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The Growth of Micro and Small, Cluster Based Furniture Manufacturing Firms and their Implications for Poverty Reduction in Tanzania

By Edwin Paul Mhede

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P.O. Box 33223, Dar es Salaam, Tanzania
157 Mgombani Steet, Regent Estate
Tel: +255 (0) 22 2700083 / 2772556
Fax: +255 (0) 22 2775738
Email: repoa@repoa.or.tz
Website: www.repoa.or.tz

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Abbreviations

ATPS	African Technology Policy Studies
CPI	Consumer Price Index
CTI	Confederation of Tanzania Industries
DTI	Department of Trade and Industry
FASID	Foundation for Advanced Studies in International Development
GDP	Gross Domestic Product
GRIPS	National Graduate Institute for Policy Studies
HCI	Head Count Index
IIDSMP	Integrated Industrial Development Strategy and Master Plan 2025
MIT	Ministry of Industry and Trade
MITM	Ministry of Industry, Trade, and Marketing
MSMEs	Micro and Small Manufacturing Enterprises
MVA	Manufacturing Value Added
NBS	National Bureau of Statistics
NCAER	National Council of Applied Economic Research
NSGRP II	National Strategy for Growth and Poverty Reduction, Phase Two
PCT	Product Cycle Theory
PGI	Poverty Gap Index
REPOA	Research on Poverty Alleviation
SAPs	Structural Adjustment Programmes
SIDP	Sustainable Industrial Development Policy (1996-2020)
SMEDP	Micro, Small, and Medium Enterprises Development Policy
SMEs	Micro, Small, and Medium Enterprises
SPSS 18	Statistical Package for the Social Sciences, version 18
TFP	Total Factor Productivity
TZS	Tanzania Shillings
UNIDO	United Nations Industrial Development Organisation
URT	United Republic of Tanzania
WBI	World Bank Institute

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To my wife Rachel

and

our beloved sons Edward and Edson.

Abstract

Micro, small, and medium manufacturing enterprises (MSMEs) offer good examples of firm clustering and incipient entry points for industrial development in Tanzania. This study analyses the growth of cluster-based, micro and small furniture-manufacturing firms located in the Keko, Buguruni-Malapa, and Mbezi Beach kwa Komba industrial clusters. The results of quantitative growth indicators show that on average the furniture manufacturing firms in the studied clusters grew, and real payments to the firm owners and workers grew as well.

The analysis shows that real values of payments to the firm owners and workers have positive implications for poverty reduction since the values placed the firm owners and workers above the basic and food poverty lines for Tanzania in general and for Dar es Salaam in particular. Firm owners as well as workers believe that the income earned as a result of firm growth helped to reduce poverty. They note that the income generated from firm growth helps to reduce poverty by increasing their spending power, thereby increasing their demand for other goods and services in the economy through the multiplier effect.

Consistent with the literature on agglomeration economics, which describes the costs and benefits of firm clustering, the current study reveals that firms benefit from clustering, and firm owners are aware of the importance of being in clusters. Moreover, firm owners feel that they are better off in clusters when compared to the quality of those scattered array of firms that operate alone. Inter-firm sales, purchases of raw materials and inputs, subcontracting, lending machinery, marketing of furniture products, and training workers through apprenticeships were all found to be the major methods by which firms interact with one another. The firm owners acknowledge the clusters as being catalysts for firm growth because the arrangements allow firms to cooperate with each other.

This finding suggests that the degree of cooperation among entrepreneurs in industrial clusters is critical for the development of these industrial clusters. While there is huge growth potential for those furniture manufacturing firms that are organised in clusters, insufficient business skills, poor infrastructure within the industrial clusters, technological backwardness, and other challenges constrain the current growth of furniture manufacturing firms. These obstacles to growth need to be addressed strategically.

1 Introduction

1.1 Background

Since independence, Tanzania's development policies have focused on achieving the twin objectives of increasing economic growth and alleviating poverty. In more recent years, from 1999 through 2010, the country has achieved an average annual GDP growth rate of at least 6.6 per cent. However, despite these significant advances in economic growth, as well as the government's strong commitments to pro-poor policies during the same period, the country has achieved only marginal strides in reducing poverty. Widespread poverty is still a major challenge for the Tanzanian economy. For example, examining both food and basic needs poverty lines for 2001 and 2007 reveals that the poverty headcount ratio dropped by a mere 2.1 percentage points – from 18.7 per cent to 16.6 per cent for the food poverty line and from 35.7 per cent to 33.6 per cent for the basic needs poverty line. The decline in poverty over the period from of 1991 to 2001 was larger; both food and basic needs poverty levels declined by 2.9 percentage points (see Table 1). This raises questions over what sources of economic growth are required for poverty alleviation, and the current growth pattern encourages policy makers and researchers to rethink about the quality of growth that is likely to be effective in reducing poverty in the Tanzanian context.

Table 1: Changes in Poverty Incidence in Tanzania (per cent)

	Food Poverty Line			Basic Needs Poverty Line		
	1991	2001	2007	1991	2001	2007
Dar es Salaam	13.6	7.5	7.4	28.1	17.6	16.4
Other Urban areas	15.0	13.2	12.9	28.7	25.8	24.1
Rural areas	23.1	20.4	18.4	40.8	38.7	37.6
Tanzania Mainland	21.6	18.7	16.6	38.6	35.7	33.6

Source: Household Budget Survey 2007 (National Bureau of Statistics, 2009)

The National Development Vision 2025 recognises the leading role played by industrial sector growth in wealth creation through the process of transforming the nation from a weather-dependent agrarian economy into a modern and semi-industrialised one by 2025. Cognisant of the critical role that the industrial sector plays in economic transformation, the Integrated Industrial Development Strategy and Master Plan (IIDSMP) was recently developed as a way to strategise for the Sustainable Industrial Development Policy (SIDP 1996-2020), and clearly indicates the importance of growth-oriented, cluster-based industrial development in Tanzania (United Republic of Tanzania, 2010). [1] Similarly, the Small and Medium Enterprise Development Policy (2002), the National Strategy for Growth and Poverty Reduction (NSGRP II), and the Five-Year National Development Plan (2011-2015) have prioritised the manufacturing sector.[2] These policies have also indicated that the growth of income from non-farm activities, many of which are labour-intensive, cluster-based manufacturing firms of micro, small, and medium sizes, is one of the key pro-poor growth strategies for achieving the country's development targets.

1 Otsuka and Sonobe (2006) define an industrial cluster as a geographical concentration of enterprises that produce similar and closely related products (e.g., assemblers and parts suppliers).

2 Sometimes the words "manufacturing" and "industry" invite confusion. In this paper, we follow the widely accepted international definition as defined by the International Standard Industrial Classification (ISIC) Code Rev.3. Here, the term "industry" is a generic term that refers to ISIC Code (C) mining, (D) manufacturing, (E) utility service, and (F) construction, while "manufacturing" means ISIC Code (D) manufacturing alone.

In light of the estimates showing that some 850,000 new job seekers enter into the labour market every year, job creation has become a flagship policy for the government. Pressed by this increase in labour supply, the question then focuses on how the economy can absorb the increasing number of job seekers in a way that reduces widespread poverty. Responses to this question include a broad range of strategic actions designed to promote the growth of pro-poor, labour-intensive production sectors. By synthesising the conventional wisdom in development economics, which has been marked by recent advancements in various fields of economics (e.g., theories of endogenous growth and agglomeration economies), the cluster-based, labour-intensive manufacturing sector is expected to absorb the rising supply of labour. Within this context, it is fundamentally imperative to analyse the growth of cluster-based, micro, small, and medium manufacturing enterprises (SMEs), and explore the implications that growth has for poverty reduction among firm owners and workers in Tanzania. However, growth analysis of all cluster-based manufacturing sub-sectors of the economy would be difficult to manage given the available resources for this study. Therefore, the current study focuses on the analysis of firm growth by examining a selection of cluster-based furniture manufacturers.

1.2 The Study

Cluster-based industrial growth is recognised as one of the most essential steps for achieving pro-poor sustainable development (Altenburg and Meyer, 1999; Giuliani et al., 2005). Therefore, industries that provide enhanced employment opportunities for the poor need to be developed and supported. Particularly important for employment generation are industrial clusters that consist of a large number of labour-intensive sub-sectors (e.g., agro-processing, textile production, metalwork, vehicle repairs, the manufacture of garments, leather and leather products, and furniture, etc.). In terms of generating employment, these clusters are by far the most important manufacturing activities in Tanzania, and studies have shown that they have an immense capacity to produce employment opportunities for the poor (Humphrey and Schmitz, 1996; Kweka, 2006). Nadvi and Barrientos (2004) argue that firm growth in the industrial clusters is directly related to poverty reduction by offering employment, incomes, and wellbeing to the working poor, and indirectly related by having broader impacts on the local economy.

According to empirical case studies conducted by Otsuka and Sonobe (2006), evidence suggests that clustering has been related to successful industrial development in the past and in the present, much of which can be construed as having benefits for poverty reduction (e.g., Silicon Valley, Bangalore, Dhaka, Northern Italy, the entire island of Taiwan, Wenzhou, and many other regions in China). Motivated by successful industrial development cases, Tanzania's new industrialisation strategy now focuses on the promotion of cluster-based industrial development with due attention to micro, small, and medium enterprises (United Republic of Tanzania, 2010). This is because SMEs are a significant component of the country's industrial sector (Table 2), and they constitute the bulk of industrial employment as they are relatively more labour-intensive and less capital-intensive (Mtatifikolo, 1998). For example, studies conducted between the mid-1990s and early 2000s reveal that the real output of the four manufacturing sub-sectors grew by 13.8 per cent. The wood and furniture sub-sector recorded the highest growth, with a real output of 29.8 per cent. Real value added in the selected manufacturing industries grew by 22.6 per cent, with the wood and furniture industry having the highest value-added growth at 38 per cent followed by the textile and garment industry's 34 per cent growth (Musonda, Adeya, and Abiola, 2008).

Table 2: Number and Percentage of Manufacturing Firms by Size of Workforce

Number of Workers	1-2	3-4	5-9	10-19	20-49	50-99	100-499	500+	Total
Manufacturers	15,066	6,921	2,216	411	215	62	70	18	24,979
Percentage	60.3	27.7	8.9	1.6	0.8	0.2	0.3	0.1	100
Definition in the SMEDP	Micro-Scale Manufacturers		Small-Scale Manufacturers			Medium-Scale Manufacturers	Large-Scale Manufacturers		

Source: National Bureau of Statistics, Business Survey 2007-08.

