

**AN INVESTIGATION INTO THE IMPACT OF HUMAN CAPITAL ON
THE PERFORMANCE OF SMALL AND MICRO MANUFACTURING
VENTURES (SMMVs) IN TANZANIA: 1997-2001**

By

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**SUBMITTED IN ACCORDANCE WITH THE REQUIREMENTS FOR
THE DEGREE OF DOCTOR OF PHILOSOPHY
(FACULTY OF HUMAN AND MANAGEMENT SCIENCES),
UNIVERSITY OF KWAZULU NATAL, PIETERMARITZBURG,
SOUTH AFRICA**

MARCH, 2005

ABSTRACT

Small, Micro, and Medium Enterprises (SMMEs) and their related entrepreneurship are the focus of considerable policy and research interest as they contribute to mobilization of resources, job creation, and poverty alleviation, the total effect of which is GDP growth, economic development, and other socio-economic benefits. Emerging research in developing countries seems to further confirm that, despite the problems and limitations facing the SMME sector, it is currently the most effective job creator, when many large firms are downsizing and retrenching labour.

This study takes a closer look at the impact of human capital on the performance of Tanzanian Small and Micro Manufacturing Ventures (SMMVs) over the period 1997 - 2001. It involves a random sample of 200 ventures from 18 regions, grouped into the five zones of Mainland Tanzania. Of the surveyed entrepreneurs, 20% had tertiary education, 58% were exposed to some training, 54% had some occupational experience, and 60% had high need achievement (nAch) levels. With regard to employee human capital, 67% of the ventures had employees who attended some kind of training between 1997 and 2001, 49% had employees with less than 7 mean-years of schooling and 51% had employees with more than 7 mean years of schooling. Employee experience in their current firm varied: 50.5% of ventures had mean-employee experience between 1 and 6.25 years, while 49.5% had between 6.3 and 30 years.

Examining the influence of employee and entrepreneur human capital on Tanzanian SMMVs gives the following main findings:

- Entrepreneur need achievement (nAch) level is positively correlated with business performance, but its impact on the number of jobs created, sales, and profit does not seem to be significant, other things remaining equal.
- Entrepreneur education appears to have a significant impact on performance in terms of the number of jobs created and sales.

- Entrepreneur training appears to impact positively on the firm's sales and profit.
- Employee experience in the current firm appears to have a significant influence on performance in terms of sales and levels of profit.
- Employee education and training appear to have significant and positive impacts on sales and profit.

Further, business conduct was considered in terms of recruitment practice, training of employees, keeping of business records, and access to bank financing. The findings show that:

- SMMVs with educated and trained entrepreneurs are better in all the conduct attributes tested in the study, that is, recruiting an educated workforce, keeping records, access to bank financing, and owning of another business.
- Ventures with trained and educated employees are likely to keep more business records, and access more finance from banks than their untrained and uneducated counterparts.
- It has also been found that the capacity to generate jobs between different enterprises is not equal. Edible food processing is likely to generate more jobs than other business activities in the study.

Lastly, by regressing a Cobb-Douglas production function on the data from Tanzanian SMMVs, physical capital, human capital of entrepreneur, and of labour are found to be significant predictors of output performance.

DECLARATION

I, AIRA NELSON ENOCK MKOCHA, hereby declare to the Senate of the University of KwaZulu Natal that this thesis is the result of my original work, except where indicated in the text, acknowledgements, and references. This thesis has not, and is not, being submitted for a degree award in any other university.

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ACKNOWLEDGEMENTS

This research project would not have been completed without the help of a number of people. There are too many to mention them all. To all who contributed to this thesis in any way, I say 'Thank you'. However, there is a need to mention the assistance of some people specifically.

First and foremost, I extend my sincere gratitude to my supervisor, Prof. D. Mahadea, for his diligence, encouragement, support, and patience with my personal weaknesses. I wish to thank Prof. E. C. Bbenkele for his insights and assistance in the initial phase of research proposal formulation.

In addition to my supervisor, I am extremely grateful to the Okumenisches Studienwerk e. V (OSW), which later merged with the Stipendienreferat Evangelischer Entwicklungsdienst (EED), for providing the funds that made it possible to complete this study. I will forever be indebted to the EED.

I also have to mention the support from the staff of the Faculty of Human and Management Sciences and staff of the School of Business during the whole period of the study. They made my stay at the University of KwaZulu Natal, Pietermaritzburg, comfortable. Also, thanks to Mr. Shaun Ramroop for assisting with SPSS statistical analyses and Mr. Byron Abrahams for editing the thesis.

Particular thanks are due to the Tanzanian Ministry of Industry and Trade (MIT), and Small Industries Development Organisation (SIDO), for making available the initial information leading to gathering of data. Without your support, data gathering from entrepreneurs in SMMV's would have been impossible.

I am grateful to all brothers, sisters, and friends for their constant support and encouragement during my years of study.

A special word of appreciation to my friend Tumaini and my children Isaac, Irene and Judith for their patience, love and support.

Finally, special thanks to my mother Lillian for her wisdom and support during my schooling. It is to my mother and my late father that I dedicate this thesis.

DEDICATION

This thesis is dedicated to my parents, Lillian Salim Nyato and the late Nelson Enock Mkocho, for exposing me to education.

