. Informality is also reported by the ILO (2019) as being high among small businesses, this being a constraint on continued business development and employment creation.

The role of social networks in obtaining labour-related information and recruiting employees in and around both EUCs was substantial. Strong and weak network ties were all important in recruiting labour in both EUCs because of the deep social attachments that have value for the information and resources they provide. This could also be a result of the mix of migrants and local people with diverse tribal and ethnic networks, which Granovetter (1979), Kayastha *et al.* (1997) and Lancee (2016) have also proved to constitute informal arrangements of labour recruitment. These findings are also consistent with work by Calvó-Armengol and Jackson (2007) and Mayer (2011) in which actors tend to trust information provided by their close ties and business partners in their neighbourhoods. However, further research is still required to examine the kinds of personal qualities and information involved and to determine how impactful was the

information shared by both weak and strong ties in EUC businesses in recruiting productive manpower.

Expanding the size of social network connections in Madizini and network influence in Ilula increased the chances of creating employment opportunities. This reflects the fact that expanding the number of network connections increased the chances that a business would perform better, which points to the creation of more employment opportunities by means of a multiplier process. This conform with Kuépié *et al.* (2015) and Mano (2010) who expound that large size of network connectivity assures business operations and hence increases demand for resources and labour. In Madizini, increasing the influence of social networks however reduced the prospects for employment creation. This could be attributed by: i) lack of a significant linkage of non-farm business and crop related (paddy/sugarcane) businesses within the business network in Madizini EUC. That is because paddy and sugarcane lacked large number of value chain-related activities that open job opportunities, like other high value crops for instance tomatoes. This agrees with Temu and Temu (2006) who also deduced that high value crops are more linked to broad value chain activities which create chances for growth of non-farm businesses. This is additional supported by Nyaki *et al.* (2022) where, in relation to paddy trading business, tomato trading businesses exerted influence on many other businesses in the EUC. ii) Poor network connectivity with large number of poorly networked businesses is also presumed to cause the unexpected results. Nyaki *et al.* (2022) shows that the Madizini business network is weakly connected compared to the Ilula business network.

## **6.6 Conclusion and Policy Implications**

The objective of this manuscript has been to analyse the role of social networks in influencing labour recruitment to EUC businesses and their subsequent effects on employment creation. A key deduction from the study is that farm production is still

important among majority of business owners in the EUCs, and it has a major role in creating employment in the EUCs. Amid a large informal sector with many small businesses, a number of employment opportunities were created both directly and indirectly. The scale which was high in harvesting/high season. Social networks of weak and strong ties were central in recruiting and finding labour for these businesses.

A major deduction was that the prospects of creating more employment opportunities relied largely on the scope of one's social networks and influence/linkage of crop/farm and non-farm businesses. Thus, to sustain future employment creation around EUCs in the rural areas where agriculture has a major influence, broadening of social networks for non-farm business around the crop value chain is a requisite.

Thus, rural areas of Tanzania require progressive strategies to support employment creation particularly for the farm reliant growing rural population. With no formal institutional arrangements, the study recommends that strengthening extended social networks alongside promoting business formalisation should be an important entry to promoting employment creation. This also calls for increased public and private sector collaboration in supporting crop value chain development around EUCs as the sustainability of EUCs business and prospects of increasing rural employment creation relies on the crop sector stability.

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## **CHAPTER SEVEN**

### **7.0 GENERAL SUMMARY, CONCLUSIONS, AND POLICY IMPLICATIONS OF THE STUDY**

This chapter provides major summary, concluding remarks drawn from the thesis, highlights key policy implications prompted by the results discussed, and describes critical contributions the thesis makes to the existing body of knowledge.

#### **7.1 General Summary**

This research has examined the role of social networks on business development, investment, and employment creation within Ilula and Madizini Emerging Urban Centres (EUCs) in rural areas of Tanzania. Theoretically, the thesis takes its point of departure on social network theory which shows how economic actions are embedded within social relations. It further shows how economic actors' decisions and actions are influenced by their social networks, which influence their chances of accessing the right market information and capital, given the large informal sector and market uncertainties. The role of social networks on business development was assessed by examining how the increased size and influence of social network affect stocks and business sales turnover. It also involved examining how these social networks play a role in influencing business investment decisions, given the importance of market information and the resources they can deliver. Finally, the study assessed how instrumental these social networks are in influencing employment creation among businesses in the EUCs.

The study aimed to answer four research questions: i) What are the kinds of businesses that operate in Ilula and Madizini EUCs? ii) What are the characteristic features of EUC

businesses in terms of flows of goods and services in and outside Ilula and Madizini EUCs? iii) How are business networks in Ilula and Madizini EUCs structured? Iv) What are available trading opportunities and potentials given business embeddedness and brokerage positions in Ilula and Madizini business network? The study also aimed at testing three key hypotheses: (i) that the size and influence of business owner's social networks do not significantly influence business performance; (ii) that business owner's strong and weak social network ties do not significantly influence EUC business investment decisions; and (iii) that the size and influence of business owner's social networks do not significantly influence business employment creation in EUCs. The first hypothesis was tested using OLS with two stage least square regression correcting for endogeneity to obtain social network effect on business performance with robust standard errors. In testing the second hypothesis, a multinomial probit model was used, and the results were reported using computed marginal effects at the mean of each regressor with robust standard errors. Similarly, in testing the second hypothesis, a log-transformed left censored Tobit regression using robust regression was estimated. Results at 1, 5 and 10 percent levels of significance were reported for all tested hypotheses.

The thesis is mainly based on business survey conducted in two EUCs, namely Ilula and Madizini in Iringa and Morogoro Regions in Tanzania, respectively. The two EUCs were purposefully selected from four EUCs within the RUT project. Their selection was based on rapid development registered in the last decade influenced by growing tomato market in Ilula as a high value product and industrial development from sugarcane production in Madizini. The study was based on quantitative data collected using a structured survey questionnaire from a random sample of 459 and 296 businesses in Ilula and Madizini EUCs, respectively. The SPSS and STATA software were used for data processing and in

performing descriptive and multivariate analysis, while Gephi software was used for analysis/visualisation of social network data. Qualitative data were collected using interview guides from key informants at the district, ward and township levels and were analysed using content analysis. The NVIVO 12 was used to organise and thematically analyse qualitative data. The results are presented in Chapters four, five and six, responding to the first, second and third study objectives, respectively.

Chapter four focused on assessing business developments within the two EUCs with respect to the kinds of businesses and major goods that were traded both within the EUC and to and from the surrounding villages, regions, and international markets. It addresses the research question concerning first, what are the kinds of businesses operating in the two EUCs, and what are the characteristic features of the flows of goods and services within and outside the Ilula and Madizini EUCs? Second, how are EUC business networks structured, and what are the trading opportunities and potentials that have been revealed given business embeddedness and brokerage positions in the network? It also responds to the first hypothesis, which examines the significance of social network on business performance. The research presented in Chapter four showed that the structure of businesses in both EUCs was determined by the development and performance of the dominant crop in both areas. Namely tomatoes in Ilula and paddy/rice in Madizini. The development of EUCs has attracted an increasing number of migrants, mostly from the surrounding villages and other parts of Tanzania. These EUCs also act as centres of exchange (market nodes) for agricultural products from the rural areas to regional and international markets and industrial manufacturers for final consumption from urban areas to rural consumers. Ilula and Madizini created an avenue for business development and investment. A variety of business ventures have developed, mostly in the shops and

trading category, mostly made up of wholesale and retail shops and crop-trading. In contrast, service-based businesses (like food-vending, restaurants and mobile money services) and those in transportation and the manufacturing and processing category have developed rapidly. The majority of businesses in the two EUCs were into business ventures with ease of entry and exit which were also unspecialised with a low capital base, having low value and requiring few or no special skills like retail trading and vending. Few businesses were specialised enough to require skills and high amounts of capital like construction, wholesale, carpentry, and industrial manufacturing/processing.