Cluster-based, micro and small-sized furniture-manufacturing firms of informal nature dominate the furniture sub-sector of Tanzania. The majority of them are concentrated within informal clusters. They function with a highly limited number of regular employees, mostly utilise hand tools, and operate along main roads. While some are formally registered, many medium-scale firms are informally organised as micro-enterprises that are unregulated by the tax authorities. The industry as a whole comprises of about half a dozen long-established, indigenously owned small-to medium-sized ventures, and hundreds of indigenous firms that entered the industry in the 1980s, apparently with an accelerated growth of new firms since the 1986 initiation of structural adjustment programmes (SAPs) in Tanzania. Although the material limitations facing them are significant, manufacturers are quite creative in developing new furniture designs. They are able to carry out imitative innovations of different styles observed in foreign furniture catalogues or in the shops of the local retailers. Moreover, the industry is rich in cluster-based social capital because many producers utilise dense and extensive business networks to acquire raw materials, learn about new and emerging furniture products and production processes, and track market trends (Murphy, 2002; 2006).

1.3 Problem Statement

Despite the progress made in policy research on industrial clusters, efforts to analyse the growth of clustered manufacturing firms and study the implications this growth has for poverty reduction have been relatively absent throughout much of the literature on clusters (Nadvi and Barrientos, 2004; Akoten, 2007). Exceptions are Murphy (2007), who analysed the socio-spatial factors and the urban environment when studying the challenges of upgrading furniture clusters in Mwanza, Diyamett (2009) and Komba and Diyamett (2008), who engaged in a case study on the development of cluster initiatives, and Kristiansen and Mbwambo (2003), who focused on the construction of innovation systems in African settings and explored how clustering and social networks in the garment sector were related to the cottage industry's survival. The focus of the research here is on the potential economic gains from clustering and the ways in which clustering enhances growth. The assumption is that such growth translates into rising levels of employment and income and improvements in the living conditions and standards faced by firm owners and workers. Yet, for the most part, such issues are rarely studied empirically. Other cluster studies in Tanzania include Musonda (2007), who analysed whether clustered-based, micro- and small-scale enterprises can generate industrial dynamism in Tanzania, and Musonda, Adeya, and Abiola (2008), who studied knowledge, technology, and cluster-based growth by using Mwenge handcraft and Keko furniture clusters as case studies. Nevertheless, even these studies could not establish a link between firm growth and poverty reduction.

While new manufacturing growth strategies that prioritise firm growth are needed, a deliberate revolution in the Tanzanian manufacturing sector is urgently required. The revolution should be centred on identifying specific manufacturing development needs and opportunities and on investing into areas where the greatest impact can be achieved. This process can be facilitated by first identifying and analysing the growth of firms that adopt a cluster-based approach and then using that analysis as a steppingstone for understanding the growth dynamics and linkages that facilitate firm growth and at the same time contribute to poverty reduction among firm owners and workers.

1.4 Significance of the Research

Throughout the last several decades, Tanzania has been tirelessly struggling to realise pro-poor development through growth in the manufacturing sector. However, a knowledge gap exists regarding appropriate approaches for sector growth with respect to industrial cluster initiatives. The more recent waves of randomised experiments demonstrate that the majority of policy makers in Tanzania have inadequate knowledge about standard approaches and basic management practices towards sector growth policies and strategies that are beneficial for the country's poor (Sonobe, Mhede, and Otsuka, 2011). Consequently, critical issues like industrial clustering in relation to firm growth and poverty implications among firm owners and workers are not yet adequately addressed. Insufficient empirical evidence on the link between clustering and firm growth is said to have greatly contributed to industrial policies and strategies that fail to concretely address the requirements specific to industry sub-sectors. Sub-sector and locational differences between industrial clusters are apparently not taken into consideration when designing programmes for pro-poor manufacturing growth. This is most likely due to the shortage of information regarding the positive externalities that clustering creates for sector growth and poverty reduction.

This study aims at bridging the existing knowledge gap. The findings are intended to inform policy makers and other industrial development stakeholders about the link between clustering and firm growth. Indeed, the research seeks to contribute to improving industrial policies and strategies that accelerate firm growth and to analyse the implication that clustering has for poverty reduction among firm owners and workers at cluster levels. The paper also contributes to the literature on agglomeration economics by exploring the role of industrial clusters in supporting firm growth in general, and the industrial development of Tanzania in particular.

1.5 Research Objective

The overall objective of this study is to explore the growth of micro and small furniture-manufacturing firms in the industrial clusters and to analyse the implications that this growth has for poverty reduction among firm owners and workers. The specific objectives are four fold:

(i) To identify the socioeconomic characteristics that prevail among the owners of furniture firms and their workers and to identify how these characteristics influence firm growth within the industrial clusters;

(ii) To analyse growth dynamics of furniture manufacturing firms in the industrial clusters;

(iii) To indentify inter-firm relationship mechanisms and explain the ways in which these mechanisms support or weaken the growth of clustered furniture-manufacturing firms;

(iv) To identify challenges constraining the growth of furniture firms within the industrial clusters.

1.6 Organisation of the Report

The rest of the paper is organised as follows: Section 2 presents a framework consisting of two strands of literature – i.e., a theoretical review and empirical studies of cluster cases. Section 3 outlines the research questions and the significance of the research. Section 4 outlines the methodological considerations of the study, including discussions around the conceptual framework, the approaches used for the sampling procedures, the data collection, and the analysis. Finally, section 5 concludes the study by summarising key research findings and drawing policy implications based on the study's findings.

2 Literature Review

2.1 Theoretical Review

2.1.1 Firm Growth and Poverty Reduction

The theory of firm growth is used to describe a development process that spans either from micro to small and from small to large or from weak to strong. However, development is about more than just the growth of quantitative indicators like manufacturing value added, employment size, etc. Development is also about the generation stage where the firm comes into being and the periodic processes involved in each stage. At the same time, the growth of the firm itself is a complex adjustment process that is different from the simple extension of scale. Growth necessitates balancing the various intra-firm relations and the firm's relations with external actors and organisations and consists of moving from imbalanced to balanced growth.[3] Therefore, firm growth implies a development process where a firm manages to maintain balanced growth in total performance (including, but not limited to real values of capital investment, output, sales volume, profits, and asset growth) or keeps realising large enhancements of total factor productivity (TFP)[4] performance (Sun, 2004).

Hayami and Godo (2005) define poverty as the status of a person whose material well-being is below a certain minimum level deemed reasonable by the standards of the society to which s/he belongs. The level of well-being in this definition is commonly conceptualised as "the standard of living", which is measured in economic analysis by the aggregate market value of private goods and services consumed by the person (usually not including public goods). Following this approach, poverty in a society is measured in terms of the number of persons whose living standards are below this minimum level as well as their distances from the minimum level. Other approaches are also possible. For example, it is reasonable to define poverty as the status of a person who is deprived of opportunities to realise his or her human potential, where opportunities are derived from public services like education and health care (Sen, 1999). Yet, because of the difficulty in measuring the extent and scope of the lack of opportunities, economists have had to use the standard of living approach for empirically analysing most cases of poverty.

Economic growth is a fundamental requirement for poverty reduction. In Hayami and Godo's (2005) explanation of poverty, estimations of linear regression equations for the head count index (HCI) and poverty gap index (PGI) revealed negative coefficients, indicating that poverty on average tends to decrease as per capita income increases. More specifically, the prevalence of poverty in society (as measured by HCI) and the degree of poverty among all people (as measured by PGI) tend to

3 According to Temple (2008), balanced growth has at least two different meanings in economics. In macroeconomics, balanced growth occurs when output and the capital stock grow at the same rate. This meaning is consistent with Kaldor's stylised facts that, on the whole, the growth rate of output, the capital-output ratio, the real interest rate, and the labour share of income remain broadly constant over time (Kaldor, 1957). This growth path can rationalise the long-run stability of real interest rates, but its existence requires strong assumptions. In development economics, however, balanced growth refers to the simultaneous, coordinated expansion of several sectors – a classic feature of single-sector, neoclassical growth models. The usual arguments for this growth pattern rely on scale economies, so that the productivity and profitability of individual firms may depend on market size. In the current study, the later definition is adopted since it focuses on firm-level growth.

4 Total-factor productivity (TFP) is a variable which accounts for effects in total output not caused by inputs. If all inputs are accounted for, then TFP can be taken as a measure of a firm's long-term technological change or technological dynamism. In the Cobb-Douglass production function (i.e., $Y = AK^{\alpha}L^{\beta}$), total output (Y) is a function of total-factor productivity (A), capital input (K), labour input (L), and the two inputs' respective shares of output (α and β are the capital input share of contribution for K and L respectively). Growth of either A, K, or L will lead to growth in output. While capital and labour input are tangible, TFP appears to be more intangible as it can range from technology to knowledge of workers (human capital).

decline monotonously as per capita income increases. Therefore, poverty is expected to decline in a country with high growth rates. Assuming that income distribution does not worsen, Jerve and Ofstad (2000) estimate that in Tanzania a minimum annual growth rate of about 5 to 6 per cent is required if poverty is to be reduced by 20 to 30 per cent of its current level by 2025. In an inquiry into theoretical issues of growth and poverty reduction, Rodrik (2000) argues that it is hard to think of cases where poverty has been significantly reduced without the accompaniment of high growth rates. By contrast, however, Klasen (2005) asserts that while economic growth is a necessary condition for improving national income per capita, it is not sufficient for poverty reduction. It is inclusive growth that matters when poverty reduction is the goal.