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ACRONYMS AND ABBREVIATIONS

BoT	- Bank of Tanzania
CARMATEC	- Center for Agricultural Mechanization and Rural Technology
CTI	- Confederation of Tanzanian Industries
DAWASA	- Dar es Salaam Water Supply Authority
DTI	- Department of Trade and Industry – South Africa
EAC	- East Africa Community
ESRF	- Economic and Social Research Foundation
EU	- European Union
ERP	- Economic Recovery Program
FDI	- Foreign Direct Investment
GDP	- Gross Domestic Product
HDI	- Human Development Index
ICT	- Information and Communication Technology
IDA	- International Development Association
ILO	- International Labour Organisation
IMF	- International Monetary Fund
IS	- Informal Sector
ISIC	- International Standard Industrial Classification
ISS	- Informal Sector Survey
LBSC	- Local Business Service Center
MCHS -	- Muhimbili College of Health Sciences
MFI(s)	- Micro-Financial Institutions
MIT	- Ministry of Industry and Trade (Tanzania)
MNCs	- Multinational Corporations
MSEs	- Micro and Small Enterprises
NBC	- National Bank of Commerce
NESP	- National Economic Survival Program
NGO	- Non-Governmental Organisation
NIC(s)	- Newly Industrialised Countries

NISS	- National Informal Sector Survey
PRIDE	- Promotion of Rural and Development Enterprises - Tanzania
PRSP	- Poverty Reduction Strategy Paper
OECD	- Organisation for Economic Co-operation and Development
OUT	- Open University of Tanzania
RPED	- Regional Program on Enterprise Development
SADC	- Southern African Development Community
SAP(s)	- Structural Adjustment Programs
SBDC	- Small Business Development Corporation
SBE(s)	- Small Business Enterprises
SIC	- Standard Industrial Classification
SIDO	- Small Industries Development Organisation
SME(s)	- Small and Medium Enterprises
SMME(s)	- Small, Micro, and Medium Enterprises
SMMV(s)	- Small and Micro Manufacturing Ventures
SSME(s)	- Small-Scale Manufacturing Enterprises
SSA	- Sub-Saharan Africa
SSE(s)	- Small-Scale Enterprises
TANESCO	-Tanzania Electricity Supply Corporation
TAS	- Tanzanian Shilling
TIRDO	- Tanzania Industrial Research and Development Organisation
TNBC	- National Business Council
TPSF	- Tanzanian Private Sector Foundation
TRC	- Tanzania Railways Corporation.
TTCLA	- Tanzania Chamber of Commerce, Industries and Agriculture
TTCL	- Tanzania Telecommunication Corporation Limited
UCLAS	- University College of Lands and Architectural Studies
UDSM	- University of Dar es Salaam
UPE	- Universal Primary Education
UNDP	- United Nations Development Program
URT	- United Republic of Tanzania

USA	- United States of America
USE	- Universal Secondary Education
VAT	- Value Added Tax
VTC(s)	- Vocational Training Centres

CHAPTER 1

INTRODUCTION, PROBLEM DEFINITION AND RESEARCH OBJECTIVES

1.1 Introduction

In the past three decades, there has been a significant increase in policy and research interest in entrepreneurship in Small, Micro, and Medium Enterprises (SMMEs) in developed and developing countries. The reason for this heightened interest has been the positive role of entrepreneurs in the SMME sector in advancing socio-economic development and job creation (Storey, 1994:166). Stiglitz (2002:59) argues that it takes capital and entrepreneurship to create new firms and jobs.

While unemployment and retrenchment are prevalent in many economies, SMMEs show a remarkable tendency to develop in terms of number, vertical and horizontal growth, and diversification (McDonald, 1999:114). In America, about 1.2 million enterprises were created annually between 1994 and 1999; this is a healthy sign for job creation in the economy (Timmons, 1999:4). However, employment opportunities in the Tanzanian formal sector have declined considerably from 31,713 jobs in 1982 to 28,882 in 1992 (Godius, 1996: 11), and declined further through out the 1990s.

Against the background of rising unemployment in Tanzania, the labour force has been increasing at an annual rate of 0.7 million people in recent years (Kirumba, 1997:74). There is an urgent need to create employment opportunities for the increasing annual number of job seekers in Tanzania. The SMME sector can contribute significantly to job creation, poverty alleviation, and economic growth in Tanzania. Indeed, the SMME sector in Tanzania is the second largest employer after agriculture (Olomi, 2001:3).

Medium and small enterprises (MSEs) employ between 17% and 27% of the adult population of countries in the Sub-Saharan Africa (Daniels and Mead, 1998:45). Also, according to the United Nations Economic Commission for Africa's 1995 study, in 1990, industrial employment represented 11.6% of total employment in Botswana, 30.6% in

Central African Republic, 13.3% in Kenya, 38.47% in Mauritius and 27.91% in South Africa. This indicates that the small-firm sector has considerable employment-creation potential in African economies.

Much of the literature on SMMEs in the rest of Africa emphasised the provision of capital for business start-up as critical for entrepreneurship and economic development (Binks and Vale, 1990:151; Chijoriga and Cassimon, 1999). According to Kasumuni (2003:9), at the end of June 2003, more than 800 billion Tanzanian Shillings (Tzs) were lying as idle capital in Tanzanian commercial banks. Despite this high liquidity, many entrepreneurs there were unable to make use of loanable funds to exploit business opportunities. One could argue that the failure of entrepreneurs in SMME's to use capital resources is either due to a lack of collateral or a lack of skill and knowledge to prepare business plans for loan proposals.

Creation of a business is one thing but running it efficiently to ensure its survival is altogether a different matter. Not all new small businesses are likely to succeed. Small businesses must be capable of efficient utilisation of all resources, including capital and labour.

Today's business environment is highly competitive and is changing fast. Because of the sweeping effects of technological change and competition, human capital development becomes critical for entrepreneurs in SMMEs to cope with domestic and global challenges. Firms that cannot adapt to the changing environmental conditions often do not perform well, and may fail in the long run.

Failure rates seem to vary across countries, from industry to industry, and from one business to another. Published data (Storey, 1994; Binks and Vale, 1990) generally points out that business failure is primarily related to lack of capital, adverse market conditions, lack of experience, insufficient planning, and poor management skills. Various studies have examined the impact of physical capital on SME development in Tanzania.

However, very few studies have considered the impact of human capital on venture performance.