The structure of Ilula and Madizini product and information business networks were centralised to few businesses connected to tomato and paddy/rice value chains (like traders, agents, and processors) and wholesale/retail trading. These businesses' dominance reflected the high levels of trust created, as most businesses relied on them for essential resources like goods and market information. However, many businesses were isolated or not linked to the general EUC business network. Particularly in Madizini, where paddy/rice and sugarcane had poor network connections with other businesses in services, trading, transportation, and manufacturing and processing. Poor linkages in the EUC business networks constrained access to useful information, goods and even capital, leading to underperformance and limiting business development. Crop-traders and those involved in wholesale and retail trading played numerous brokerage roles in facilitating horizontal and vertical linkages across businesses both within and outside the two EUCs. They acted as bridges in accessing and transferring resources to and from businesses within the EUC (horizontal linkages) and outside the EUC (vertical linkages). Expanding the scope of social network connectivity by increasing the size and number of network connections and influence via connections with highly connected businesses increased

business stock and sales turnover. This is due to the fact that more influential networks increased the chance of obtaining markets, products, and information and thus increased performance and development with relevance to rural resource constrained businesses. This refutes the first research hypothesis.

The fifth chapter examines the nature of business investment in the two EUCs regarding geographical and social network information while uncovering how instrumental social networks influence business owners' investment decisions. It answers how business investments in Ilula and Madizini are structured, given their network and geographical information. It also tested two research hypotheses: first, that the individual characteristics of business owners and business-specific features do not influence the use of strong and weak social ties in making EUC investment decisions. Secondly, that the strong ties of family and friendship networks, the weak ties of business acquaintance networks and institutions, and other business owners and business-specific characteristics do not significantly influence choice of business investment in the two EUCs. The use of business geographical information (spatial analysis) and its social network information (business networks) showed that many business investments were aligned with major transport routes, marketplaces, and bus terminals. Most of these networks gravitated towards the dominant crops and wholesale-retail traders located where the crop markets and business centres are. Business investments in EUCs were established randomly based on the strategic opportunity created. This was also exacerbated by lacking formal institutions and institutional arrangements to guide business investment in EUCs, which also emerged as a constraint to EUC business investment. The study treats social network relations with family, relatives and friends as strong social ties and relations with business acquaintances and institutions as weak ties, based on the amount of social capital

invested. Increases in human and financial capital were revealed to reduce the use and relevance of strong ties in influencing investment decisions, as business owners became skilled, experienced, and financed. This result did not rule out the value of strong and weak ties in improving one's human and financial capital, which do not replace the value of the social capital such ties are endowed. This is because strong and weak social networks tie validated decisions regarding what businesses to invest in by business owners in Ilula and Madizini. This is particularly the case to services, crop-trading, wholesale-retail trading, manufacturing and processing, and transportation. It thus refutes the second null hypothesis proposed in the study that strong and weak social network ties do not determine business investment decisions.

The sixth chapter describes the business employment structure and how social networks play a role in influencing business employment creation. The study tests one research hypothesis: that the size and influence of social networks and individual, business, and farm characteristics do not significantly affect business employment creation. The research shows that most businesses in the two EUCs have no direct or waged employees. They, however, create indirect employment/non-waged employment when hiring services like transportation, loading, and unloading, security and storage. This is common among businesses connected to the dominant crop value chains, like tomato and paddy/rice trading, manufacturing, and processing. Access to employment opportunities was largely provided by strong social network ties like family and friendship networks. Thus, as many people migrated to the two EUCs, their social networks were vital in finding employment, while EUC business owners also relied on both strong and weak ties (mainly business colleagues within the same line of business) to recruit labour. Moreover, increasing the size of network connections and network influence (connections with highly connected

businesses) increased the chances of creating more employment opportunities for businesses in Madizini and Ilula EUCs. Chiefly for businesses with linkages to businesses from crop (tomato and paddy) value-chains. In Madizini, a significant number of businesses were poorly networked. This rendered connections with well-networked businesses to lessen the chances of creating employment. Also, unlike tomatoes in Ilula, the Madizini business network had a little business-crop effect as the paddy/rice and sugarcane value chains had fewer chain actors, thus creating poor linkages with other business categories.

EUCs were therefore revealed to be focal centres of business investment in the rural Tanzania as they facilitate rural-urban linkages through a trade of goods and services to and from both rural and urban areas. Social networks were further revealed to play a significant role in influencing business development, informing investment decisions, recruiting labour, and creating employment opportunities. This is because the access to market information, labour and capital relied mostly on social networks. The likelihood of developing a business and creating more employment was also determined by increasing the scope (size and influence) of one's social network, which also directly linked to dominant crop value chains. Therefore, small towns in the rural areas of the developing countries in sub-Saharan Africa create an avenue of business development, investment, and employment amid the large informal sector and poor institutional arrangements. This is, however, realised through robust social networks and linkages with dominant crop value chains where strategic opportunities for rural business development are created.

Therefore, against this background, the following section suggests four overall policy implications that emerge from this research.

## 7.2 Conclusions

The study deduced that Ilula and Madizini are the centres of trade and network of businesses that linked rural and urban spaces. The structure of EUC businesses was centralised towards few businesses closely connected with the value chain of major crops grown in the surrounding villages. Majority of EUC businesses were constrained in accessing quality resources as they were not integrated in the general web of business network. Since most of these businesses were also unregistered their prospect of growth and development relied on the scope of their social networks. Therefore, social networks have an instrumental role to play in influencing EUC business development.

The study deduced that the number of businesses in Ilula and Madizini EUCs has grown, with more specialised businesses in trading, service, processing, and manufacturing. The choice of a business to invest relied on information shared by their social networks as the level of uncertainty, informality is high, and institutions are weak in rural areas. Therefore, social networks played a major role to investors with respect to making business investment decisions.

As business investment grow in Ilula and Madizini, the EUCs were also deduced to be focal points of employment creation to individuals from proximate villages and distant regions. Recruitment of such labour was guided by the social networks of businesses in the EUCs. the prospects of future employment creation also rested on the scope of one's social network and their linkage to the businesses within and around the value chain of the dominant crops. Therefore, social networks played a central role in searching and recruiting labour in the EUCs.

### **7.3 Policy Implications**

The first set of policy implications of this research concerns the increase in business investment in the EUC, which widens the government's scope to obtain income through taxation. It suggests that the government should give special support by creating a supportive investment climate for rural business development given the increasing rural population. This can be done by improving transportation (road) networks and ensuring an efficient power supply, these being central to ensuring the rapid movement of goods to and from the surrounding villages, regions, and international markets.

The second set of policy implications concerns the strengthening of formal institutions, both; private relating to business-specific associations, financial intermediaries like banks, social groups; and the public relating to local government, and institutional arrangements as related to rules and regulations, which will be a creative add-on in facilitating business networking and fostering investment in the two EUCs.

The third set of policy implications stress that public and private-sector support to the crop value-chain is inevitable in the prospect of increased business investment and employment creation in the EUC. This accrues to the registered strong linkage between the crop sector and business development.

The fourth policy implication concerns the attention that supporting business development as the foundation for investment and employment creation in the EUCs will require strategically targeted developmental efforts. This is because each EUC has its independent background format of development and networking structure. Therefore, the process will require creating policies that will accommodate the dynamic and fast changing nature of the EUC economy.

#### **7.4 Contributions to the Existing Body of Knowledge**

The rural-urban literature has rarely shown the kinds and diversity of businesses that develop within EUCs. This study has filled this gap by assessing the broad spectrum of business activities operating in EUCs in rural areas that reflect the latter's rapid rate of transformation. This is evident from the development of specialized businesses like mini-supermarkets, processing and manufacturing businesses and increasing migration from rural villages and other parts of the country. The rural-urban literature rarely focuses on using SNA to assess trading opportunities and constraints, particularly those of business communities in rural areas of the Global South. This study uses SNA to reveal the opportunities for and constraints to business development around EUCs. Similarly, the study has shown the relevance of social networks in influencing business development, investment, and employment creation empirically. This has been achieved mainly through attribute analysis (using degree, betweenness and eigenvector centralities) and relational analysis (strong ties and weak ties) of social networks. The attribute analysis of social networks showed that positions in the general web of business networks are vital in accessing essential products, information, and capital, ultimately affecting business development, and increasing employment creation chances. Likewise, the relational analysis of social networks revealed the immense role of strong and weak ties in influencing business investment decisions and labour recruitment, thus impacting business performance and development.