2.1.2 Cluster-based Industrial Development

Porter (1998, 2000) defines industrial clusters as concentrations of interconnected companies, specialised suppliers, service providers, firms in related industries, and associated institutions (e.g., universities, standards agencies, trade associations) in a particular field of production that not only compete with one another, but also cooperate with one another. In this definition, Porter believes that the relationships within an industry cluster benefit from firms being located near one another, but it does not take geographic proximity as a defining characteristic of clusters. On the other hand, Schmitz (1995) defines an industrial cluster as a geographic and sectoral agglomeration of enterprises, which is similar to the working definition adopted here, where an industrial cluster is defined as a geographical concentration of enterprises producing similar or closely related goods (e.g., assemblers and parts suppliers). Schmitz's definition is consistent with the finding made by Alfred Marshall when he studied the textile and metalworking regions of Europe during the latter half of the 19th century, and it has recently been elaborated on in studies of highly successful industrial districts in various parts of the world (e.g., studies by Piore and Sabel, 1984; Zeitlin, 1989; Storper and Walker, 1989; Becattini, 1992; Sengenberger and Pyke, 1992; Humphrey, 1995). In this paper, the second definition is adopted because geographic proximity appears to be particularly important in developing countries, including Tanzania, where infrastructure and information systems are weak and cultures that value face-to-face communication predominate.

The Product Cycle Theory (PCT) provides a theoretical underpinning for how an industrial cluster is initiated in developing countries and where the original technological and entrepreneurial inputs come from (Vernon, 1996). According to this theory, after a new production technology has been designed and tested in developed countries, it undergoes standardisation so that it can be used in developing countries, where labour costs are lower. This technology is likely to be first introduced in the urban areas in the developing countries, where marketing information, communication networks, and a relatively skilled labour force are concentrated. As the industry grows, the production method may be simplified further so that even uneducated workers can run the production process. This reduces the entry barriers to manufacturing activities and stimulates production in less urbanised areas with lower labour costs. However, it is not clear as to who the followers of new technology are and how industrial clusters actually develop in a particular location. Nonetheless, the theory provides a basis for understanding how advanced technology is transferred from developed countries to developing countries. The theory also helps to ascertain the likelihood that new clusters will form, as new industries may agglomerate around the old one(s) to take advantage of technological spillovers and other positive externalities. The theory may explain the movement of industries within an advanced country and from an advanced country to a developing country. For example, production within the garment industries in Japan shifted from high-wage regions to low-wage regions and then from Japan to China to take advantage of low wages in the latter (Yamamura, Sonobe, and Otsuka, 2003).

Weijland (1999) explains how clusters are formed in those rural areas that offer locational advantages. For example, firms might concentrate in areas where transportation costs are reduced through the introduction of canals and railroads, for example, thus leading to the possible emergence of an industrial cluster (Krugman, 1991). Firms might also cluster in areas close to input sources or suppliers, with the goal of reducing transportation costs and maximising profits. Likewise, firms might concentrate in areas where input prices are low (Kim, 1999; Henderson et al., 2001). Clusters might also form near densely populated areas with high local product demand, thereby reducing the costs of transporting products to a high volume of consumers (Glaeser, 1992). In short, decisions on firm location may not be based on one factor alone, but rather on a combination of a variety of factors. For instance, a decision to locate in the suburbs rather than downtown might be based on considerations of favourable access to market information paired with lower wage rates and land prices.

The types of industries and firms within clusters can also have an impact on poverty. An underlying assumption – one borne out by empirical evidence – is that clusters are predominately composed of SMEs with more labour-intensive production profiles. Thus, most SME clusters in the developing countries tend to consist of labour-intensive activities revolving around food processing and the manufacture of garments, metal products, shoes, and wooden furniture. Many of those labour-intensive sectors where evidence of clustering exists often attract a substantial pool of unskilled workers. These workers can include relatively marginal workers, such as women, migrants, and those from economically poorer communities. The level of skill can act as a proxy for identifying the poorest workers. Thus, generating unskilled work for unskilled labourers is more likely to have a stronger pro-poor effect than generating skilled work for skilled labourers. However, one caveat is that increasing the supply of skilled work for skilled labourers might also generate greater pro-poor multiplier effects through the creation of business expansions or new firms that will eventually employ unskilled labourers. Part of an exercise in discerning the poverty impact of industrial clusters would be to distinguish between clusters where unskilled labour predominates from those clusters characterised by the predominance of skilled labour.[5]

2.2 Review of Empirical Studies

In Africa, Latin America, and Asia, there are numerous examples of clusters at early stages of industrialisation – i.e., clusters engaged in labour-intensive sectors and operating within or on the boundaries of the urban informal economy. Such clusters produce employment and incomes for the working poor and in many cases for the very poor. For example, Dawson (1992) reported that in Kumasi, a large city in southern Ghana, more than 5,000 workshops were employing some 40,000 persons in metalworking, auto-parts manufacturing, and vehicle repairs. The cluster had grown, but continued to operate in the informal economy with the extensive use of cheap family and apprentice labour. Employment-generating vehicle repair and metalworking clusters are also discussed by McCormick (1999), where a multitude of largely informal micro-enterprises (i.e., those employing an average of two persons) use simple technologies to produce a range of goods for local markets in Kenya. Knorringa (1999) finds that the shoe manufacturing cluster of Agra, India, employed roughly 60,000 workers in some 5,000 largely informal, small-scale units. In the Gamarra garment cluster in Lima, Peru, there were over 6,000 small enterprises as well as large numbers of

5 Schmitz and Nadvi (1999) distinguish between *incipient* clusters, i.e., those at an early stage of industrial development, usually located in poor areas and producing for local markets by using simple technologies and labour skills, versus *mature* clusters, i.e., those of which are relatively more advanced in terms of technology and skills, often producing for global markets and are thus vulnerable to global competitive pressures.

informal micro-enterprises and street traders, with growth fuelled by an influx of rural migrants into the cluster (Visser, 1999).

In addition to the dominance of small enterprises in the area of labour-intensive, urban clusters, there is also evidence that rural clusters provide employment for the rural poor. In Indonesia, clusters of rural cottage industries produce items ranging from woven bamboo and food products to furniture and garments (Smyth, 1992). Some of these rural clusters also export items like rattan furniture, but most are located in densely populated, poverty stricken regions and serve local consumer demands. These clusters operate largely through the inputs of home-based women workers and often function as the only means for young mothers, widows, elderly, and the disabled to earn an income. Other examples of clusters are reported by Sandee (2002), who describes the manufacture of roofing tiles in Java, and by Mitullah (1999), who describes fishing and fish processing around Lake Victoria in Kenya and their connections to local and export markets. The Lake Victoria cluster generates work for fishing communities who use a limited array of tools and have few amenities. In the case of Tanzania, Musonda, Adeya, and Abiola (2008) argue that between the mid-1990s and the early 2000s, the wood and furniture industries, many of which were cluster-based, achieved a 29.8 per cent growth in real output – their highest recorded growth rate. However, employment still fell by 7 per cent during the same time period.

In other cases, cluster-based production is positively related to growth. Sandee's 2002 study provides empirical evidence from a domestic and export-oriented furniture-manufacturing cluster in Java, where employment levels rose from around 8,000 in 1989 to nearly 44,000 in 1998. Evidence on employment growth is even more prominent when examining the relatively mature clusters. Thus, when describing the footwear export cluster of the Sinos Valley in Brazil, Schmitz (1998) reports that employment climbed from 153,000 in 1991 to just over 170,000 in 1996. Further dramatic evidence comes from Bair and Gereffi (2001), who report that the blue-jeans manufacturing cluster of Torreon, Mexico, which has rapidly emerged as a full package garment exporter to the United States, generated a 525 per cent increase in employment between 1993 and 2000 (i.e., employment levels in Torreon grew from 12,000 in 1993 to 75,000 in 2000). A study on the Tiruppur cotton knitwear cluster in India, which is another mature cluster, indicates that employment doubled during the 1980s – from 20,000 to 40,000 (Cawthorne, 1995). Evidence shows that employment within the Tiruppur cluster is now well over 200,000 (Singh, 2003). Much of this has come from migration, initially from nearby villages and more recently from poorer rural districts (de Neve, 2003).

Data on income growth for workers and small entrepreneurs is extremely sparse. Bair and Gereffi's study of the Torreon jeans manufacturing cluster shows that minimum wages rose from 182 pesos a week in 1998 to around 650 pesos a week in 2000. However, much of this reflects the peso's devaluation. In reality, real wages were trending towards the levels that prevailed prior to the 1994 devaluation. Moreover, while women accounted for almost 50 per cent of Torreon's workforce, men tended to take on the more skilled and higher paid functions. Similarly, in Tirippur, Singh (2003) reports daily wages for male workers at 85 rupees, but those for female workers were much lower, ranging from 40 to 50 rupees a day and below the Tamil Nadu legal minimum wage. Still, the issue is not just about wage levels and wage growth. Even if wage levels are not clearly rising in clusters, what is more critical is whether or not they are falling behind the wage levels found in non-clustered alternatives. Thus, the key issue is relative wages. Both Schmitz (1995, 1999) and Nadvi (1999) argue that while wage levels were low within the respective clusters they studied (i.e., the Sinos Valley shoe and the Sialkot surgical instrument clusters), they were better than regional average wage levels. In Jepara, Indonesia, wage levels for skilled furniture craftsmen were significantly higher than the average provincial wage levels (Sandee, 2002). Similarly, an assessment of the Gamarra

garment cluster in Peru shows that wage levels within the cluster were above those found in similar but non-clustered firms (Visser, 1999). The study shows a 30 per cent higher average monthly pay per worker within the cluster when compared to pay elsewhere in the city, although workers in the cluster tended to work longer hours. Moreover, these differences in favour of clustered enterprises were most significant for the very small firms within the cluster.

The Italian experience has driven much of the research in the developing world and provides a reference point for understanding industrial clusters within developing countries (Cosentino, Pyke, and Sengenberger, 1996; Rabellotti, 1997). Italy is one of the few countries where wage and employment data is available at the cluster level. Thus, if there is evidence that clustering actually raises employment and incomes, it is likely to emerge from the Italian cases. What it shows is that although manufacturing employment in the Italian clusters as a whole declined by 2.2 per cent during the 1990s, manufacturing employment levels fell even more sharply in non-cluster settings – at around 10 per cent. These patterns were observed in all leading sectors, with employment falling less rapidly in clustered areas and even rising in some cases. Furthermore, salaries for both white- and blue-collar workers were higher in cluster settings than outside the clusters. When controlling for job-specific activities, salary gains for both white- and blue-collar workers were greater in clustered industries during the latter part of the 1990s. The evidence from Italy supports the view that clusters can generate improved incomes and employment and points to a "high road" growth trajectory (de Neve, 2003; Nadvi and Barrientos, 2004).