Specifically, this study examines the impact of experience, training, education, and need achievement on the performance of Small and Micro Manufacturing Ventures (SMMVs) in Tanzania. It is presumed that the performance of the small and micro manufacturing sector is affected adversely by poor quality of the labour force, inadequacy of entrepreneurial skills, low need achievement level, low levels of education and training, and lack of occupational experience.

1.2 Conceptual and operational definition of an entrepreneur

Without entrepreneurship, there can be little development in an economy. Despite the increasing frequency with which the term entrepreneurship or entrepreneur is used, entrepreneurship and the entrepreneur remain a rather vague concept. Different scholars define the term differently. Peter Kilby (1971) likened the search for the definition of an entrepreneur to the hunt for the heffalump, a large and important animal that every one in the wood claimed to have seen, but not captured yet.

Theorisation of the entrepreneur and entrepreneurship has been complex and ridden with controversies, as different researchers from different disciplines have not thus far come to a common understanding in conceptualising a uniform framework to study the concept (Drucker, 1985:21; Binks and Vale, 1990:18; Pitsui *et al*, 1997:95). Economists, sociologists, psychologists, and anthropologists have studied the concept within their respective disciplines. This has led to a divergence, rather than a convergence, in the conceptualisation of entrepreneurship.

Ramachandran and Ray (1998) argue that entrepreneurial studies rooted in various academic disciplines have brought a richness of diversity, without sufficient integration. The multiplicity of foci has led to the growth of entrepreneurship in diverse directions. Researchers from one discipline often ignore work produced on the same subject by their

colleagues in other disciplines. Accordingly, “no unifying framework exists in entrepreneurship literature that can bring these diverse theories together for developing a comprehensive theory of entrepreneurship” (Ramachandran and Ray, 1998:41).

According to Casson (1982:9), early economists were the first to use the term ‘entrepreneur’ as one of the factors of production. However, psychologists, sociologists, and political scientists have developed the concept further by studying the contribution of the entrepreneur to the economy at large. One thus notes that entrepreneurship cuts across many fields of study. Below is a summary of some points of view regarding the entrepreneur.

Psychologists consider an entrepreneur as someone with one or more of the following traits: creativity, autonomy, internal locus of control, need for achievement, and risk taking (McClelland, 1961; Jennings *et al*, 1994:107; Mass *et al*, 1999:61; and Chell, 2001:78). The entrepreneurs’ traits could be further categorised into proactivity, achievement orientation, and commitment to others (McClelland, 1978:22). Some of these traits could be enhanced.

According to McClelland (1961), achievement motivation could be inculcated through training in self-reliance, rewarding hard work, and persistence in goal achievement and creating interest in excellence. He argues that education and child-rearing practices that emphasise such values are significant in creating a foundation for strong need achievement.

Anthropologists argue that different societies have different interests, attitudes, and beliefs that produce different patterns of entrepreneurial behavior (Balakrishnan *et al*, 1998: 23). Le Vine (1966:2) further gives an example of certain ethnic groups noted for energy, achievement striving, and enterprise, namely: the Kikuyu in Kenya, the Chagga in Tanzania, Ewe in Ghana, Bamileke in Cameroon, and Ibo in Nigeria.

In the sociological view, being involved in value-adding economic activities is an important condition for being an entrepreneur (Rugumamu, 1997:1). However, at times, these entrepreneurs engage in non-productive activities, such as tax evading, speculating, smuggling, and fraud. In Kiswahili, the term '*walanguzi*' has been commonly used to mean unscrupulous entrepreneurs, those who make profit and progress on other peoples' lack of information and mobility. However, for the purpose of this study, the entrepreneur would be viewed mainly from an economic perspective, as a mover of economic growth, through his value adding activities, to manufacturing output and employment creation.

This study focuses on the productive entrepreneur, someone who is involved in a manufacturing activity. It adopts the definition of an entrepreneur as given by Mark Christopher Casson (1982:23). Accordingly, an entrepreneur is regarded as a person who makes a judgmental decision to undertake a business project by employing resources in the hope of gaining returns. The business project is related to owning and managing a small or micro-manufacturing firm in Tanzania. The terms 'entrepreneur' or 'owner-manager' or 'business owner' will be used interchangeably in this study. This definition also fits most of the economic views of the entrepreneur.

The emphasis of this study is on human capital, that is, the education, training, experience and need achievement levels, of entrepreneurs engaged in Small and Micro Manufacturing Ventures (SMMVs) in Tanzania and that of their respective employees.