The study has also contributed to the literature on rural business development and social networks by showing how social network analysis can be employed to understand business development dynamics in the global south. This is also the case through the combined use of geographical and social network information in conducting spatial

analyses of business networks, which reveals the spatial distribution and concentration of businesses and shows how human and physical factors have shaped the nature of business expansion.

The study has also contributed to the debate over the relevance of weak and strong social network ties in impacting labour recruitment/allocations. Both weak and strong ties play essential roles in providing employment-related information and assisting in job searches by labour and businesses. More generally, the study has shown that understanding business developments in urban settlements in rural regions of the global south through SNA reveals the importance of EUCs to growing populations regarding income and employment and government revenue.

## APPENDICES

## Appendix 1: Business survey questionnaire

EUC	<input type="checkbox"/> Ilula <input type="checkbox"/> Madizini	
Street/Sub-village		
GPS latitude, longitude and altitude	Longitude: (X)	Latitude: (Y)

Date				
Start time of interview		Finish time		Total time of interview
No. of interview of the day				
Name interviewer				
Full Name Respondent				

<b>Unique ID of Business</b>	
<p>The unique id is constructed by the first two letters of the township (IL, MA) followed by the unique personal initials of the interviewer (eg. SK) followed by the number of interview by the interviewer within the given township.</p> <p>Eg.  Location: Ilula - id IL  Interviewer: Stephen Nyaki - id SN  Interview number 16 in Ilula  Gives the unique id of: IL SN 16</p>	

<b>EUC business survey</b> <b>Use always codes 88 or 99 for:</b>	Code
Don't know/ no answer	88
Not applicable	99

**Business information****Personal information**

<b>Name</b>	<b>Age</b>	<b>Sex</b>	<b>Marital status</b>	<b>Household size</b>	<b>Years of education</b>	<b>Ethnicity.</b>
1						
2						

<b>Position of the interviewee? 1.owner 2.employ ee 3.manage r</b>	<b>If not the owner/manager, then, who is owning the business (name and sex)</b>		<b>Origin of the business owner? 1.born within the EUC 2.Migrated in to the EUC but From the same district 3 Migrated in to the EUC but From the different district District</b>	<b>If migrated, name the district and region Region</b>		<b>What was the main purpose of migrating to the EUC? 1.Business 2.agriculture 3.job search 4. other (name it)</b>
	Name	Sex		District	Region	

<b>Business ownership status? 1.Private 2.family owned 3.partnership</b>	<b>Who makes decisions concerning the business? (what, how much, and</b>	<b>Year of start up</b>	<b>Business category? 1.service 2.shops and trading 3.workshop 4.manufacturing and processing 5.transport</b>	<b>Specific business activity?</b>	<b>Registration status? 1.registered 2.unregistered  If registered, name the year of</b>

	<i>where to buy/sell</i> Specify their positions				registration	
					<i>Stat us (1 or 2)</i>	<i>Year</i>

Does the business operate on more than one site? 1.Yes 2. No	Location name?	Type of the business?	Year of start up	How did you finance its start-up? 1. Profits from business 2. Own savings 3. Family support 4. Loan from Bank 5. Loan from SACCOS/VICCOBA 6. Local sources- <i>michezo</i>

How would you explain your profit spending out of 100 %	Percentage allocation
Own consumption	
Household consumption	
Buy other stock	
Rent payment	
Loan repayment	



**Information of the previous business involvement**

<b>Have you owned any other business(es) before this? 1.Yes 2.No</b>	<b>If yes, name the business(es)</b>	<b>Year of start up</b>	<b>Is it still operational? 1Yes 2.No</b>	<b>Where was it located?</b>	<b>How did you raise its capital</b>
<b>If closed, what were the reasons for closure?</b>	<b><u>Explain the reasons for closure</u></b>				

<b>Did your parents invested in the same business?</b>	
<b>If not, what activity were they mostly involved in? (explain)</b>	

**Business stationing and mobility**

<b>Status of business housing?</b> 1.room 2.stall (kichanja/genge) 3.no specified structure/office	<b>Place of operation?</b> 1.home same house 2.home different house/room 3. away from home.	<b>Status of the frame/stall</b> 1.privately owned 2.family owned 3.rented from the government/institution 4.rented from private person	<b>If rented, what is the average monthly rent do you pay?</b>
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<b>Do you have to move your goods on closure?</b> 1. Yes 2. No	<b>If yes, why? (explain)</b>	<b>Where do you store them after closure?</b> Home Nearby store Other ( <i>mention</i> )	<b>What means do you use to move your goods</b>

**Business network name generator**

Buying side

Can you name the products for this business that you bought more frequent in the year 2016?

	<b>Products that you bought most frequent?</b>	<b>Do you buy them as inputs for other products or only for resale?</b> 1.Inputs 2.for resale	<b>From whom do you normally order them?</b> Please name at most 8 key people	<b>Type of the seller?</b> 1.Individual trader 2.retailer 3.wholeseller 4.company agent 5. company	<b>How do the products get to you? 1.I travel to buy them, 2.I send someone go on my behalf 3.they are supplied here by the agent/company 4. phone the dealer and sent here by someone I know 4.other means (mention them)</b>
a					
b					
c					
d					
e					
f					
g					

**Is your stock purchase constant throughout the year? 1.Yes 2.No**  
**If not, please identify the seasons when its high and low**

<b>Average volume/size of orders (litres, kg, bags or bundles) per each buy. (for retail shops just ask the average amount spent to purchase each order of stock from the dealer)</b>						<b>How often do you order them? (frequency of stock replacement)</b>	
<i>High season</i>			<i>Low season</i>			<i>High season</i>	<i>Low season</i>
<b>Quantity</b>	Price min	Price max	<b>Quantity</b>	Price min	Price max		
a							
b							
c							
d							
e							
f							
g							
h							

<b>What is their location?</b> <i>(district/street/kitongoji /kijiji)</i>	<b>In or out of EUC</b>	<b>Do you normally purchase cash or on credit?</b>			<b>Has it always been like that?</b>	<b>For how long have you been getting products from them?</b> <i>(length of trade relations)</i>	<b>How did you establish contacts with them?</b> <b>1.through my parents</b> <b>2.non business friends</b> <b>3.business friends</b>
		<b>On cash</b>	<b>On credit</b>	<b>On cash and credit</b>			

								<b>4. others (name</b>
Can you tell the current estimated/assumed value of goods on stock?								