2.3 Gaps in the Literature

The theoretical and empirical literature reviewed thus far points to a significant growth in labour-intensive industrial clusters and the corresponding growth in employment for the working poor in different parts of the developing world. It is also evident that labour-intensive industrial clusters exist in Tanzania. However, like those studies done on other developing countries, the literature on Tanzania is nearly devoid of data that establishes clear links between industrial clustering and firm growth. Likewise, studies of the Tanzanian context are unable to establish evidence of a link between the growth of firms with industrial clusters on one hand and reductions of poverty among firm owners and workers on the other hand. The implication is that so long as clusters and firm growth are given inadequate research attention, one cannot hope to adequately understand the growth of cluster-based manufacturing firms nor the ability of this growth to reduce poverty among firm owners and workers.

2.4 Research Questions

Based on the specific objectives previously outlined, as well as the theoretical and empirical reviews, the subsequent analysis of firm growth within the furniture industry clusters is guided by the following four research questions:

(i) Is growth among furniture manufacturing firms within the industrial clusters similar across cluster location?

(ii) Does the quantitative growth of clustered furniture-manufacturing firms lead to growth in the availability of jobs?

(iii) How similar are the payments made to firm owners and workers across the various cluster locations?

(iv) Can income poverty among firm owners and workers within the furniture industrial clusters be seen as resulting from firm growth?

3 Methodology

3.1 Conceptual Framework

This study is based on the assumption that the growth of furniture manufacturing firms in industrial clusters is associated with the benefits of agglomeration. Benefits include information spillovers or imitative innovation, division and the specialisation of labour among part- or component-producing firms, efficiency in the distribution of final products with respect to intermediate inputs and services, and the development of markets for specialised skills. In many cases, the benefits from agglomeration tend to be well established in industrial clusters (Marshall, 1920).[6] Therefore, this study is built on the idea that industrial clusters can contribute significantly to the growth of manufacturing firms by reducing transaction costs, stimulating innovations, and increasing collective efficiency through community mechanisms and social networks. This study also assumes that the concentration of firms in an industrial cluster makes it easier to imitate new technologies developed by other firms, to purchase from or sell parts and intermediate products to other firms, and to hire workers with required skills. In line with arguments made by Putnam (2000), Sonobe and Otsuka (2006), and Hayami (2009), this study assumes that these benefits allow for the growth of a number of clustered furniture-manufacturing firms and that the same benefits do not necessarily extend to those firms operating outside the cluster.

The study further assumes that by enhancing the possibilities for cluster actors – whether workers or producers – to improve their well-being, industrial clusters alter the context in which the poor live. Clusters allow local micro and small producers to make more effective use of otherwise underutilised resources like micro and small household savings provisions or family labour, thus generating incomes that could not avail by operating in isolation. Furthermore, being a highly dynamic process, it is also assumes that industrial clustering leads to "winners" and "losers" among firm owners and workers. Thus, in analysing the growth of cluster-based furniture-manufacturing firms and in parsing out the implications for poverty reduction, this paper concentrates on three cluster aspects: *cluster features*, such as the characteristics of firm owners and workers, the dominant type of firms within the cluster, and the cluster's location; *cluster dynamics*, such as cluster growth variables; and *cluster processes*, such as agglomeration gains, joint actions, and cluster-specific challenges.

The industrial clustering approach addresses the geographical concentration of firms that produce similar or closely related products within in a small area by facilitating the specific strategies and solutions for challenges facing the individual industrial cluster. To inform the Sustainable Industrial Development Policy (SIDP 1996-2020), the Small and Medium Development Policy (SMEDP), the Integrated Industrial Development Strategy and Master Plan (IIDSMP 2020), the National Strategy for Growth and Poverty Reduction (NSGPR II), and other related sector policies and strategies, this study engages in a growth analysis of clustered furniture-manufacturing firms and draws some policy implications for the growth of cluster-based firms and the reduction of poverty among firm owners and workers.

3.2 Study Sites

The study was conducted in Dar es Salaam, the largest commercial city in Tanzania. When compared to other regions of the country, this city accommodates a larger number of micro, small, and medium, labour-intensive manufacturing enterprises. The city is divided into three municipalities: Ilala, Kinondoni, and Temeke. Due to time factors and other resource constraints, only three furniture

6 These benefits are closely related to each other and to the generally low transaction costs within a cluster. For example, information spillovers increase with spin-offs, poaching human resources, and transactions between firms.

clusters – one from each municipality – were studied: Keko, Buguruni-Malapa, and Mbezi Beach kwa Komba. None of these furniture clusters are formally protected and none occupy space provided by the government. These clusters have developed a reputation for producing a wide range of furniture at reasonable prices. Although space limitations and the search for new markets has led some firm owners to take their products to other parts of Dar es Salaam (e.g., Mbagala, Namanga, Kinondoni, Kimara, etc.), non-clustered furniture producers from other areas are drawn to these cluster because of their concentrated market and potentials for gains in collective efficiency. The study sites were purposively selected because for more than two decades, furniture making has dominated the clusters. The Keko cluster is the oldest one, which was established in the 1970s with only five firms (Musonda, 2007). Therefore, furniture firms could provide an abundance of evidence on firm growth and the implications for poverty reduction among firm owners and workers. In addition to the furniture making business, the study sites also contain a number of restaurants, canteens, kiosks, beauty parlours, stationary stores, carpenters, and other service sector enterprises. However, the study focuses on the clustered micro and small furniture-manufacturing firms because these were found to be the core activity in all three industrial clusters.

3.3 Sampling Procedures and Data Collection

The sample respondents for the study comprise the owners of and workers in micro and small furniture-manufacturing firms. Stratified sampling techniques were adopted to form three strata. Simple random sampling in each stratum was used to select the respondents. Firms and employees were identified through systematic selection based on two criteria. First, to be selected, a firm must have been involved in furniture manufacturing for at least five years and must employ at least one person, including the owner if s/he is actively involved in the business. Second, the employees must have been working in clustered furniture firms for at least five years. These criteria served as the basis for analysing growth over time. A sample size of 150 firms and 300 workers – 50 firm owners and 100 workers in each cluster – were randomly selected for interview. Between September and November, 2010, the questionnaires were administered to respondents in the cluster-based furniture workshops within the study areas.

There were two types of questionnaires. First, the enterprise questionnaire captured the basic data pertaining to the firms and the owners, including enterprise and owner characteristics, production and marketing, employment records, training, firm networking and linkages, and the owners' views on the existence and development of the cluster. Second, the worker questionnaire collected data regarding worker characteristics, employment records, income from employment in the furniture clusters, and other sources of income.

The total number of collected questionnaires from all three industrial clusters comprised of 117 firms owners, which is a response rate of 78 per cent, and 257 workers, which is a response rate of 85.7 per cent.[7] The geographical distribution of the 117 firms during the year of the survey was 50 for Keko, 32 for Buguruni-Malapa, and 35 for Mbezi Beach kwa Komba. Similarly, of the 257 firm workers, 123 were from Keko, 77 were from Buguruni-Malapa, and 57 were from Mbezi Beach kwa Komba.

7 A state-owned furniture firm (JKT SUMA) and a privately-owned firm (Keko Modern Furniture) were found along Chang'ombe Road in the Keko furniture cluster. These firms possess relatively advanced equipment. Due to their uniqueness, we excluded them from our sampled observations.

3.4 Data Analysis

As a way to respond to the study's research objectives and research questions, an analysis of the basic descriptive statistics of the growth variables was employed by using the Statistical Package for the Social Sciences (SPSS 18). Basic descriptive statistics of the characteristics of the firm owners and workers, as well as a selection of quantitative firm growth indicators (e.g., firm capacity utilisation rate, real value of sales, manufacturing value added, payments to enterprise owners, workers salaries or wages, and changes in the level of employment over time) were analysed.[8] In addition to the descriptive analysis of selected quantitative growth indictors, the study also explored the challenges facing the furniture sub-sector and the extent to which cluster mechanisms like inter-firm relationships and interactions actually contributed to firm growth. Furthermore, understanding firm growth and its implications for poverty reduction required an analysis of qualitative data, such as the producers' and workers' perceptions of changes in poverty. With the usual notations, equations (1), (2), (3), and (4) were specified and applied for computing the quantitative indicators.

$$FGROWTH_{ij} = \frac{1}{N}\sum_{i=1}^{N}\left(\frac{X_{it+1} - X_{it0}}{X_{ito}}\right) \quad (1)$$

$FGROWTH_{ij}$ captures the average quantitative growth indicator for i^{th} furniture manufacturing firm in an industrial cluster location j. X_{it0} and X_{it+1} refer to the value of the recorded indicator at the reference or base year and year t respectively. N denotes the number of observations.

$$Y_{ij} = \frac{1}{N}\sum_{i=1}^{N}\left(\frac{X_{i1}}{X_{io}}\right).100\% \quad (2)$$

Y_{ij} stands for average percentage of capacity utilisation for i^{th} furniture manufacturing firm in an industrial cluster location j, X_{i1} captures the firm's realised production, and X_{i0} captures the productive capacity of the installation.

$$MVA_{ij} = \frac{1}{N}\sum_{i=1}^{N}\left(P_{iy} - C_{ix}\right) \quad (3)$$

MVA_{ij} stands for average manufacturing value added registered by i^{th} furniture manufacturing firm in an industrial cluster location j. P_{iy} and P_{ix} represent the sale price of a manufactured furniture product and the cost of materials respectively.

When recognising the effect of inflation, this study uses real instead of nominal values of all monetary variables. Nominal value refers to a value expressed in monetary terms (i.e., in units of a currency) in a given year or series of years. By contrast, real values are derived from adjustments made to nominal values that remove the effects of price changes over time. For example, changes in the nominal value of a bundle of manufactured products and services over time can occur because of a change in the quantities in the bundle *or* simply changes in their associated prices, whereas changes in real values reflect only those changes in quantities. Real value over time is a measure of purchasing power net of any price changes over time. It is also used for restating nominal income

8 When analysing firm growth, it was challenging to deciding on which indicators to use. Indeed, other important growth indicators, such as product upgrading and differentiation, were missing among the surveyed firms. The author decided to use quantitative growth indicators as proxies for firm growth, similar to Otsuka and Sonobe's 2009 analysis of growth in a metalworking cluster in Nairobi.

to real income, thus adjusting those parts of income changes that merely offset nflation. Therefore, nominal values were transformed into real values according to the consumer price indexes recorded in the same years as the study. This transformation was done by using equation (4).

$$\Phi_{ij} = \frac{1}{N}\sum_{i=1}^{N}\left(\frac{\Phi_{io}}{CPI_t}\right) \quad (4)$$

In this equation, Φ_{ij} captures the average real values of a given monetary variable of i^{th} firm located in cluster j, while Φ_{iO} captures the nominal values of the same the variables. CPI_t stands for price index at year t.