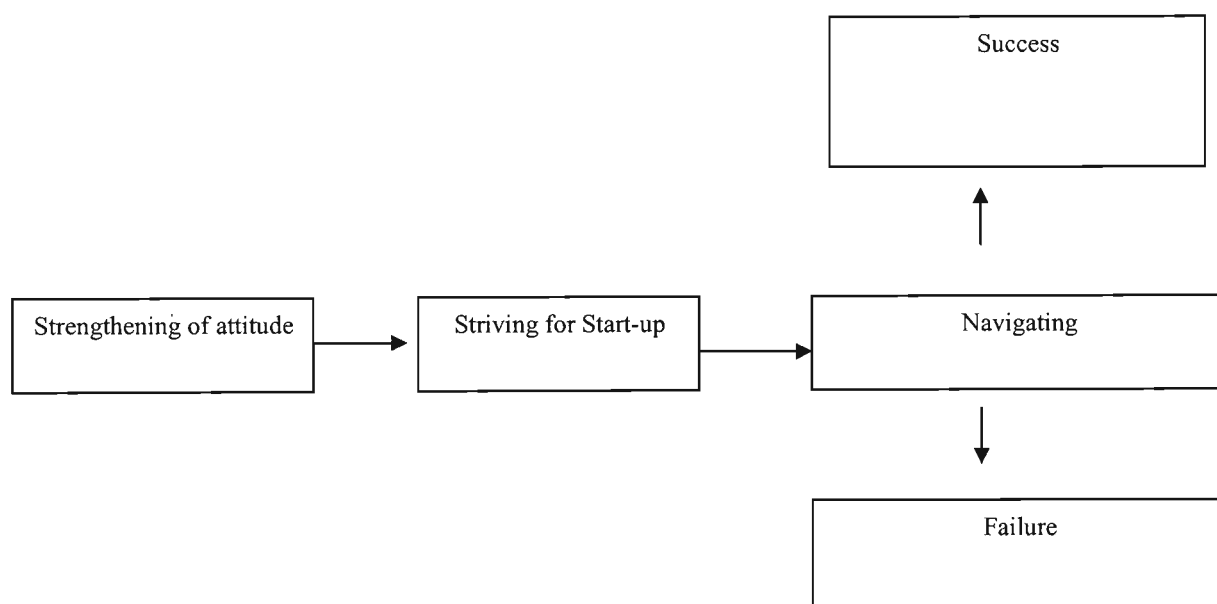
1.2.1 Stages of entrepreneurship

Business entrepreneurship is a creative process. It can be divided into three stages as shown in figure 1.1 (on page 6), (Kristiansen, 1997:36). The first is developing or strengthening of entrepreneurial attitude; the second is striving to start-up; and the last stage is navigating through obstacles to success.

Similarly, Balakrishnan *et al* (1998:27) identified three stages in the enterprise life cycle, namely: start-up, stabilization, and diversification. The authors further claim that the

entrepreneurial dispositions vary across the different stages of small enterprise life cycle. Training and education programs for entrepreneurial development could be designed with a view to meeting specific needs of enterprises at different stages of their life cycle. This thesis tries to focus on the last stage, navigating through acquisition of knowledge, skills, values, and attitudes to success.

Figure 1.1: Three-step model in the development of business



Source: Kristiansen (1997:2)

Therefore, the study attempts to investigate the impact of human capital on the performance of entrepreneurs in existing SMMVs. That is to say, owner managers must be able to account for, and make, responsible judgmental decisions. Entrepreneurs must have the knowledge and skills that are necessary for the adaptability, efficiency and effectiveness of their businesses.

Leebaert (1994:4) argues that entrepreneurship is related to the capacity to seize opportunities and the ability to adapt. Leebaert further claims that these overarching requirements are based upon the entrepreneur's skills and experience. Human capital

qualities and other resources need to endlessly recombine for enhancing the performance of a business venture.

1.3 Aims and objectives of the study

The main objective of this study is to investigate the impact of human capital on the performance of Tanzanian Small and Micro Manufacturing Ventures (SMMVs). The research specifically aimed to examine the impact of education, training, experience, and need achievement level on the performance of Tanzania SMMVs.

The study is an attempt to make a contribution toward a body of knowledge used to develop the Tanzanian SMME sector. Therefore, the study focuses on the following primary and secondary objectives:

1.3.1 Primary research objectives

The following is a list of the primary objectives of this study:

- (i) To investigate the association between human capital and performance of SMMVs.
- (ii) To compare the performance of entrepreneurs with low need achievement level and those with high achievement level.
- (iii) To compare the performance of educated entrepreneurs and their uneducated counterparts.
- (iv) To compare performance of entrepreneurs who have attended training and those who have not attended training.
- (v) To compare the performance of experienced entrepreneurs and of inexperienced entrepreneurs.

- (vi) To compare the performance of SMMV's with experienced workers and those with inexperienced ones.
- (vii) To compare between the performances of SMMV's with educated employees and those with uneducated employees.
- (viii) To compare the performance of SMMV's with trained and those with untrained workers.
- (ix) To investigate whether human capital is a significant determinants of SMMV performance.
- (x) To make recommendations to entrepreneurs and policy makers regarding the importance of human capital on the performance enhancement of SMMVs in Tanzania.

1.3. 2 Secondary research objectives

Below is a list of the secondary objectives of this study:

- (i) To compare the conduct of business between more educated entrepreneurs and their less educated counterparts.
- (ii) To compare the conduct of business of entrepreneurs who have attended training and those without training.
- (iii) To compare the conduct of business of enterprises with trained employees and those with untrained employees.
- (iv) To compare the conduct of business of ventures with more educated employees and those with less educated employees
- (v) To compare job creation between SMMVs by their manufacturing activities.
- (vi) To compare job creation between SMMVs by their zonal locations.

The conclusions arising from this study should be of practical benefit to those concerned with improving the performance of Tanzanian SMMVs through human capital development. Therefore, it is hoped that the study should enhance our knowledge of how to further promote and develop the Tanzanian SMME sector.

1.4 Research questions

Related to the objectives mentioned above are research questions to be answered by this study. They divided into primary and secondary research questions.

1.4.1 Primary research questions

- (i) Is there any association between human capital and SMMV performance?
- (ii) Is there a significant performance differences between entrepreneurs with high need achievement level and those with low need achievement level?
- (iii) Is there a significant difference between the performance of educated entrepreneurs and their uneducated counterparts?
- (iv) Is there a significant difference between the performance of entrepreneurs who have attended training and those who have not attended training?
- (v) Is there a significant difference between the performance of more experienced entrepreneurs and less experienced entrepreneurs?
- (vi) Is there a significant difference between the performance of SMMVs with employees that are more experienced and those with less experienced employees?
- (vii) Is there a significant difference between the performance of SMMVs with educated employees and those with poorly educated employees?
- (viii) Is there a significant difference between performance of SMMVs with trained employees and those with untrained employees?
- (ix) Can human capital predict performance of SMMVs?
- (x) What recommendations are appropriate for improving SMMV performance in Tanzania?