**Selling side**

	<b>Products that you sold most frequent?</b>	<b>Do you sell them as inputs for other products or only for final consumption ? <i>1.Inputs</i> <i>2.final goods</i></b>	<b>To whom did you sell the most? Please name at most 8 key people</b>	<b>Type of the buyer? 1.Individual trader 2.retailer 3.wholeseller 4.company agent 5. company</b>	<b>How do the products get to them? 1.They come to buy them personally, 2.They send someone on their behalf 3.others (mention)</b>
a					
b					
c					
d					

e				
f				
g				
h				
i				

**Are your sales to the named buyers constant throughout the year? 1.Yes 2.No**  
**If not, please identify the seasons when its high and low**

<b>Average volume/size of sales (litres, kg, bags, bundles) per each sell</b>						<b>How often do they buy them? (frequency of stock depletion)</b>	
<i>High season</i>			<i>Low season</i>			<i>High season</i>	<i>Low season</i>
<b>Quantity</b>	Price min	Price max	<b>Quantity</b>	Price min	Price max		
a							
b							
c							

<b>What is their location?</b> <i>(district/street/kitongoji /kijiji)</i>	<b>In or out of EUC</b>	<b>Do you normally sell them on cash or on credit?</b>			<b>Has this always been like this?</b>	<b>For how long have you been selling products to them?</b> <i>(length of trade relations)</i>	<b>How did they come to know you?</b> <b>1.through my parents</b> <b>2.friends</b> <b>3.business</b>
		<b>On cash</b>	<b>On credit</b>	<b>Both on cash and credit</b>			



						<b>6.Others (mention)</b>
a						
b						
c						
d						
e						
f						
<b>Are you a member of any business organisation?</b>  <b>1.Yes</b> <b>2.No</b>	<b>Name them</b>	<b>What are the key responsibilities of the organisation?</b> 1. Togetherness 2. Defend the rights of the member 3. Support each other in good and tough times 4. Credit lending (kukopeshana)	<b>What are the benefits of being a member of the organisation</b>	<b>What are the conditions of entry</b>	<b>Do you pay subscription fee? If Yes, how much and for how long?</b>	

**Does the organisation provide you with necessary market information? *If yes, discuss.***

<b>Do the following explain the challenges that your business face? (operational risks)</b>	<b>1.Yes</b>	<b>2.No</b>
On time delivery of goods		
Suppliers of goods to my business are very unreliable		
Insecurity of products in transit		
Means of transport available are inadequate and inappropriate		
Frequent price fluctuations affect sales volume greatly		

Lack of employees work commitment is a problem	
Low economic growth in Tanzania impact my business	
Theft by employees and customers	
<u>Hawking around the premises and streets reduce number of customers to my business</u>	
<u>Debt collection from my customers is a problem to my business</u>	
<u>Cost of acquiring market information are high</u>	
<u>Lack of business organisation limit our ability to claim rights and growth</u>	
<u>Lack of well organised business groups limit information flow</u>	
<u>Lack of a good mobile phone constraints me to access information at any time</u>	
<b><i>Mention other challenges</i></b>	

**Business financing**

<b>How did you financed your business on start-up?</b>		<b>On average, how much did you had from these sources on start-up?</b> a)0-10,000 b) 11,000-40,000 c) 41,000-70,000 d) 71,000-100,000 e)101,000-200,000 f) 201,000-500,000 g) 500,001-1000,000		<b>What are the common sources of your personal savings? (<i>list them down</i>)</b>	
	<i>Source</i>	<i>Rank which were first</i>			
1	Personal savings				Returns from farm sales
2	From my parents				Formal employment
3	From my relatives				Casual jobs
4	Friends				Michezo and VICCOBA
5	Loan from the bank				Other sources ( <i>list them</i> )
6	Loan from the SACCOS				
7	From social financing groups (VICCOBA)/michezo				
8	Other sources				

<b>What are your current sources of finance?</b>	<i>1.Yes 2.No</i>	<b>Range of capital amount sought</b> a)0-10,000 b) 11,000-40,000 c) 41,000-70,000 d)71,000-100,000 e)101,000-200,000 f) 201,000-500,000 g) 500,001-1000,000	<b>Where do you normally target the money, you sought?</b> 1. raise business capital, 2. increase stock, 3. pay rent, 4. asset purchase, 5. own hh use (school	<b>What is the most important target?</b>

			<b>fees)</b>	
Personal savings				
From my parents				
From my relatives				
Friends				
Loan from the bank				
Loan from the SACCOS				
From social financing groups (VICCOBA)/ <i>michezo</i>				
Other sources ( <i>mention them</i> )				

<b>What are the main challenges that you face in capital expansion?</b>	<b>1. Yes    2. No</b>
Limited ways of funds limit my business expansion	
High interest on loans has hindered access to additional capital	
Collateral/securities needed by the banks are not readily available	
Others ( <i>mention them</i> )	

#### **Business investment in the EUC**

<b>What facilitated you to decide to invest in this EUC?</b> <b>1. My parents</b> <b>2. Other relatives</b> <b>3. Business friends</b> <b>4. Group/associations</b>	<b>Who influenced your choice to invest in this kind of business?</b> <b>1. My parents</b> <b>2. Other relatives</b> <b>3. Business friends</b>
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What tasks do they normally do?	Does this require any skill set?	What is the estimated amount of wage you pay for this labour? 1. 0-20,000 2. 21000-40,000 3. 41,000-60,000 4. 61,000-80,000 5. 81,000-100,000 6. 100,000-150,000 7. 151,000+	Average wage paid (amount that could be paid for unpaid family/relative)	Agreements ( 1. Formally contracted 2. Informally contracted 3. No contracts/any agreements)

Do you normally pay for the following services in your day to day business operations? (if yes how many?)	How many people have you paid for these services in 2016?	Who do you contact in case you need labour power?		How/Where did you get your current employees? (family networks, friends, business fellow)
Transport Bus..... cart.....carrie rs.....		1. for a temporal job	2. for long time job	
Cullies				

Security				
Storage				
Rent				

<b>Are you thinking of employing one more person?</b> <b>1.Yes 2.No</b>	1. This year	2. Next year
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Explain why you do not look forward to employ at least one?

<b>Do the following scenarios affect your employment conditions?</b>	<b>1. Yes 2. No</b>
1.Poaching of your employees by other businesses is a common trend	
2.Employees start demanding high salary which business can hardly meet	
3.Sales turnover is running below projections thus unable to pay the employees	
4.Retention of my/our own trained employees is difficult	
5.Skilled employees are not easily available	
<i>Mention other challenges</i>	
<b>How do you go about solving these challenges? Discuss</b>	

### **Other challenges that pose as a risk on the business**

Have the following being among the issues that pose a risk on your business

<p>Dependence on one line of business may affect my cash flow          Political instability in the ward/country o closure of my business          High levels of theft on the EUC          Frequent power cuts</p>
<p>Natural disasters like drought and floods          Loss of goods due to accidents on transit          Availability of substitute/alternative goods reduces demand for my goods</p>
<p>Presence of many similar business          Location of my business is not conducive for my customers</p>
<p><b>How do you go about solving these challenges? Discuss</b></p>

**Business risk and risk management** (I inserted and asked questions on this part as challenges in the above sections. This is to be discussed)

<p><b>What are the business, managerial/personal shocks that have affected the business in the year?</b>  <i>Theft, poor farm returns, loan repayment failure, customer's failure to repay their credits, seasonality, illness, death of a relative, bankruptcy, job loss</i></p>	<p><b>What did you do to cope with these shocks?</b></p>

## Appendix 2: Interview guides

### 3.1 Interview guide for village leaders and elders

What has been the trend of business development in this EUC since 2005 to 2016?

What has been the role of village government in facilitating business development during this period?

Was there any institutions or groups you worked with to influence business development in this EUC in 2016?

- Name them
- Specify the roles of these institutions or groups and beneficiaries of such support

Are there people from other areas who have established new businesses during this period?

- If yes, what attracted them to start businesses in this village?

Have there been any security concerns like cases of theft among business owners in this EUC?

- If yes what are these concerns?

Are there any other issues that threaten the development of businesses in this EUC?

Has the village authority been involved to settle any disputes involving business people?

- If yes what are these disputes?

What are the risks if any facing the business community in this EUC?

- if Yes, what measures has the village government employed to help the businesses fight them?

### 3.2 Interview guide for financial institutions

#### a. General information

Name of the institution, year of start-up, number of registered businesses/credit seekers on start-up (from 2010 may be), kind of financial services offered to businesses? *Credit sought by businesses?*

#### b. Business trends

Have you observed any changes in the business environment in this EUC since 2005, 2010 to 2016?

- *If Yes, what are the key developments or changes?*

Has this institution played any role to facilitate this development?

- *If yes, how? what were the activities? To which businesses specifically?*

What has been the situation regarding lending to business in this EUC from 2005?

- *How can you compare the situation in 2016 with that of 2010?*

Are there any differences in borrowing abilities of businesses from this EUC?

- *What are these differences? (more specialized vs less specialized?)*
- *Was the situation the same in 2005 and 2010?*

What are the challenges that these variety of businesses reported to face regarding credit accessibility in this EUC?