4 Results and Discussion

4.1 Socioeconomic Characteristics of Firm Owners and Workers

Basic characteristics of the sampled furniture producers are summarised in table 3. The average age of the furniture producers was approximately 38.9 years, with an average of about 7.7 years of experience in the furniture industry. In terms of gender, it is interesting to note that out of the 117 interviewed entrepreneurs, 99.33 per cent were males. With the exception of the female presence in sales, restaurants, and communication services, the core activities in all studied clusters are undertaken by men. Another interesting variable studied is the household sizes of the furniture entrepreneurs. The average household size of firm owners was found to be 4, implying that the performance of these industrial clusters, whether negative or positive, has a direct implication for up to 468 people.

Table 3: Characteristics of the Sampled Furniture Firm Owners

	Keko	Buguruni-Malapa	Mbezi-Beach kwa Komba	Total
Age (yrs)	40.2	38.2	38.3	38.9
Household size (HHS)	5.0	4.0	3.0	4.0
Sex (Male %)	98.0	100	100	99.3
(Female %)	2.0	-	-	0.67
Originally from Dar es Salaam (%)	18.0	17.1	9.4	14.8
Years of schooling	7.0	7.0	10.4	8.1
Apprentice training (%)	73.9	87.9	91.5	84.4
Years of operation	8.1	7.6	7.4	7.7
Owners with previous occupations in the furniture industry (%)	86.0	82.9	71.9	80.3
Owners with family in the same business (%)	30.0	40.6	28.6	33.1
Own showrooms (%)	68.0	59.4	54.3	60.6
Registered as legal firm (%)	28.0	43.8	25.7	32.5
Number of observation (N)	**50**	**32**	**35**	**117**

Source: Survey data, 2010

Table 3 also presents the information on where the entrepreneurs worked before they started their own businesses in the furniture clusters. As the table illustrates, 80.27 per cent of the entrepreneurs previously worked in the furniture industry. The entrepreneurs' educational levels are positively related to their performance largely because education increases the possibility of engaging in knowledge-based production and innovation, as well as the ability to adapt to changes in the business environment. Hence, Table 3 also shows the years of schooling among the firm owners within the study sites. On average, a significant number of the entrepreneurs are primary-school leavers – i.e., they left after their first seven years of schooling. This is especially true for both Keko and Buguruni-Malapa. However, looking across the clusters reveals that the Mbezi Beach kwa Komba cluster had a relatively larger number of more educated producers, with an average of 10.4 years. In addition, on the job training in the form of apprenticeships was identified by 84.4 per cent of the entrepreneurs as a primary source for the acquisition of furniture making skills.

This suggests that most entrants into the furniture making business are either "spin-offs"[9] or former apprentices of current enterprises. These findings are consistent with the research done by Musonda, Adeya, and Abiola (2008), who found that the furniture firms in the Keko cluster rely largely on apprenticeship skills acquired through learning by doing.

Furthermore, table 3 shows information on the family background of firm owners. Out of 117 entrepreneurs, only 14.83 per cent were born in Dar es Salaam. A full 85.17 per cent were from up-country origins. This suggests that the furniture industry in the study sites absorb a considerable pool of surplus, up-country labour. The same trend emerged with respect to whether or not entrepreneurs have relatives engaged in similar businesses within the clusters. It was found that an average of 33.1 per cent of the entrepreneurs had family members working in the same business. This most likely suggests that if an entrepreneur's business is successful, his or her relatives may start a similar business within the same cluster. As time passes and the entrepreneur remains active, it becomes more likely that s/he has relatives engaged in similar businesses within the same cluster.

The analysis found that most of the sampled enterprises in the studied industrial clusters were trapped in the informal economy, as only 32.5 per cent were formally registered furniture enterprises (see table 3). The statistics are consistent with those findings which show that in Tanzania, the informal sector occupies a dominant portion of the economic activities, including those within the manufacturing sector. A challenge arises as to whether or not the informal sector receives due attention from the government's growth policies. This is because most of the SME promotion measures undertaken in Tanzania exclude the informal sector enterprises. As a consequence, a large number of the informal manufacturing enterprises in the country have been left out of the public support even though the Small and Medium Enterprise Development Policy was formulated as a way to address the constrains and to tap the full potential of the sector.

Table 4 summarises the socioeconomic characteristics of those firm workers within the three clusters. The average household size for a firm worker was 3.22 people, suggesting that the earnings from furniture manufacturing for the 257 workers interviewed for this study go to support the lives of 827 people. This also suggests that promoting the growth of furniture firms in the study sites can play a substantial role in poverty reduction among workers. Moreover, the table points to gender disparities among workers, where only 2.48 per cent of those employed were females engaged largely in sales activities and material purchasing. To be sure, the survey did not find a single woman involved in the physical activities of the furniture workshops. Finally, table 4 shows information on the family background of the firm workers. Out of 257 employees interviewed, only 9.22 per cent were born in Dar es Salaam. In other words, a full 90.78 per cent of the enterprise workers have up-country origins. Interestingly, when the workers were asked if they had relatives working in similar businesses within the clusters, their answers closely resembled the responses given by the firm owners: An average of around 35.23 per cent of workers had relatives engaged in similar lines of work.

It is a popular belief in Tanzania that apprenticeship serves as a major source of employment for the economically active labour force, many of whom would be otherwise unemployed. This analysis found that 93.79 per cent of the interviewed workers in the furniture manufacturing clusters were trained through apprenticeships. The respondents also reported that apprenticeship contracts in

9 Otsuka and Sonobe (2011) define "spin-offs" as the former employees of the pioneering entrepreneur. These spin-offs produce the same low-quality products by using the same low-quality inputs and sell their products on the same local markets as the pioneer.

the clusters usually begin when a parent or a close relative sends a young man to a master to learn the skills needed for working in the furniture making business. These results are consistent with the earlier findings from the Suame Magazine industrial cluster in Ghana, the Kariobangi metalworking cluster in Kenya, and the Laphu knitwear cluster in northern Vietnam (Idrissu, 2006; Otsuka, Akoten, and Sonobe, 2007).

Table 4: Characteristics of the Sampled Furniture Firm Workers

	Keko	Buguruni-Malapa	Mbezi-Beach kwa Komba	Total
Age (yrs)	39.13	35.20	34.30	36.21
Household size (HHS)	3.14	2.94	3.58	3.22
Sex (Male %)	97.32	97.12	98.11	97.52
(Female %)	2.68	2.88	1.89	2.48
Originally from Dar es Salaam (%)	9.12	10.16	8.39	9.22
Owner with family in the same business (%)	48.57	19.81	37.32	35.23
Years of schooling	7.20	6.78	8.92	7.63
Apprentice training (%)	93.91	90.95	96.50	93.79
Years of experience	8.1	7.6	7.4	7.7
Workers with previous occupations in the furniture industry (%)	96.62	92.31	79.19	89.37
Number of observation (N)	**123**	**77**	**57**	**257**

Source: Survey data, 2010

4.2 Analysis of Furniture Manufacturing Firm Growth

To assess the growth of furniture enterprises located in Keko, Buguruni-Malapa, and Mbezi Beach kwa Komba clusters, five quantitative growth variables are examined. They include production capacity utilisation rate, real average values of annual sales, manufacturing value added, payments to owners, salaries or wages for workers, and employment growth over time.[10] The analysis responds to the research question of whether or not micro and small-sized furniture-manufacturing firms in the studied industrial clusters grew during the time span of this study. Firm growth and the implications for poverty reduction are also analysed in this section.

4.2.1 Production Capacity Utilisation

Capacity utilisation is a concept in economics and managerial accounting. It shows the extent to which a firm actually uses its installed productive capacity. Thus, it refers to the relationship between actual output that *is* produced with the use of the installed equipment and the potential output that *could* be produced if the equipment was fully utilised. It is one of the most important measures of output growth performance for manufacturing firms (Ishengoma, 2004). The study here found that furniture manufacturing firms continued to operate below 50 per cent. Weak productive capacity, according to respondents, caused a majority of local furniture clusters to remain locked in low-

10 As noted in the methodological section, the real values for the base year, 2005, 2007, and 2009 were computed using an average Consumer Price Index (CPI) of 100, 120.87, 138.75, and 171.58, respectively, as recorded by the National Bureau of Statistics (2010).

quality, low-income markets. Nevertheless, despite this weak utilisation rate, capacity utilisation managed to grow slightly in all clusters during the timeframe of this study, with the Keko furniture cluster leading followed closely by Mbezi Beach kwa Komba and Buguruni-Malapa (see table 5). The main issues behind low levels of capacity utilisation were reported to be infrastructural constraints, such as problems in the availability, reliability, and quality of electricity, as well as poor transportation systems, most notably roads, within all three studied clusters. Others constraints were associated with outdated manufacturing technologies, which to a great extent restricted the ability to upgrade and differentiate furniture products; insufficient availability of raw materials, such as timber and wood; and the limited domestic market for locally produced furniture products.