1.4.2 Secondary research questions

- (i) Is there a significant difference in the conduct of business between more educated entrepreneurs and less educated ones?
- (ii) Is there a significant difference in the conduct of business between entrepreneurs who have attended training and those who have not?
- (iii) Is there a significant difference in the conduct of business between entrepreneurs with trained employees and those with untrained employees?
- (iv) Is there a significant difference in the conduct of business between entrepreneurs with educated employees and those with poorly educated workers?
- (v) Is there a significant difference in the average number of jobs created by SMMVs in various manufacturing activities?
- (vi) Is there a significant difference in jobs generated by SMMVs that are grouped by zones?

Related to research objectives and questions discussed in sections 1.3.0 and 1.4.0 respectively, are the propositions and research hypotheses. The propositions and research hypotheses will be discussed in chapter 4.

1.5 Scope of the study

In order to keep the study within manageable limits, the scope of the research was limited to four human capital elements of entrepreneurs engaged in SMMVs, and three human capital elements of employees in their respective enterprises. Secondly, only five areas of manufacturing activities were included, namely; woodworking, tailoring and sewing, edible food processing, animal food processing, metalwork, and leatherwork. Others, like beverages, tobacco and cigarettes, textiles manufacturing, manufacture of paper products and printing, and petrol refining were excluded, as they employed more than 49 employees. The operational definition of SMMVs for this study is explained later in section 4.1.1.

The main reason for selecting SMMVs is because the sector provides the most opportunities for job creation in both developed and developing countries (Fujita, 1998:29). According to the United Nations Economic Commission for Africa's 1995 study, the manufacturing sectors in African countries accounted for 12% of GDP between 1990 and 1993.

Thirdly, the study focuses on formal SMMVs in Tanzania. The informal sector was therefore excluded from the study, although it also plays a significant role in job generation. McDonald (1999:115) claims that the concept 'informal sector' is based upon the dual structure of economic activities found mainly in developing economies (like Tanzania). Informal sector activities are not recorded, not registered, partially illegal, and often transient (Mahadea, 2000:81).

1.6 Underlying assumptions

There are three basic assumptions underlying the design of this research. First, the development of the SMME sector cannot take place in isolation. It needs to be seen in relation to the socio-political and economic development of the country as a whole. The way in which Tanzania attempts to stimulate economic growth, and its policy regarding economic development and poverty alleviation would impact on the performance of the SMME sector.

The second assumption is that the desire by the Government of Tanzania (and many other governments) to promote the SMME sector for national economic growth is visible (Daniel & Mead, 1998:45). This is not to say that employment opportunities will, in future, only be created in Small and Micro Manufacturing Venture sub-sector. Other sectors will continue to provide employment opportunities as the economy improves; similarly, they will demand an improvement in human capital elements that are relevant to the needs of each sector. Hence, economic growth through self-employment in SMMVs is an alternative, but not the only one.

Finally, it is assumed that the SMME sector consists of a vast variety of activities, which are very different from one another. A common distinction is made using the International Standard for Industrial Classification (ISIC). But within each of these, there are again different types of businesses with different constraints and needs. Therefore, the need for development of human capital and requirements will vary between sub-sectors and between activities within each sub-sector.

1.7 Prior research in this area

Investigations of catalogues of theses and dissertations that were accepted for degree by South African Universities, the Business Periodical Index and Sabinet [online] do not suggest that research has been conducted into the impact of human capital on the performance of SMMVs. Also, research into South African Universities, South African journals and articles, and databases on current and completed research do not seem to suggest that research has been conducted into the impact of human capital on SMMV performance.

Few studies acknowledge the existence of the need for training of owners of SMMEs (Govender, 1990:96; Mass, 1996:59). Herron (1991) conducted a lead study on whether skills predict profit in the states of Georgia and Carolina in USA. Herron (1991:212) suggested the need for future studies to investigate the impact of skills of entrepreneurial teams on performance of business enterprises.

1.8 Organisation of the thesis

The thesis is organised into seven chapters. Following this introductory chapter, chapter two presents an overall profile of the Tanzanian economy. The chapter includes subsections on a macroeconomic overview of Tanzania after independence, after the Arusha declaration, and economic reforms. The chapter also discusses the Tanzanian manufacturing sector and human capital development in Tanzania.

It will be shown that in following the socialist approach, Tanzania failed in its development. The SMME sector can play a significant role in enhancing the development of its economy, in much the same way as some of the Southern African Development Community (SADC) member countries, specifically Botswana, Malawi, and South Africa.

The third chapter reviews the human capital literature, describes the importance of human capital at macro and micro-economic levels, and explores the linkage between human capital and business performance.

Chapter four covers research design, methodology, and the various hypotheses to be tested using parametric and non-parametric statistical approaches.

Chapter five presents a profile of entrepreneurs in Tanzania. It describes the sample in terms of location, size, activities engaged in, and age classification of entrepreneurs. The chapter also describes entrepreneur and employee characteristics in terms of education, training, and business experience.

The results of the empirical survey are presented in chapter six. The chapter begins with the examination of the impacts of entrepreneurs' need achievement level, education, training, and experience on the performance of the surveyed SMMVs. The chapter also investigates the impact of employee education, training and experience on the performance of the surveyed SMMVs. The last part of the chapter covers the results of multiple regression analyses, which were used to examine the contribution of human capital in predicting performance of manufacturing firms in Tanzania.

The last chapter presents the summary and conclusions of the study. This chapter summarises aspects relating to the research rationale, and discusses the main research findings for policy recommendations. It also suggests areas for further research.

1.9 Conclusion

There has been a heightened interest in entrepreneurship in small, micro, and medium enterprises worldwide. SMMEs are considered to have a significant role in job creation and socio-economic development. Various studies examined the impact of capital on the performance of SMMEs. However, only a few studies have dwelt on the impact of human capital on the performance of these enterprises. This research is an attempt to fill this gap.

The chapter has covered research objectives and research questions to be answered by this study. Also, the chapter explained the scope of the study, assumptions, and a statement on prior research in the area of study.