Are there any sex-based treatments in offering credit in this institution and EUC?

Is there any seasonal influence of crop sector in credit seeking from businesses in this EUC?  
(*What businesses specifically*)

Do businesses report what they wished they could invest on? What are they mostly? *What are the constraints not to invest in them?*

Are there any events that shocked the business situation in the EUC in the year 2016?

### **3.3 Interview guide for business associations and business officers**

#### **1. General information**

Name of the association, year of start-up, list/number of registered businesses, kind of services offered to businesses? Rules of entry/exit?

#### **2. Specific questions**

How can you explain business developments in this EUC? (trends from 2005 to 2016)

- *What has been the situation (trend) regarding businesses in this association?]*

Have there been new businesses registered in this association in 2016?

- *If yes what attracted them to this EUC and this kind of business and in this EUC?*

Are there any relations or activities done with other business groups to support development in this EUC?

- *If yes, what are the groups/associations?*
- *What are the activities that you have involved together?*

Are there any known networks existing between businesses in this group and other businesses and institutions?

- *If yes, name some of the associations/groups?*
- *What role does this association play in facilitating those networks?*

Please identify the aspects shared between them. (products/information)

- *GROUP NETWORK [seek information/share product with other similar OR distinct groups or associations within and outside the EUC?*

Do some businesses in this association have more than one location?

- *If yes, what is the motive of having one business in various locations?*
- *Where are the preferred locations (within or outside the EUC)?*

Do most businesses in this group employ labour?

- *If yes, how many per business at most?*
- *What's the proportion between permanent and the temporary ones?*
- *Do they have formal contracts?*

Are there any know means of getting labour for this kind of businesses?

- If yes what are they? (*any known people?*)

Are there any known risks that businesses in this association mostly face?

- If yes, what are they? [storage, transport, financial, customer, labour??]
- Are some connected to seasonal effects of the local crops?

What do most businesses report to do when faced with these risks and challenges?

**Appendix 3: Summary of issues discovered in the qualitative interviews in Ilula and Madizini EUCs**

Category	Role played and historical perspectives	Business investment attractions	Challenges and risk situations
<p><b>Leaders</b> Ward executives, township executives, sub village executives and chairpersons</p>	<p>Madizini village started emerging in 1960's to 1990's mainly after the installation of electricity and the establishment of Mtibwa sugar factory. The factory attracted migrants from Kilimanjaro, Arusha, Tabora, Dodoma and other parts of the country as most also became sugarcane out growers and produced at least 60% of the sugarcane that was processed annually at the factory.</p> <p>The economic situation changed after privatization of the factory in 1998 as claims piled up from farmers following late payment of sugarcane sold the factory, failing attempts of the factory to fetch already cut sugarcane, understatement of amount of sugar present in the cane. Thus, farmers started pulling off the business in early 2000's</p> <p>Currently the EUC is dependent on agriculture (maize and paddy), employed workers mainly from the factory and businesses.</p> <p>Role played: the village and the ward link incoming business people/investors and people who could provide them with capital, and areas of investment. It also approves exchange agreements between buyers and sellers of assets.</p> <p>The village government hasn't worked with any private/government agency on matters pertaining businesses in the EUC. They just provide emphasis of forming groups so that they can access loans.</p>	<ul style="list-style-type: none"> <li>• Availability of fertile farm land</li> <li>• Agricultural trading, mainly maize, paddy and sunflower.</li> <li>• Presence of financial institutions of all kinds like mostly CRDB and NMB, SACCOS, Vision fund, BRAC, and VICOBA.</li> </ul>	<p>Challenges:</p> <ul style="list-style-type: none"> <li>• Conflicts among businesses especially when a truck of goods of neighboring business obstruct other people's businesses.</li> <li>• Labour issues as some businesses steal workers of other businesses.</li> <li>• Theft issues in 2016 but these cases were settled in 2017 after implementing a community security programme</li> <li>• Lacking township authority limit decision making and the speed of implementing issues.</li> </ul> <p>Risks of business in the EUC</p> <ul style="list-style-type: none"> <li>• Taxes and contributions</li> <li>• High interest rate on loans</li> <li>• Most businesses borrow from multiple financial sources which increase the risk of business failure</li> </ul>