Table 5: Average Capacity Utilisation

Year	Keko		Buguruni-Malapa		Mbezi Beach kwa Komba		All	
	Capacity Utilisation (%)	Growth (percentage points)	Capacity Utilisation (%)	Growth (percentage points)	Capacity Utilisation (%)	Growth (percentage points)	Capacity Utilisation (%)	Growth (percentage points)
2009	44.12	0.06	38.78	0.26	39.99	0.05	40.96	0.11
2007	41.74	0.14	30.88	-0.06	38.13	0.03	36.91	0.04
2005	36.64	0.07	32.97	0.04	36.90	-0.01	35.50	0.03
First Year	34.15	-	31.77	-	37.45	-	34.46	-
N	**50**		**32**		**35**		**117**	

Source: Survey data, 2010

4.2.2 Manufacturing Value Added (MVA)

In standard microeconomic theory, manufacturing value added (MVA) is the difference between the sale price of a manufactured product and the material costs of production, such as material purchases, fuel, and electricity. In national accounts and when used in macroeconomics, MVA refers to the contribution that factors of production – i.e., land, labour, and capital goods – make to increasing the value of a product. Thus, MVA corresponds with the incomes received by the owners of these factors. The national value added is shared between capital and labour, and this sharing gives rise to issues of distribution. The measure of manufacturing value added indicates the contribution of manufacturing establishments to the value of finished manufactured products. Net value added is computed by subtracting the sum of the total cost of production and depreciation from the gross output. As indicated in table 6, on average, firms recorded positive growth of MVA. This implies that firms grew over the entire period of this analysis. However, a comparison across different clusters reveals that the Keko furniture cluster recorded higher value added than the other two clusters. Proximity to Dar es Salaam city centre, where interactions with customers is considerably higher, and a long history in the furniture making business were cited by the respondents as key reasons for the relatively high MVA growth rates for Keko.

Table 6: Real Average Manufacturing Value Added (MVA)

Year	Keko		Mbezi Beach kwa Komba		Buguruni-Malapa		Total	
	MVA (TZS)	Growth (%)	MVA (TZS)	Growth (%)	MVA (TZS)	Growth (%)	MVA (TZS)	Growth (%)
2009	13,044,595.31	8.43	8,990,476.47	0.17	9,459,062.50	-0.04	10,498,044.76	3.37
2007	12,030,600.00	8.67	8,975,500.00	6.94	9,462,736.84	2.31	10,156,278.95	6.12
2005	11,070,428.57	8.55	8,393,000.00	6.16	9,249,433.33	9.10	9,570,953.97	8.02
First Year	10,198,195.65	-	7,905,806.45	-	8,478,077.42	-	8,860,693.17	-
N	**50**		**35**		**32**		**117**	

Source: Survey data, 2010

4.2.3 Sales of Own Production

Another important measure of output growth performance is the real value of sales from own production. Sales are defined as the output quantity multiplied by the market price of main products and by-products produced and sold by industries. Sales are evaluated at the producer's prices. They include all duties and other taxes imposed on the product except for the value added tax. Table 7 below shows the real value of sales. On average, real value of sales of the firms' products exhibit positive growth, both in absolute and percentage terms. Based on the same reasons given for the value added performance, the Keko furniture cluster recorded higher sales when compared to the other two clusters.

Table 7: Real Average Sales from Own Production

Year	Keko		Mbezi Beach kwa Komba		Buguruni-Malapa		Total	
	Sales (TZS)	Growth (%)	Sales (TZS)	Growth (%)	Sales (TZS)	Growth (%)	Sales (TZS)	Growth (%)
2009	26,347,295.00	12.29	20,203,823.53	6.23	15,667,968.75	-1.00	20,739,695.76	6.71
2007	23,463,269.23	19.96	19,018,100.00	17.93	15,826,052.63	5.38	19,435,807.29	15.00
2005	19,559,571.43	26.59	16,126,000.00	17.22	15,017,916.67	4.39	16,901,162.70	16.31
First Year	15,451,195.65	-	13,757,096.77	-	14,386,451.61	-	14,531,581.35	-
N	**50**		**35**		**32**		**117**	

Source: Survey data, 2010

According to a recent survey, Tanzanian manufacturing industries have two product market outlets. These are domestic and export product markets, with the former being more significant than the later (United Republic of Tanzania, 2010). Similar to the findings made by MITM, NBS, CTI, and UNIDO (United Republic of Tanzania, 2010), the analysis here finds that the furniture manufacturing industry is not an exception. Statistics shown in table 8 reveal that sales of furniture in the domestic market constitute 98.01 per cent of their total sales, while export sales constitute only 1.99 per cent during the specified analysis period. This implies that furniture manufacturing firms in the study sites are targeting the domestic markets. However, the respondents raised some concerns about increased competition within the domestic furniture market due to a growth in the number of domestic producers as well as an increase in the number of imports. The former is largely due to the rising number of new, competent, and efficient domestic furniture producers, while the latter is due to foreign suppliers selling furniture with the same or even better quality. Competition from furniture imports was also reported to be partly attributed to increased counterfeiting, illicit trade, and contraband activities, similar to those factors pointed out by Semboja (2007).

Table 8: Marketing Channels for Furniture Products

	Starting Year	Year 2005	Year 2007	Year 2009	Total
For local consumers	99.09	97.70	97.13	98.15	98.01
Own workshop/store	29.22	31.27	26.31	28.75	28.89
Retailer	64.02	58.10	63.00	62.70	61.95
Wholesaler	4.03	5.00	5.38	4.56	4.74
Contractor	1.83	3.33	2.38	2.08	2.40
Exhibition/trade fair	-	-	0.06	0.05	0.03
For overseas consumers	0.91	2.30	2.88	1.85	1.99
Exporter	0.91	2.14	2.88	1.67	1.90
Exhibition/trade fair	-	0.16	-	0.19	0.09
Total	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**

Source: Survey data, 2010

As reported earlier in table 8, the survey found that 61.95 per cent of the sampled furniture manufacturing firms sell in retail prices directly to individuals and households. During the survey, it was further reported that customers come to their firms to buy furniture products, and only 1.9 per cent of entrepreneurs located in the Keko cluster reported selling products to customers travelling from the Comoro Islands.[11] Nevertheless, the firms find it difficult to extend their market frontiers in terms of the number of customers and geographical coverage. Most of the marketing activity continues to take place within the individual clusters. This shows that the main sources of customers for the furniture manufacturers in the clusters are individual buyers who often walk to the clusters, thus indicating the presence of a highly localised market. It is also readily apparent that many of the firms have yet to use improved technology and aspire to make better quality products to serve wider markets.

4.2.4 Employment

As pointed out in the literature review, micro, small, and medium manufacturing firms have for a long time been acknowledged as playing a central role in employment growth and poverty alleviation. Employment growth can also serve as an indicator of enterprise success. The current study analysed the ability of furniture firms to generate employment opportunities in the study sites. The average number of workers in the first (base) year of business operation was recorded at 3.02 workers (see table 9). However, towards the end of 2009, the firms still retained about the same average number of employees – at 3.41 workers. In the one-year period from the base year to 2005, the firms managed to increase their employment levels by an average of 34.61 per cent. The lack of increase in employment numbers throughout the timeframe of the study might be attributed to the fact that recruitment is one of the largest long-term investments made by these entrepreneurs. This statement appears to be congruent with growth data reported by Daniels et al. (1995, 57), who found very little employment growth among firms in labour-intensive manufacturing sectors, such as furniture production.

11 It should be noted that pointing out the Comoro Islands does not necessarily mean this was the most widely mentioned group of tourists in Tanzania. However, for clarity, it is worth mentioning it since customers from the Comoro Islands were the foreign buyers most frequently mentioned during the interviews with furniture firm owners.

Table 9: Average Number of Employees per Firm and Employment Growth

Employment in	Keko		Mbezi Beach kwa Komba		Buguruni-Malapa		Total	
	M Mean	Change (%)	Mean	Change (%)	Mean	Change (%)	Mean	Change (%)
First Year	3.06	-	2.68	-	3.31	-	3.02	-
Year 2005	3.69	20.66	3.47	29.79	5.10	53.96	4.06	34.61
Year 2007	3.17	-14.24	3.29	-5.41	4.92	-3.59	3.72	-8.51
Year 2009	3.11	-1.90	2.97	-9.68	4.32	-12.08	3.41	-8.16
N	**50**		**35**		**32**		**117**	

Source: Survey data, 2010

4.2.5 Payments to the Firm Owners

From standard economic theory, payments to the firm owners are rewards for their supply of factors of production in the form of capital. This, among other things, is what motivates them to invest. The estimated amount of payments to firm owners represents a better proxy for measuring their real disposable income. As shown in table 10, payments to the owners were recorded at TZS 1,309,134.25 annually, or an average of TZS 109,094.52 monthly. The value of payments grew throughout the entire period of study, from TZS 1,075,593.15 in the first year to 1,531,990.74 in 2009. Interestingly, the estimations of payment to the enterprise owners were above the estimated food and basic needs poverty lines for the Dar es Salaam region and the national average.[12]

Table 10: Real Average Payments to the Firm Owners by Cluster Location

	Keko		Buguruni-Malapa		Mbezi Beach kwa Komba		All	
	TZS	Change (%)	TZS	Change (%)	TZS	Change (%)	TZS	Change (%)
First Year	1,393,750.00	-	1,014,939.87	-	1,104,590.91	-	1,075,593.15	-
In 2005	3,750,000.00	169.06	1,009,027.78	-0.58	1,259,230.77	14.00	1,196,328.13	11.22
In 2007	1,237,500.00	-67.00	1,269,111.11	25.78	1,695,161.29	34.62	1,432,625.00	19.75
In 2009	1,745,000.00	41.01	1,498,983.05	18.11	1,537,926.83	-9.28	1,531,990.74	6.94
Total	2,031,562.50		1,198,015.45		1,399,227.45		1,309,134.25	
N	**50**		**32**		**35**		**117**	

Source: Survey data, 2010

4.2.6 Firm Workers' Wages/Salaries

In industrial production processes, workers' wages or salaries are a subset of labour costs that represent a substantial proportion of the total cost of production. Labour costs refer to all costs that go directly to employees, such as salaries, payments in kind, employers' contributions to social security schemes, overtime, training expenses, bonuses, and other costs. This study analysed the employees' real income in terms of wages or salaries derived from their labour inputs into the clustered furniture-manufacturing firms. Firm workers reported their annual after tax wages or salaries, as shown in table 11. On average, the real wages or salaries amounted to TZS 543,110.03

12 The food and basic needs poverty lines for Tanzania Mainland and the Dar es Salaam region were estimated by the National Bureau of Statistics (NBS) in the Household Budget Survey of 2007. The food and basic needs poverty lines for Tanzania Mainland were TZS 10,219 and TZS 13,998 per month, respectively (adult equivalent for 28 days). For Dar es Salaam, these figures were TZS 13,098 and TZS 17,941 per month, respectively (adult equivalent for 28 days).

during the first year of furniture production, or TZS 45,259.17 per month. This increased to TZS 673,768.36 in 2009 or TZS 56,147.36 per month. These figures are greater than the estimated food and basic needs poverty lines for Tanzania and the Dar es Salaam region, as reported in footnote 13. Interestingly, after tax wages or salaries continued to show positive growth in all three clusters, although changes in income over time were somewhat marginal. These statistics imply that it is worthwhile working in the furniture clusters, as workers derive sufficient income for their livelihood.