The last part of the chapter elaborates the way in which this thesis is organised. The next chapter will provide an outline of the economy of Tanzania, an overview of the SMME sector, and will operationalise the definition of the Tanzanian SMMVs.

CHAPTER 2

OVERVIEW OF THE TANZANIAN ECONOMY AND SMME SECTOR

2.1 Introduction

The objective of this chapter is to provide some background information on the Tanzanian economy. Entrepreneurship, as manifested in the creation and development of a business, does not operate in vacuum. Economic, social, political and technical factors impact on the development of firms. Accordingly, insights are provided into the context within which SMMEs operate in Tanzania. This chapter consists of two major parts: an overview of the Tanzanian economy including pre- and post-independent Tanzania, the Arusha Declaration and economic reforms, also included is an overview of the SMME sector.

The chapter shows that during the period between independence and the mid-1980s, not much was done to improve economic development, hence here are economic reforms to correct the situation. The sub-section on economic reforms examines the post-socialist policies of Tanzania, particularly its economic development strategies that redefined the role of the state. The government recognises that it has a responsibility to facilitate and stimulate the private sector and other economic agents. Therefore, macroeconomic conditions in Tanzania help us to understand the environment in which SMMEs operate.

The objectives of reform measures are economic growth, poverty alleviation, and employment creation. Within these, the development of the SMME sector is regarded as the core activity that results in meaningful economic development. The other half of the chapter focuses on the SMME sector in general and on the Tanzanian context in particular. It contains the definitional problems related to small businesses, the constraints facing SMMEs, SMME development in selected countries and a description of the Tanzanian SMME sector.

2.2 Physical location

Tanzania (URT) is located along the Eastern coast of the African continent. The country has a common border with Kenya and Uganda to the North, with Burundi, Rwanda and the United Republic of Congo to the West, and with Zambia, Malawi and Mozambique to the South. About half of the country is surrounded by water. The Indian Ocean, with a coastline of over 800 km, is on the eastern border. In the West is Lake Tanganyika, in the Southwest is Lake Malawi and in the North is Lake Victoria. Tanzania covers an area of 945,087 sq. km (Fraser, 1991:253).

The name Tanzania dates from the April 26, 1964 merger of Tanganyika and the two Indian Ocean islands of Zanzibar and Pemba. Tanganyika territory won its independence peacefully from the British trustee government in 1961, while the Zanzibar islands won their independence through the bloody revolution of January 12, 1964 (Kaniki, 1979:345).

Dar es Salaam is the capital of the country - the economic, administrative and political heart of the country. It is the largest city, with a population of about 2.5 million. Tanzania has a population of about 34.6 million people (URT, 2002). This population is made up of over 120 different African ethnic groups. There are also a few Asians of Arabic and Indian origin living mainly in the urban areas.

2.3 Macroeconomic overview

Tanzania has a mixed economy in that both Government- and privately-owned organisations operate there. Soon after attaining independence in 1961, Tanzania espoused a socialist strategy. Socialism did not result in the desired economic growth, hence reforms and restructuring became necessary. Economic Recovery Programs (ERP) emphasise a reliance on market institutions and forces and the need for increased private sector participation in the development process.

According to Tibandebage *et al* (2001:11), Tanzania's Gross Domestic Product (GDP) per capita was US\$ 240 in 1996. According to a Bank of Tanzania (BoT) (2003:1) Report, real GDP grew by 6.2% in 2002, up from 5.7% attained in 2001. Other social indicators, comparing Tanzania to the averages for developing countries and developed countries, are shown in table 2.1(on page 18). These statistics indicate that Tanzania is one of the poorest countries in the World, clearly reflecting that a large number of Tanzanians are poor. Experience in other countries shows that to reduce poverty, it requires both economic growth and human capital development (Kundi and Toba, 2000:1).

Various sectors in Tanzania contribute to the country's GDP. However, for a number of years the agricultural sector has accounted for the larger share of Tanzania's GDP. As appendix 2.1 (on page 331) shows, agriculture accounted for 48.2% of the GDP in 2000, and this was followed by the trade and industries sector, contributing 16% to the GDP in the same period (URT, 2001a: 16). The increasing role of the trade and industries sector is also shown in the BoT Report (2000b).

The Tanzanian economy has progressed through several shocks since independence. There is no agreement on the causes of these shocks. One could argue that poverty in Tanzania is a consequence of the interplay of several factors, amongst which poor economic performance, economic mismanagement, backwardness, weak political leadership, poor national policies, corruption, and an unfavorable world economic order can be included. These factors can be categorised as external and internal factors. Some sympathisers argue that the only causes of ups and downs are exogenous factors; others consider the cause to be the weakness of domestic policies (Caplan, 1992:104).

Table 2.1: Poverty and social indicators: Comparison between Tanzania and averages for developing and developed countries

Indicators	Unit of measure	Tanzania	Average for developing countries	Average for developed countries
GDP per capita (1996)	US \$	240	970	16394
Population below poverty line	Percent	51	n.a	n.a
Under five mortality rate (1997)	Per 1,000 live-births	160	88	9
Maternal mortality	Per 100,000	200-400	384	28
Literacy rate	Percent	76	85.5	99.8
Primary school enrollment	Percent	74	77	100
Secondary school enrollment	Percent	7	35-47	n.a
Doctor-patient ratio	Patients per doctor	23000	5767	344
Severe malnutrition	Percent	29	30	n.a
Average life expectancy	Years	52	63.3	74.5
Families with water supply at home	Percent	11	70	n.a
People living in temporary settlements	Percent	60-70	30-60	n.a

Key: n.a = not applicable

Source: Tibandebage *et al* (2001:11)

According to some policy analysts, a series of droughts in many parts of the country, the collapse of the East African Community (EAC) in 1977, and the war to liberate Uganda

in 1979-80 contributed significantly to Tanzania's economic problems. Other possible factors include a decline in commodity prices on the international markets, and a rise in international real interest rates.