<p style="text-align: center;">Ilula EUC</p>	<p>The development of Ilula is well explained by the development and reinvestments made in the tomato farming and trading. Previously, in 1960's to 1970's maize was a key crop. The strategic location of the town and the presence of Dar to Mbeya Road has facilitated development.</p> <p>Most of products that enter the EUC are finished products from the industry like clothes, construction materials, houseware, and other consumables, those that leave the EUC are crop based products like tomatoes, sunflower and maize.</p> <p>The ward and township have worked with financial institutions like NMB, FINCA, BRAC, GoodLife, Mama Bahati Foundation, Vision Fund, Access Bank, MUCOBA bank and Mazombe SACCOS to facilitate business development in the EUC.</p> <p>Other roles played by ward and township:</p> <ul style="list-style-type: none"> <li>• Facilitate business connections and linkages and education provision to business groups.</li> <li>• Influenced investment of new businesses and banks in the area</li> <li>• Linked community of businesses and other stakeholders with financial sector to provide business information and education/training.</li> <li>• Interpreting directives and policies to businesses</li> <li>• Educating business on laws and regulations that guide smooth business operation</li> </ul>	<ul style="list-style-type: none"> <li>• Availability Residential areas</li> <li>• Availability of banking institutions to facilitate money security</li> <li>• Geographical positioning, where more than 20 to 30 villages and nearby towns get supplies from Ilula.</li> <li>• Good infrastructures (roads), Dar to Mbeya road</li> <li>• High value crop business (Tomato, green pepper)</li> <li>• Educational and health institutions</li> <li>• Installation of electricity fueled business investment.</li> <li>• Resource driven demand to resettle in Ilula</li> <li>• Good security environment and political stability</li> <li>• Business competition</li> </ul>	<ul style="list-style-type: none"> <li>• Water scarcity</li> <li>• Small money circulation (small economy argument)</li> <li>• Business disputes among tomato farmers and brokers</li> <li>• Poor infrastructure in the interior part of the township which curtail market search for tomato farmers and traders</li> <li>• Lack of business networks and information</li> <li>• Climatic changes and declining soil fertility</li> <li>• Dependence on rainfed agriculture</li> <li>• Increase of crop disease outbreak (they have worked with Uyole R.I to deal with them)</li> <li>• One crop dependent economy (tomato) pose a risk</li> <li>• High cost of farm inputs</li> <li>• Many taxes on businesses</li> <li>• Government ban of farming activities within 60 meter radius of the valleys</li> <li>• Lack of mandate power to pass suggestions from the committees of the township council constrain decision making and speed of policy implementation because issues have to be passed by the desk of district executive director</li> </ul>
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<p><b>Business leaders and groups/associations</b></p>	<p>Madizini EUC</p> <p>Madizini local food crop market started in the early 1980's. popular crops sold are maize, beans, onions, potatoes, tomatoes, and groundnuts. (See table 1 below) most traders here use non-bank financial institutions. Few traders who take loans from banks are those who trade beans and potatoes, but banks conditions are tight. The market has provided employment to people who load and unload cargoes.</p> <p>On migration: An average of 650 people enters Madizini every day while about 300 leave Madizini, mostly from and to Morogoro and Dar es salaam. EUC businesses supply products to more than 25 villages around it, some even to Kilindi district in Tanga region.</p> <p>On capital access: large businesses are said to approach the banks like CRDB and NMB while small businesses go for VFT, BRAC, VOCCOBA, SISA, and SACCOS.</p>	<p>Things that attract people are:</p> <ul style="list-style-type: none"> <li>• Farming activity, like cashewnut and mangoes.</li> <li>• Crop trading maize, paddy, and sunflower.</li> <li>• The tick forests</li> <li>• Also, expectations of the revival of sugarcane business might attract people and resuscitate the economy in the future.</li> <li>• Korogwe Dodoma road</li> </ul>	<p>Challenges:</p> <ul style="list-style-type: none"> <li>• Poor market infrastructures</li> <li>• Lack of waste disposal places (dumps) thus they incur costs to transport waste outside the EUC and township</li> </ul> <p>Risks of doing business are:</p> <ul style="list-style-type: none"> <li>• Poor harvests</li> <li>• High estimated taxes</li> <li>• Poor infrastructures</li> </ul>
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Ilula EUC	<p>The role played by business leaders:</p> <ul style="list-style-type: none"> <li>• Providing business education to businesses and farmers</li> <li>• Township business officer have worked with: MUVI-SIDO to provide business training and construction of tomato collection centers; one acre fund who provided farm inputs on credit; SIDO provided education on sunflower processing; MIVARAF who facilitated formation of VICCOBA groups; and SAGCOT.</li> <li>• Crops farmed are tomato, maize, beans, sunflower, Pease, cabbage, groundnuts, green pepper, onions, green banana, avocados, sweet potatoes, round potatoes, wheat, yams, coffee,</li> <li>• Most of the immigrants are from the southern regions of Njombe. Others are from Morogoro and Dodoma.</li> </ul>	<ul style="list-style-type: none"> <li>• Farming of tomato, green pepper, timber and the TASAF market.</li> <li>• Presence of wholesale and retail shops</li> <li>• Central location of the township where people from the hinterland must pass through the town to get to the town.</li> <li>• Financial institutions attract people because of assured security.</li> <li>• Presence of small township council offices</li> <li>• Presence of upgraded Ilula hospital</li> <li>• Development of communication (cellphones)</li> </ul>	<ul style="list-style-type: none"> <li>• Seasonality of tomato production</li> <li>• Dependence on rainfall agriculture</li> <li>• Changes in climatic conditions</li> <li>• Poor infrastructure in the interior farms</li> <li>• Narrow capital sources</li> <li>• Crop diseases (particularly on tomato)</li> <li>• Flooding in the valleys</li> <li>• Government ban of farming activities in the valleys</li> <li>• Many taxes and levies like service levy, fire extinguisher, rent, township contributions, Tanzania Food and Drugs Authority charges</li> <li>• Ignorance of laws and regulations of doing business thus ending up with fines and charges e.g. on vehicle license</li> </ul>
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<p><b>Financial institutions</b></p>	<p>Madizini EUC</p> <p>There are number of financial institutions in Madizini which are CRDB and NMB bank, other non-bank financial institutions are Vision Fund, BRAC, VICCOBA, SISA, and SACCOS. It was discovered that most medium and large businesses approached the banks for loans while micro businesses feared away from them. This is primarily due to lack of necessary conditions for most of small and micro businesses as a business is supposed to have a Taxpayer registration Number, known stable business and immovable collateral for them to get a loan, where small businesses can't meet them. Unlike the banks, other intermediaries like Vision fund and BRAC were established to fund and support small and micro businesses like petty traders and food vendors who need not to meet bank-based conditions. They rather use group-based guarantee program where members of a group vow to repay the loan (mostly less than TZS 900,000 payable within 6 to 8 months) in case one of their group members defaults the loan. Generally, loan categories offered are input loans, crop sale loans, business loans which can be individual (if a loan seeker has a registered business) or group-based loan. They reported that food business, hardware shops and retail shops are more stable in repaying the loans than farm/crop-based loans which have considerable risk.</p> <p>Role played to support business development: Most of these institutions meet with businesses and train them on ways to effectively use the loan and provide business training. In 2016 for instance NMB disburse TZS1.326 billion as loan to businesses, though some are not from Madizini.</p> <p>Banks do not advance loans to sugarcane out growers for the moment because the business is no longer sound and also the collaterals are still held by sugarcane out grower cooperatives because most farmer are still indebted to loans they sought through cooperative SACCOS (es).</p>	<p>Strategic location, feeding villages and surrounding towns North to south road Farming activities of maize and paddy Presence of businesses attracted banks to locate in Madizini also.</p>	<ul style="list-style-type: none"> <li>• Seasonality/cropping seasons where from January to April business velocity is low due to farm activities although many people approach them for loans in this period.</li> <li>• Drought conditions in 2016</li> <li>• Fraud as credit seekers use same security to get loan from various sources or using friend's business to ask for a loan.</li> <li>• Overfinancing due to lack of complete information of a credit seeker.</li> <li>• Fear of bank loans</li> <li>• Lack of collateral securities</li> <li>• Surging number credit seekers in farming season</li> </ul>
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Ilula EUC	<ul style="list-style-type: none"> <li>• Long known financial institutions in Ilula are the Mazombe saccos and the MUCOBA bank.</li> <li>• Required information to get a loan from MUCOBA bank are: have an account with the Bank, have known source of income, have a collateral certified by the TEO or VEO, it can be a purchase or sale agreement. Unlike NMB where loan seeker must have a registered business and an immovable asset like a house/farm, this doesn't apply to MUCOBA which was formed to primarily serve low income earning people and petty/small and micro businesses who are mostly outside the financial system although they also serve large businesses. They don't have account charges like other banks too. They offer group loans using the gamin model of group guarantee. This is the same to what BRAC and SACCOS (es) are also employing to capture micro businesses which are not in the formal sector. Another characteristic of MUCOBA and other non-bank financial intermediaries are more sex specific, like BRAC despite MUCOBA taking mixed sex groups.</li> <li>• Loan seeking and deposit in these financial institutions is also known to be seasonal where more loans are sought between July and October in a farming period and are repaid between April and June during harvest.</li> <li>• MUCOBA bank have worked with MIVAF and MELON to educate entrepreneurs and farmers mainly in the villages.</li> </ul>	<ul style="list-style-type: none"> <li>• Tomato farming and trading</li> <li>• Mbeya to Dar es salaam road</li> <li>• Business growth</li> <li>• They were attracted to invest following the demand of banking services by the locals and the business sector.</li> </ul>	<p>Main risks are:</p> <ul style="list-style-type: none"> <li>• Seasonality of the agriculture</li> <li>• Homogeneous business influencing the economy (tomato)</li> <li>• Poor market linkages of businesses</li> <li>• High informality of the sector</li> </ul> <p>Some of the shocking events:</p> <ul style="list-style-type: none"> <li>• In 2013/14 Mtera was closed by the government thus farmers in the valleys produced nothing as a result banks had large unpaid loans. They had to restructure the loans to be paid later.</li> <li>• Climatic changes in 2016/17 have reversed farming periods and resulted to a tragic decline on tomato prices and market</li> </ul>
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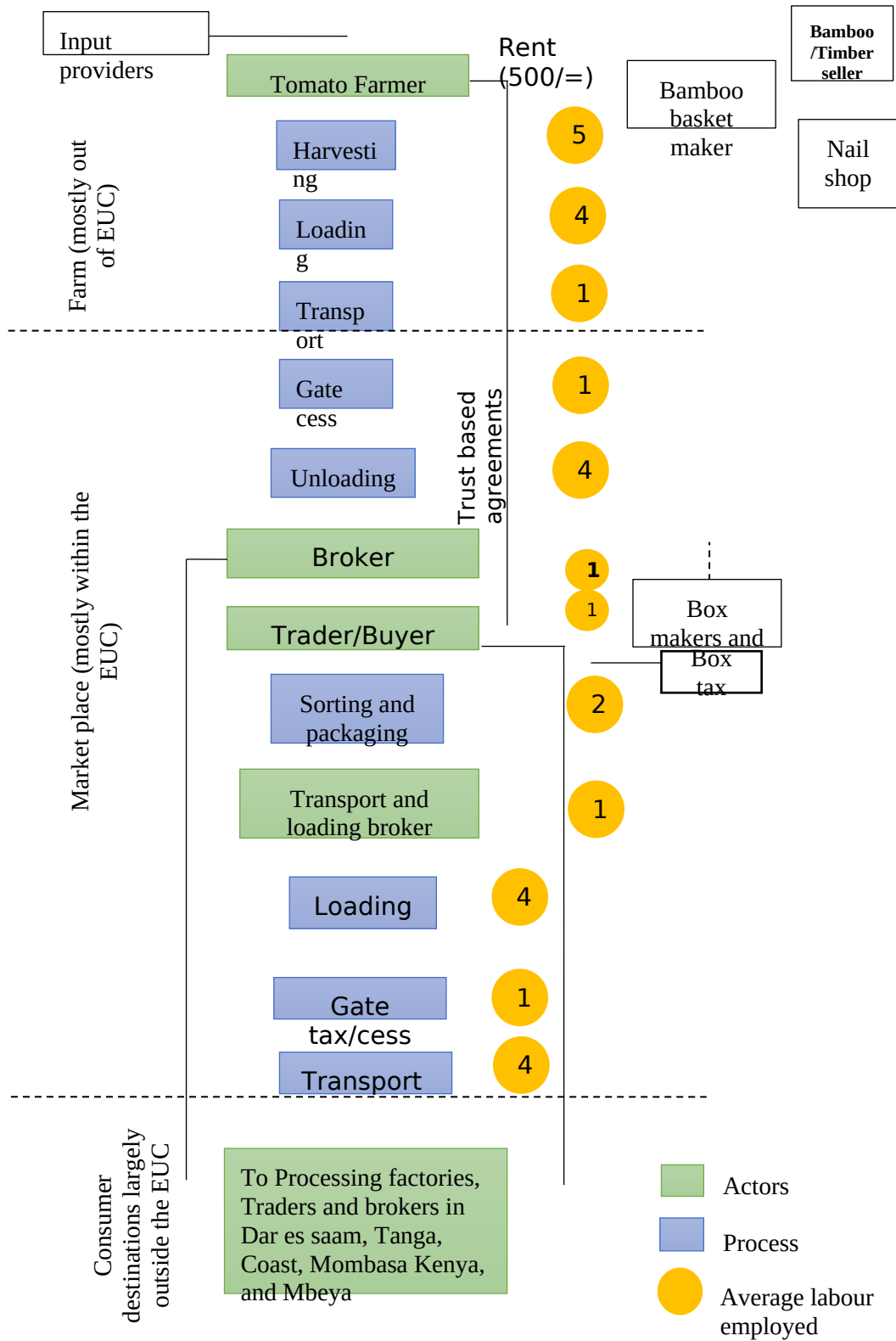
<b>Elders</b>	<p>Supported by the history, Madizini town grew mainly following the installation of electricity in 1980 and investment of the old and new sugar factory.</p> <p>In 1970's there were only two shops know which were owned by cooperatives.</p> <p>In 1982 the National Bank of Commerce stimulated business development by advancing loans to people who started buying land and investing in sugarcane farming and proceeds were reinvested in paddy production.</p> <p>The business situation started deteriorating in early 2000 following understatement of the proportion of sugar present in the canes by the factors, delaying to almost a year the payment of sugarcane sales, and fraud on weighing the harvests. Farmers quitted from the business, thus rendering the decline in out growers sugarcane harvests from 250,000 tons of cane per year in 1999 to 30,000 tons in 2016/2017. This is claimed to be a deliberate attempt by Seif to increase estate own production and suppress OG production.</p>	<p>Electricity installation Sugarcane farming and the Mtibwa sugar factory Farming of maize, paddy, sunflower and sesame.</p>	<p>Poor infrastructure facilities Mtibwa factory inefficiencies Seasonality of in crop farming</p>
	<ul style="list-style-type: none"> <li>• From 1960's to 1970's the locals of Ilula depended on maize and beans farming and trading (thus ilula sokoni). In 1985 tomato became a key food and cash crop. The growth of Dar es salaam tomato market tomato business started thriving. In 1990's investment of sunflower processing plant in town influenced sunflower farming too.</li> <li>• Developments in 1990 to 2000's are growth of businesses, processing machines, intensified and extensified tomato farming using tractors.</li> <li>• Other emergent sectors are bean farming, vegetable farming, sugarcane farming, garlic and onions farming which was done mainly in the hilly areas</li> </ul>	<p>Electricity influenced investment of sunflower processing machines/plants, provided employment in welding, and battery charging.</p>	<p>Small farmers cannot access loans easily due to high loans conditionalities and lack of collaterals. They are supported by subsidized fertilizer, but they cannot buy other necessary inputs Water scarcity issue Residential plan is poor Unassured tomato market Climate change and high dependence of rainfed agriculture Government ban on farming in the valleys.</p>