Table 11: Employees' After Tax Wages/Salaries by Cluster Location

Year	Keko		Buguruni-Malapa		Mbezi Beach kwa Komba		All	
	Wage (TZS)	Wage Growth (%)	Wage (TZS)	Wage Growth (%)	Wage (TZS)	Wage Growth (%)	Wage (TZS)	Wage Growth (%)
2009	773,414.63	11.52	592,106.67	1.4	655,783.78	5.25	673,768.36	6.35
2007	693,533.33	17.85	583,955.22	23.31	623,054.05	9.84	633,514.20	16.65
2005	588,490.00	14.94	473,583.33	15.44	567,256.76	6.61	543,110.03	12.03
First Year	512,001.59	-	410,243.42	-	532,067.57	-	484,770.86	-
N	**50**		**32**		**35**		**117**	

Source: Survey data, 2010

4.3 Firm Owners' and Workers' Perceptions of Firm Growth and Poverty Reduction

One purpose of this study is to explore the extent to which firm growth produces changes in income poverty among firm owners and workers in the furniture manufacturing clusters. Relying on real payments to the firm owners and wages or salaries to workers by itself is an insufficient parameter for capturing income growth and its implication for the welfare of firm owners and workers. Therefore, to capture the extent to which real income derived from growth in furniture manufacturing was poverty reducing, this study analysed the respondents' subjective perceptions about the relationship between their standards of living and firm growth. The findings of this analysis are reported below in tables 12 and 13.

A majority of the interviewed firm owners (62.39 per cent) and workers (49.03 per cent) admitted that their standards of living improved as a result of gains in real income derived from furniture business in the studied clusters. Respondents also noted that firm growth reduced poverty by increasing the spending power of the firm owners and workers, thereby increasing demand for other goods and services in the economy through the multiplier effect. As captured in table 12, the analysis reveals that the owners of firms in the Mbezi Beach kwa Komba furniture cluster were the most likely to perceive standard of living improvements (71.43 per cent) followed by those in Buguruni-Malapa (59.38 per cent) and Keko (58.0 per cent).

Table 12: Firm Owners' Perceptions of Living Standards Relative to Income Growth

	Keko		Mbezi Beach kwa Komba		Buguruni-Malapa		Total	
	N	%	N	%	N	%	N	%
No change	6	12.00	4	11.43	9	28.13	19	16.24
Improved	29	58.00	25	71.43	19	59.38	73	62.39
Worsened	11	22.00	5	14.29	3	9.38	19	16.24
Don't know	4	8.00	1	2.86	1	3.13	6	5.13
Total	**50**	**100.00**	**35**	**100.00**	**32**	**100.00**	**117**	**100.00**

Source: Survey data, 2010

Table 13 shows that that the workers for the furniture firms in the Buguruni-Malapa cluster were also the most likely to see standard of living improvements (58.33 per cent) followed by those working in Keko (45.11 per cent) and Mbezi Beach kwa Komba (42.50 per cent). Therefore, despite the differences in perception, the results provide a basic answer to the research question: Increases in average income derived from furniture manufacturing contribute to reducing poverty among the owners of and workers in furniture manufacturing firms within the studied furniture manufacturing clusters. The findings also support the theory that firm growth matters for poverty reduction.

Table 13: Firm Workers' Perceptions of Living Standards Relative to Income Growth

	Keko		Buguruni-Malapa		Mbezi Beach kwa Komba		Total	
	N	%	N	%	N	%	N	%
No change	45	33.83	25	29.76	16	40.00	86	33.46
Improved	60	45.11	49	58.33	17	42.50	126	49.03
Worsened	23	17.29	7	8.33	6	15.00	36	14.01
Don't know	5	3.76	3	3.57	1	2.50	9	3.50
Total	**133**	**100.00**	**84**	**100.00**	**40**	**100.00**	**257**	**100.00**

Source: Survey data, 2010

4.4 Clustering of Furniture Manufacturing Firms and Agglomeration Gains

Cluster-based industrial development opens up for agglomeration gains that can rarely be obtained by manufacturing firms operating alone. This would be reflected in the inter-firm relationships and interactions through agglomeration economies.[13] Since one of the specific objectives of this study was to explore whether or not firms in each of the three clusters cooperate and whether or not inter-firm relationships support firm growth, this section presents the ways in which firms within each cluster location interact. The analysis generally reveals that furniture manufacturing firms benefit from clustering and are acutely aware of the importance of clustering. Firm owners feel that they are better off in clusters when compared to the situations faced by firms operating alone.

13 Agglomeration economies describe benefits that firms obtain by locating near each other. It relates to the idea of economies of scale and network effects. As more firms in related industries cluster together, production costs may decline because clustered firms have multiple and competing suppliers and greater levels of specialisation and division of labour. Even with the competition that prevails from having a multiplicity of firms within the same sector cluster, there may be advantages because that cluster attracts more suppliers and customers than a single firm could do on its own outside the cluster (Coe, Kelly, and Yeung, 2007).

They especially benefit from having access to shared tools, shared knowledge and skills, and shared marketing information, as well as the joint display of furniture products and collective security against damages and theft. The following analyses and discussions of the identified findings on inter-firm relations in the three furniture industrial clusters are structured according to the interaction mechanisms presented in table 14.

Table 14: Interactions Between Firms and Networking by Cluster Location

	Keko		Buguruni-Malapa		Mbezi Beach kwa Komba		Total	
	N	%	N	%	N	%	N	%
Purchase of raw materials	27	11.34	16	13.91	12	10.53	55	11.78
Inter-firm sales	49	20.59	10	8.70	27	23.68	86	18.42
Subcontracting	49	20.59	9	7.83	12	10.53	70	14.99
Lending machinery	29	12.18	20	17.39	17	14.91	66	14.13
Marketing furniture products	21	8.82	16	13.91	8	7.02	45	9.64
Training workers	16	6.72	18	15.65	17	14.91	51	10.92
Purchase of inputs	15	6.30	9	7.83	10	8.77	34	7.28
Product development	23	9.66	12	10.43	7	6.14	42	8.99
Others (e.g., competition)	9	3.78	5	4.35	4	3.51	18	3.85
Total	**238**	**100.00**	**115**	**100.00**	**114**	**100.00**	**467**	**100.00**

Source: Survey data, 2010 (multiple response)

4.4.1 Purchasing Raw Materials

Information on inter-firm linkages on the purchase of raw materials, such as timber, screws, sanding and polishing materials, and so forth, was obtained from all the surveyed firms. Cooperation with other firms when purchasing raw materials was reported by 11.34 per cent, 13.91 per cent, and 10.53 per cent of the firm owners from the Keko, Buguruni-Malapa, and Mbezi Beach kwa Komba furniture clusters, respectively. It was generally noted that backward linkages were fairly well developed in the Buguruni-Malapa furniture cluster, where a relatively large number of firms purchase some raw materials from retail or wholesale shops. The survey also found that key input suppliers were mostly timber, logging, and sawmill companies. Interestingly, firm owners acknowledged that as result of working within furniture clusters, some input suppliers have developed long-term business relationships with cluster manufacturing enterprises, but the market is always in flux and there are always new entrants that offer competitive prices. This depicts the presence of fairly strong working inter-linkages within the input supply sector.

4.4.2 Inter-Firm Sales

Another investigated aspect concerned inter-firm sales. All the respondents in the surveyed firms in both clusters were asked whether or not they sold any of their furniture products to any other manufacturing firm in the surveyed area. On average, 18.42 per cent mentioned being involved in this type of relationship, which was highest among all forms of firm interaction. When comparing cluster location, the analysis found that 23.68 per cent of the Mbezi Beach kwa Komba respondents, 20.59 per cent of the Keko respondents, and 8.7 per cent of Buguruni-Malapa respondents reported their involvement in inter-firm sales. They were also asked to state the type of firms to which they were selling their products, where the responses revealed that sales were often made to other micro- and small-scale firms dealing with metal/metal products and firms producing building materials. Based on this it can be argued that most of the firms sell furniture products to more than one category of firms within the cluster.

4.4.3 Subcontracting Activity within Furniture Manufacturing Firms

The study also investigated subcontracting as another type of inter-firm relation. Viewed in terms of subcontracting arrangements, this kind of vertical inter-firm connection was found to be fairly well developed in all three clusters, where 20.59 per cent of the Keko respondents, 10.53 per cent of the Mbezi Beach kwa Komba respondents, and 7.83 per cent of the Buguruni-Malapa respondents reported their involvement in subcontracting activities. On average, 14.99 per cent of firm owners in all three clusters reported subcontracting and receiving subcontracted work. Respondents reported that firms are motivated to subcontract by the desire to achieve lower production and transaction costs and standardised product quality. From this, one can conclude that firms cooperate in their endeavours to produce products. Subcontracting among the firms in the clusters is perhaps a fundamental similarity between clusters in Tanzania and those found in other developing countries.

4.4.4 Cooperation among Firms

As pointed out by the firm owners, no formal arrangements exist for inter-firm cooperation. However, table 14 demonstrates quite clearly that forms of cooperation exist in lending machinery (14.13 per cent), training workers (10.92 per cent), marketing products (9.64 per cent), furniture product development (8.99 per cent), and purchasing inputs (7.28 per cent). Furthermore, discussions with firm owners revealed a strong forward production linkage between the firms within the clusters. By contrast, backward non-production linkages, essentially financial ones established through borrowing either capital for start-up or for expansion, are extremely weak. In terms of training and apprenticeships, the responding firms showed a fair amount of linkages, where training arrangements were reported by 15.65 per cent, 14.91 per cent, and 6.72 per cent of the Buguruni-Malapa, Mbezi Beach kwa Komba, and Keko respondents, respectively. The remaining firms develop their skills either through self-training or family arrangements. Training through the former method was less frequently mentioned than training through the latter method. Indeed, firm owners are often more willing to invest in family-based training because family members are less likely to leave and start their own businesses once they are well trained. Even if they do leave, at least the impact of success or failure in their business accrues within the same family structure.