The economic problems of Tanzania have necessitated the initiation of several reforms and structural adjustment measures. Until the 1990s, fiscal instability was severe. Structural and policy reforms are still under way. One can perhaps better understand the Tanzanian economy by looking at it from a historical perspective.

2.3.1 Background

Pre-independent Tanganyika was a predominantly peasant economy, even before it fell under German rule in 1884. The German, and later British, colonialists initiated some economic programs, most of which were in response to the economic demands of their countries of origin. Colonialism restructured the economy in such a way that it produced goods and services that complemented the needs of the colonizing power. The emphasis of the German and British regimes was mostly on agriculture. The leading cash crops then were coffee, cotton, tea, sisal, cashew nuts, sugar, cocoa, pyrethrum, and groundnuts. Staple food crops were maize, cassava, sorghum, millet, rice, wheat and plantains.

According to Rweyemamu (1979:69), cottage industries such as weaving, blacksmithing, pottery, and woodworking existed even during the colonial period. However, many of them did not survive the competition of imports and colonial regulations (Rugumamu, 1997:4).

2.3.2 Post-independent Tanzania

When Tanzania attained its political independence from Britain in 1961, its Government initially followed a mixed economic strategy. In 1967, Tanzania started putting into practice the Arusha Declaration, by moving toward a socialist development strategy or

'ujamaa', as it is called in Kiswahili. According to Vosloo (1994a: 112), the result of this was government ownership of most enterprises and a distrust of private sector initiative.

On independence in 1961, the government did not inherit a strong industrial sector (Roy, 1992:99; Nsana, 1994:25). The industry structure consisted of small-scale agro-processing, extractive industry, crafts, and some light manufacturing (Phillips, 1979:87). Rweyemamu (1979:69) observes that over 274 of the manufacturing establishments inherited after independence were export oriented, and were characterised by low labour productivity.

Between 1964 and 1966, the government did not change the economic structure inherited at independence. Industrial output in Tanzania was relatively very low. In 1966, the actual share of industrial output in total production was 6.6%. During the same period, the agricultural sector continued to show considerable promise: agricultural growth was at about 4%, while the average Gross National Product (GDP) annual growth rate was more than 6%. During this period, only members of the Asian community accumulated a mass of business confidence, managerial skills, and capital for investment.

Tanzania's post-independence industrial strategy was import substitution. As a result, textile mills were established. However, Tanzanian mills could not match the competitive imports from Kenya and Uganda. In 1964, Kenya, Uganda and Tanzania agreed to balance the unequal industrial development between them (Rweyemamu, 1979:70).

2.3.3 Arusha Declaration

Six years after independence, the Tanzanian leadership proclaimed an economic policy based on 'socialism and self-reliance' (the Arusha Declaration). To some, this was the first experiment by Tanzanian policy makers. The declaration set out to achieve the following objectives: to control the national economy in order to minimise all kinds of exploitation; to expand national wealth; and to distribute this wealth fairly among individuals, groups, and regions (Tibandabage *et al*, 2001:1).

To achieve the above objectives, the government-emphasised egalitarianism, basic needs, self-reliance, increased control of economic transactions, and nationalisation of the major means of production. Hence, manufacturing industries, commercial banks, insurance companies, wholesale trading companies, large agricultural estates, rental properties, private medical care, and other activities, were nationalised, and farms were organised on the basis of the ujamaa village. In ujamaa villages farming was collective and the harvests were shared (Paulson and Gavin, 1999:61).

According to Rugumamu and Mutagwaba (1999:71), in 1969 a 'leadership code' was instituted, according to which leaders in the government or ruling party, and those in public enterprises, were prevented from holding shares or accepting directorship in private enterprises. The code also prohibited leaders from owning rental property, employing wage labour, and receiving more than one salary. Between 1969 and 1971, the GDP growth rate slowed down to 3% per annum, and growth in manufacturing, agriculture, and exports decreased while imports increased tremendously.

In 1974 the Price Control Act was passed and the National Price Commission (NPC) was set up to implement a national price policy. The functions of the National Price Commission were to:

- (i) Determine reasonable price structures on a national basis and provide orderly variations when necessary,
- (ii) Ensure that prices of goods and services in Tanzania were compatible with and conformed to the principle of socialism and to the political, economic, and social aspirations of the people of the United Republic of Tanzania, and to
- (iii) Perform such other functions as are conferred on it by this Act (United Republic of Tanzania, 1974).

The NPC resulted in an inefficient allocation of resources in the economy (Rice, 1979:109). During the same period, world oil prices increased considerably.

Consequently, Tanzania sought to make a withdrawal from the International Monetary Fund (IMF) quota. As a result, money supply increased, raising inflation from 6.5% in 1970 to 19.5% in 1974.

Between 1976 and 1977 world coffee and tea prices increased, resulting in a sharp increase in export earnings and an accumulation of foreign reserves. With a relative abundance of foreign exchange, Tanzania was able to implement its industrial strategy by focusing on import substitution. However, in 1978 coffee and tea prices declined sharply, resulting in an increase in trade deficit. The situation worsened when the war between Tanzania and Idi Amin of Uganda began in 1979. Tanzania had to import arms and war-related supplies. At the same time as the Uganda war, oil prices increased. In 1979, Tanzania expanded the money supply considerably. As a result, the inflation rate jumped from 6.9% in 1976 to 30.3% in 1980 (Sarris and Van den Brink, 1994:265).

2.3.4 Economic reforms

The beginning of 1980 saw signs of the collapse of the economy of Tanzania. The GDP had declined to around 20%, official import expenditure was about 27% of GDP, and export earnings stood at 15% of GDP. In 1980, official import expenditure was US\$ 1,249 million, while export receipts stood at US\$ 687 million. The balance of payment was alarming, as table 2.2 (on page 24) shows (Sarris and Van den Brink, 1994:268).