<b>Tanzania Revenue Authority</b>	
<b>Others</b> <i>Mtibwa factory production manager</i>	<p>I obtained production data and human resource data from Mtibwa sugar factory which are all showing the decline in the annual cane harvest which also correlate with the decline of man power employed at the factory since 1990. From figure 1 and 2 display the declining trend of total cane produced from 2006 which might be analogous with the decline of cane produced by Out Growers (OG). Moreover, the decline in the total cane crushed per year can theoretically explain the constant decline in the permanent labour from the factory from 1990 to 2016. These figures support the information on the claims made by Madizini residents.</p> <p>In an informal interview with the Mtibwa factors production manager, it seems that the owner made a deliberate attempt to decrease the number of out growers (OG) so that estate production could rise to feed the factory as it was said that OG sold at least 50% to 60% of cane to the factory in 2000's</p>

**Appendix 4: Madizini food crops supply variations and their sources**

<b>Crop</b>	<b>Months of crop availability</b>	<b>From</b>
Beans	December to February	Bukoba
	February to May	Mbeya and sumbawanga
	July	Kibati muscat, pemba and Mgeta (NYANDILA crop market)
Maize	January to July	Sumbawanga and Kilosa
	July to December	Turiani, kilindi
Tomatoes	Jan to jun	Gairo, igunga, Dodoma,
	10-11	Hakama
	9-11	Turiani
Onions	May to January	Iringa, lumuma in Kilosa
	February to May	Singida
Groundnuts	June to December only.	Dodoma, mpwapwa, Iringa,
	Other months, supply is from the stores	singida, and Mbeya
Round potatoes	January to August	Jombe
	January to December	Mbeya and

**Appendix 5: Diagrammatic summary of tomato flow and employment created in Ilula**



Appendix 6 above summarises the flow of tomato business which is a driving force to the development of Ilula EUC. This is by identifying actors involve (in green), activities (in blue) and employment made (in yellow). The figure is split in to three parts or phases of nonfarm process, marketing and off EUC processes. In the nonfarm part, activities include all farm activities like input provision, farming, weeding and harvesting, loading, and transporting. In this phase, a farmer has to employ labour for farm activities and rent/purchase harvesting tool like the bamboo basket from the craftsman who also purchase them from different actors where the demand created by the farmer has provided employment to them, for instance bamboo farmers, nail shop and timber traders. After harvesting a farmer can either entrust his/her produce to brokers who will bargain on their behalf or sell it directly to traders within or outside the EUC. Tomatoes can be sold at the farm or at the marketplace. To reach the marketplace where they are mostly sold, the farmer has to pay for loading, transporting, gate cess, and unloading. In these processes, at least 15 people are employed. After it reaches the market and sold to a trader, tomatoes are sorted and arranged well into the boxes or bamboo baskets. The trader has to therefore pay for box tax at the marker, consult a transport and loading broker, load, pay for tomato tax when exiting the market. This marks the end of the second phase of marketing. After leaving the market, tomatoes are transported to other actors (traders, brokers and consumers) outside the EUC, mostly in Dar es Salaam, Tanga, and Mombasa Kenya. To this stage about 15 other people are employed.