The evidence on linkages, therefore, indicates that furniture manufacturing firms in the study sites are characterised by weak forward and strong backward production linkages on the one hand, and strong forward, but weak backward, non-production financial linkages on the other hand. The evidence of fairly strong linkages is not surprising because the majority of the firms came into operation over the last seven years or so, which is enough time for them to consolidate their business activities, supply networks, and market outlets. The most important factors for explaining the weak linkages are the limited capacity to accept large orders because of insufficient working capital for expansion, poor processing facilities, low levels of technology, and insufficiency in basic business skills for those managers who reportedly use improper management techniques. The survey captured additional information on the extent to which firms exchange ideas or discuss problems and strategies with other firms and on the frequency in which firm managers visit each other. Some firm owners occasionally exchange ideas with one another while other owners claimed to do so frequently, although these exchanges were largely informal in nature.

4.4.5 Inter-Firm Competition within Clusters

The scope for conflict is greatest at the horizontal level, where producers are often in competition with one another. In reference to fair inter-firm competition, the key questions put to the responding firm owners were about the sources of competition and the location of their main competitors. Two main sources of competition were distinguished: competition between firms within a cluster and competition between firms across clusters. About 3.85 per cent of all firms reported that inter-firm

competitions do exist. Responses about the nature of competitors show that most of them are well-performing firms. Although inter-firm relations vary greatly, the study findings show that competitive relationships are mostly limited to the relationships between firms across clusters. This indicates that clustering has somehow led to collective efficiency.

4.5 Challenges Constraining the Growth Potential of Furniture Manufacturing Firms

One of the specific objectives of this study was to identify challenges affecting the growth of furniture manufacturing firms in the industrial clusters. The interviewed firm owners or managers presented a list of challenges they perceived as constraining the growth of their furniture manufacturing firms (see table 15 below). The list of challenges presents the respondents' subjective and personal views and is a reflection of the growth constraints experienced in more recent years.

Table 15: Challenges Faced by Furniture Enterprises by Cluster Location

	Keko (%)	Mbezi Beach kwa Komba (%)	Buguruni-Malapa (%)	Total (%)
Low level of basic business management skills	14.0	5.7	15.6	12.0
Poor infrastructure in the furniture clusters	24.0	25.7	37.5	28.2
Insufficient raw materials (e.g., wood/timber)	22.0	14.3	15.6	17.9
Cheap imported furniture products	12.0	20	6.3	12.8
Limited access to credit	6.0	14.3	3.1	7.7
Electricity (high cost and erratic availability)	8.0	5.7	3.1	6.0
Poor quality of furniture products	6.0	2.9	12.5	6.8
Limited domestic market	8.0	11.4	6.3	8.5
Total	**100**	**100**	**100**	**100**

Source: Survey data, 2010

As illustrated in table 15, the challenges identified included poor infrastructure within the furniture industrial clusters (28.2 per cent) and insufficient raw materials like wood and timber (17.9 per cent), thus leading to high material costs. Respondents also cited problems posed by, among other things, cheap imported furniture products (12.8 per cent) and low levels of basic business management skills (12 per cent). In addition, some 6.8 per cent of the respondents cited challenges posed by obsolete and inappropriate technology for furniture processing, which results in low quality furniture. Other challenges were reported as severely constraining furniture firm growth, such as the lack of branding and poor product marketing, cumbersome tender regulations, and the fact that government procurement decisions prefer attractive imported and non-durable furniture. In spite of these challenges, micro and small furniture-manufacturing firms in the study sites have survived over time. Moreover, a few firms have even produced relatively good-quality furniture products in the face of intensified competition following import liberalisation. What, then, have been the sources of the relative success of the cluster-based furniture firms? Evidence from this paper suggests that the survival of furniture manufacturing firms and their production lie in the nature of their organisation, most notably agglomeration economies generated by clustering. However, a number of significant challenges have been identified, despite government efforts aimed at developing and nurturing the manufacturing sector in the country. Therefore, based on facts and cluster-specific circumstances at the firm level, there is a need to rethink the current initiatives.

5 Conclusions and Recommendations

5.1 Summary of Findings and Policy Implications

The study has identified a number of owner and worker-related socioeconomic characteristics that influence the growth of firms within the study sites. The important characteristics among firm owners and workers are their ages, household sizes, gender, places of origin, years of schooling, prior experiences in the furniture industry, and apprenticeships. Also important are the number of years of firm operation and whether or not family members have been engaged in furniture manufacturing and firm ownership. This study invites further research, for example, by using econometric procedures to analyse and establish details for explaining how these socioeconomic factors influence the growth of furniture firms in the industrial clusters. However, one special note concerns the level of education (or years of schooling) of the firm owners and workers. The research found that the majority of the owners and workers only obtained a primary education. Since the incentive for improving product quality increases over time and quality improvements are knowledge based rather than experience based, this study recommends supporting furniture industrial cluster growth by providing the relevant knowledge and business skills through basic managerial training programmes.[14]

The quantitative growth indicators, such as capacity utilisation, real value of sales, manufacturing value added, payments to the firm owners, and salaries or wages for workers, also show that on average furniture firms in the industrial clusters grew during the study's timeframe. However, firm growth rates differ remarkably between the individual industrial cluster locations. Firms located in the Keko industrial cluster recorded the highest growth in terms of capacity utilisation, manufacturing value added, sales of own production, and payments to firm workers, followed by either Buguruni-Malapa or Mbezi Beach kwa Komba. At the same time, there were marginal changes in the level of employment over the period of analysis in all the industrial clusters studied. Interestingly, real payments to firm owners and workers were above the estimated food and basic needs poverty lines and were perceived as poverty reducing by both firm owners and workers.

The overall policy implication from the findings is that specific programmes for pro-poor cluster growth are required in order to enhance firm growth in different furniture industrial clusters. Achieving an advanced furniture manufacturing sub-sector means that furniture firms must grow, and this growth depends on improving firm-level management of furniture manufacturing operations and product quality to meet the local, regional, and international market demands. Therefore, this study recommends programmes that focus on improving firm-level management and product quality within the cluster-based furniture-manufacturing sub-sector.

The study also indentified inter-firm relationship mechanisms that, in one way or another, were collectively reported as being helpful and growth supportive for clustered furniture-manufacturing firms. These collective mechanisms include inter-firm sales, subcontracting, lending machinery, purchasing raw materials and inputs, training workers through apprenticeships, marketing products, and product development. The policy recommendation from this finding is that since furniture industrial clusters help markets function by reducing transaction costs through collective efficiency mechanisms, furniture cluster promotion should be included as part a of "market-based, competition-oriented policy". It is also important to make investments in infrastructure, such as roads, electricity, water, and communication systems, without which no modern furniture industries can develop. In addition, the government may trigger furniture industrial clustering processes deliberately as part of its industrialisation strategy, especially when market mechanisms fail to establish industrial clusters.

14 The contents of management training can be general and may be useful for non-clustered industries as well.

Strategies like the initiation of business incubators and the construction of industrial clusters, parks, and zones are some of the means by which industrial clusters may be initiated to support the pro-poor growth of manufacturing firms in Tanzania. At the same time, this will encourage those furniture manufacturing firms that have successfully started improving product quality, marketing, and management to relocate to formal industrial areas. Finally, to enhance agglomeration economies, the government should attract industries producing similar and related products into the industrial clusters.

5.2 Suggested Areas for Further Research

This research examined the growth of micro and small furniture-manufacturing firms that operate in three industrial clusters in Dar es Salaam. It also examined the role of clusters in fostering furniture manufacturing enterprise growth and the connection between this growth and reductions in poverty among enterprise owners and workers. The study concludes that micro and small furniture-manufacturing firms need careful policy considerations if they are to overcome the current challenges facing them. However, additional research needs to be committed to understanding furniture firm growth, the role that industrial clusters play in fostering enterprise growth, and the overall cluster-based furniture industrial development in Tanzania.

Future research could investigate collective efficiency and the growth of cluster-based micro and small furniture-manufacturing firms. The role of human capital accumulation, such as formal education and basic business management training, among firm owners (entrepreneurs) and workers also needs to be researched. Most of the surveys, including the one that informed the current study, were limited to sub-sector coverage and regional distribution. In this case, there is a need for a cluster map and a baseline survey that will provide accurate and formative data on the characteristics and performances of clustered-based, micro and small furniture-manufacturing firms and various manufacturing sub-sectors.

5.3 Limitations to the Study

Although the research findings and conclusions are not affected, it is important to accentuate some of the limitations encountered in the study. First, the study was conducted in three clusters on the basis of only the manufacturing sub-sector in Dar es Salaam, namely the furniture manufacturing sub-sector. Hence, it does not examine other cluster-based manufacturing sub-sectors and regional differences in Tanzania. Second, as with most surveys, the study only captures the circumstances prevailing at the time of interviews, although other similar historic data were provided by the sampled respondents. Third, it is also possible that some furniture firm owners and workers did not provide their true opinions during the interviews because they regarded some of the questions as sensitive. However, this group was small and we assume that these sensitivities did not affect the overall research findings and conclusions.

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Research on Poverty Alleviation, REPOA, is an independent, non-profit organisation concerned with poverty and related policy issues in Tanzania. REPOA undertakes and facilitates research, enables monitoring, and promotes capacity building, dialogue and knowledge sharing.

REPOA's research agenda is concerned with poverty and its alleviation. Our objectives are to:

- develop the research capacity in Tanzania;
- enhance stakeholders' knowledge of poverty issues and empower them to act;
- contribute to policy dialogue;
- support the monitoring of the implementation of poverty related policy;
- strengthen national and international poverty research networks, and
- forge linkages between research(ers) and users.

It is our conviction that research provides the means for the acquisition of knowledge necessary for improving the quality of welfare in Tanzanian society.

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Research on Poverty Alleviation (REPOA)
P.O. Box 33223, Dar es Salaam, Tanzania
157 Mgombani Street, Regent Estate
Tel: +255(0)(22) 270 00 83 / 277 2556
Fax: +255(0)(22) 277 57 38
Email: repoa@repoa.or.tz
Website: www.repoa.or.tz

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