**Appendix 6: Correlation matrix of social network and businesses and business owner characteristics**

	Eigenvector centrality	Weighted Degree centrality	Age of respondent	Years of education	Total Stock	Business Turnover	Total Employment
Thula	Eigenvector centrality	1					
	Weighted Degree centrality	0.8094*	1				
		(0)					
	Age of respondent	0.0106	0.1966*	1			
		(0.8268)	(0)				
	Years of education	-0.0308	-0.0043	-0.0895	1		
		(0.5253)	(0.9295)	(0.0647)			
Total Stock	0.6157*	0.6427*	0.1230*	-0.0346	1		
	(0)	(0)	(0.0178)	(0.5074)			
Business Turnover	0.1452*	0.1692*	0.1746*	-0.0466	0.0853	1	
	(0.0029)	(0.0005)	(0.0003)	(0.3422)	(0.1042)		
Total Employment	0.1259*	0.2226*	0.2161*	0.0963*	0.1149*	0.4127*	1
	(0.0092)	(0)	(0)	(0.0469)	(0.0271)	(0)	
Madizini	Eigenvector centrality	1					
	Weighted Degree centrality	0.7855*	1				
		(0)					
	Age of respondent	0.0326	0.1901*	1			
		(0.5836)	(0.0013)				
	Years of education	0.0498	0.008	-0.2907*	1		
		(0.4035)	(0.8929)	(0)			
Total Stock	0.2751*	0.3474*	0.0953	0.0525	1		
	(0)	0	(0.1122)	(0.3833)			
Business Turnover	0.0708	0.1393*	0.0858	-0.0572	0.0427	1	
	(0.2497)	0.023	(0.1632)	(0.3535)	(0.4904)		
Total Employment	0.1168*	0.2782*	0.2439*	-0.0688	0.0601	0.1864*	1
	(0.0488)	(0)	(0)	(0.2477)	(0.3168)	(0.0023)	

Note: significance levels in parentheses. \* Significant at 5 percent level

**Appendix 7: Ethnic groups from the EUCs**

<b>Ethnic group</b>	<b>Ilula EUC</b>		<b>Madizini EUC</b>	
	<b>n</b>	<b>%</b>	<b>n</b>	<b>%</b>
Hehe	330	71.9	12	4.1
Bena	26	5.7	8	2.7
Kinga	23	5.0	4	1.4
Zaramo	6	1.1	2	0.7
Muha	2	0.4	11	3.7
Luguru	6	1.3	12	4.1
Sukuma	7	1.5	15	5.1
Zigua	2	0.4	42	14.2
Nyakyusa	15	3.3	5	1.7
Haya	1	0.2	5	1.7
Musungwa	1	0.2	0	
Chagga	9	2.0	37	12.5
Nyaturu	2	0.4	5	1.7
Digo	4	0.9	1	0.3
Pare	5	1.1	43	14.5
Gogo	2	0.4	9	3.0
Ngoni	3	0.7	8	2.7
Arab	6	1.3	0	
Msagala	1	0.2	1	0.3
Wanji	1	0.2	0	
Makua	1	0.2	1	0.3
Sambaa	2	0.4	3	1.0
Mdali	1	0.2	0	
Bondei	1	0.2	0	
Kurya	0		3	1.0
Jita	0		3	1.0
Meru	0		1	0.3
Mkwere	0		4	1.4
Mpemba	0		2	0.7
Mnyiramba	0		3	1.0
Fipa	0		6	2.0
Pogoro	0		7	2.4
Nyamwezi	0		9	3.0
Ngazija	0		1	0.3
Iraq	0		1	0.3
Kaguru	0		11	3.7
Ndamba	0		2	0.7

Mambwa	0	1	0.3
Maasai	0	3	1.0
Pangwa	0	1	0.3
Nyakaramba	0	1	0.3
Gunga	0	1	0.3
Manyema	0	1	0.3
Nguu	0	3	1.0
Rangi	0	4	1.4
Kisia	0	1	0.3
Ngindo	0	2	0.7
Nyamwanga	0	1	0.3

### Appendix 8: Purchase and selling networks in Ilula and Madizini EUCs

#### A: The structure of purchase network in Ilula and Madizini EUCs

Location	Ilula		Madizini	
	Within EUC	Outside EUC	Within EUC	Outside EUC
<b>Proportion</b>	70 %	30 %	54 %	46 %
<b>Goods bought</b>	<ul style="list-style-type: none"> <li>• Mostly Tomatoes and all other goods traded by the local businesses</li> </ul>	<ul style="list-style-type: none"> <li>• Tomatoes and other farm produce like onions, green pepper, potatoes sunflower, and maize.</li> <li>• Household consumables</li> <li>• Wood/timber,</li> <li>• Hardware (construction inputs, electronics)</li> <li>• Clothing and footwear, Motor vehicles</li> </ul>	<ul style="list-style-type: none"> <li>• Mostly rice and all goods traded by the local businesses and businesses from the surrounding villages</li> </ul>	<ul style="list-style-type: none"> <li>• Household consumables</li> <li>• Farm produce like rice, onions, beans, meat, and vegetables</li> <li>• Clothing and footwear</li> <li>• Hardware e.g. construction inputs, electronics</li> <li>• Motor vehicles</li> </ul>
<b>Sources within Township</b>		<ul style="list-style-type: none"> <li>• Ikuvala, Mlafu, Vitono, Kipaduka, Igunga villages</li> </ul>		<ul style="list-style-type: none"> <li>• Mtibwa ward</li> </ul>
<b>Sources</b>		<ul style="list-style-type: none"> <li>• Isoliwaya, Msimike,</li> </ul>		<ul style="list-style-type: none"> <li>• Dibigwa, Dihongoya,</li> </ul>

<b>within district</b>	Kiheka, Ifua, Dunguya villages, and Image ward	Lungo, Muhonda, Turiani, Mkombani, Kwa Dole villages
<b>Sources within the region</b>	•Iringa town, Mafinga, Dabaga, and Pawaga	•Morogoro town, Mgeta ward
<b>Sources within the country</b>	•Dar Es Salaam, Arusha, Morogoro, Pwani, Tanga regions	•Dar Es Salaam, Singida, Tanga, Mbeya, Iringa, Dodoma, Kagera, Arusha regions
<b>Sources outside the country</b>	•China	•China

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Source: Authors' fieldwork

**B: The structure of selling network in Ilula and Madizini EUCs**

Location	Ilula		Madizini	
	Within EUC	Outside EUC	Within EUC	Outside EUC
<b>Proportions</b>	80 %	20%	86%	14%
<b>Product sold</b>	<ul style="list-style-type: none"> <li>•Mostly goods traded by local wholesale and retail stores for household consumption</li> </ul>	<ul style="list-style-type: none"> <li>•Mainly tomatoes (84%) and all kinds of goods bought by businesses from surrounding villages</li> </ul>	<ul style="list-style-type: none"> <li>•Mostly goods traded by local wholesale and retail stores for household consumption</li> </ul>	<ul style="list-style-type: none"> <li>•Mainly rice and household items bought by businesses from surrounding villages</li> </ul>
<b>Markets within Township</b>		<ul style="list-style-type: none"> <li>•Mlafu, Mazombe Vitono wards</li> </ul>		<ul style="list-style-type: none"> <li>•Mtibwa ward</li> </ul>
<b>Markets within district</b>		<ul style="list-style-type: none"> <li>•Kololo distric, Image ward, Nyalumbu ward</li> </ul>		<ul style="list-style-type: none"> <li>•Mvomero, Turiani, Lusanga, Kanga, Pemba, Kidudwe, Kibati, Mhonda, Magulu, Bwaga, Bwagala, Magulu, Ndavindavi, Mziha, and Songambebe villages</li> </ul>
<b>Markets within the region</b>				<ul style="list-style-type: none"> <li>•Morogoro town</li> </ul>
<b>Markets within the country</b>		<ul style="list-style-type: none"> <li>•Dar Es Salaam, Morogoro, Dodoma, Tanga, Kilimanjaro, Arusha and Pwani</li> </ul>		<ul style="list-style-type: none"> <li>•Dar Es Salaam, Arusha, Tanga, Kilimanjaro, Mbeya, Singida regions, and Zanzibar</li> </ul>
<b>Markets outside the country</b>		<ul style="list-style-type: none"> <li>•Kenya and Uganda</li> </ul>		

Source: Authors' fieldwork