The shortage of foreign exchange adversely affected the economy, especially the manufacturing sector. Industrial capacity was underutilised due to lack of infrastructure and foreign exchange to acquire inputs. To correct the situation, in 1980 the Tanzanian government introduced internal adjustment measures through the National Economic Survival Program (NESP). The NESP emphasised redistribution of income and social services. This survival program entailed an increase in taxation of salaried workers and an increase in official producer prices. By 1981, economic improvement could not be evidenced from the NESP. Exports in 1988 (US \$ 499.4 million) were about 40% lower

than in 1981 (US \$ 884.8 million) (Table 2.2, page 24). As inflation rose, productivity of both labour and capital declined.

From 1982 to 1985, the World Bank introduced the Structural Adjustment Program (SAP) as a substitute of the short-lived NESP. The aim of the SAP was to restore the economy. Measures were introduced to curb public expenditure deficits, reduce inflation, improve the balance of payment, and increase economic investment (Mbilinyi and Shundi, 1999:43).

According to Tibandebage *et al* (2001:2), the SAP did not succeed in articulating economic reforms and in reducing distortions in the market for products and for factors of production. As a result, new economic measures were introduced after further deliberation with the World Bank and IMF.

In 1986, a comprehensive economic reform program was initiated, namely the Economic Reforms Program 1 (ERP I), covering the period between 1986 and 1989. ERP I was successful only in improving economic indicators at the expense of social services. In 1989, ERP II was introduced with the same objective as ERP I, and with a recognition of the social dimensions of the structural adjustment program.

The IMF and World Bank conditions included large devaluation of the Tanzanian Shilling (Tzs.), reductions in government expenditure, public sector borrowing, money supply, and reduction in the number of parastatals. The conditionalities also included an increase in interest rates, export crops, and a liberalisation of external and internal trade. Tanzania considered the conditions unrealistic; hence, there was only a small devaluation of the Tanzanian Shilling (Tzs) (1US \$ = Tzs 17 in 1986). Since the IMF and the World Bank considered the measures taken by Tanzania minimal, financing from these institutions and other potential donors did not come through.

Table 2.2: Balance of payments for Tanzania (in million US \$)

Year	Exports Goods/ Services (1)	Total Transfers (2)	Total Receipts Exports /Transfers. (3)	Imports Goods/ Services (4)	Current Account Surplus (3 + 4) (5)	Long Term Capital (net) (6)	Basic Balance (5 + 6) (7)
1970	321.8	12.8	334.6	-370.2	-35.6	71.6	36.0
1971	349.7	5.8	355.5	-455.2	-99.7	137.7	38.0
1972	411.7	-4.1	407.6	-473.3	-65.7	108.3	42.6
1973	455.8	4.9	460.7	-568.2	-107.5	155.3	47.8
1974	488.4	49.2	537.6	-822.9	-285.3	117.6	-167.7
1975	391.3	102.3	493.6	-823.6	-330.0	170.5	-159.5
1976	633.2	54.6	687.8	-722.3	-34.5	102.4	67.9
1977	656.4	114.7	771.1	-843.5	-72.4	100.7	28.3
1978	624.2	164.0	789.2	-1262.6	-473.4	136.0	-337.4
1979	697.2	174.8	782.0	-1218.5	-346.5	225.4	-121.1
1980	686.6	128.7	815.4	-1249.0	-433.6	166.3	-267.3
1981	884.8	130.3	1015.1	-1187.0	-171.9	204.5	32.6
1982	530.2	119.2	649.4	-1030.4	-381.0	167.9	-213.1
1983	486.3	103.4	589.7	-785.7	-196.0	177.7	-18.3
1984	480.3	158.6	638.9	-853.4	-214.5	89.7	-124.8
1985	432.2	456.3	889.7	-1036.5	-147.4	-39.5	-186.9
1986	456.6	474.1	930.7	-1105.0	-174.3	-24.7	-199.0
1987	447.1	707.0	1154.1	-1419.4	-265.3	-36.5	-301.8
1988	499.4	722.0	1221.4	-1479.8	-258.4	31.8	-266.6

Source: Sarris and Van den Brink (1994: 268)

Official markets, resulting from state involvement in production and marketing of goods and services, were characterised by inefficiency, goods and services were in short supply, and pricing was not realistic. Many citizens were forced to operate through unofficial

markets, hereinafter called parallel markets, that emerged to correct the distortion rendered by a planned economy, by making goods and services available at realistic market prices. Parallel markets were not limited to supplying food and basic consumer goods (sugar, soap, kerosene, etc) only - they supplied foreign exchange and all other products that were under state control (Sahn, 1994:371).

In response to flourishing parallel markets, Tanzania introduced a crackdown on parallel activities through the 'war on economic saboteurs' in 1983. The introduction of the Leadership Code, the Arusha Declaration, and the 'war on economic saboteurs' show that during the period of Tanzanian socialism, self-employment, entrepreneurship and the private sector as a whole were viewed as politically undesirable.

In the words of Rugumamu and Mutagwaba (1999:77):

“the two decades of inimical policies and attitudes toward entrepreneurs in Tanzania left an indelible mark on the society. ... the role of the state will have to undergo a transformation process from that of an instrument of control and graft to that of liberator and facilitator of private initiative”.

In the mid-1980's, Tanzania implemented far-reaching reforms in the political system, economic management, and government administration. In 1985, the first President of Tanzania, Mwalimu J. K. Nyerere, resigned and Mr. A. H. Mwinyi assumed the Presidency of Tanzania. This transition was associated with an increased pace in economic reforms. The programs involved liberalisation of virtually all the sectors of the economy, and privatisation and retrenchment of surplus workers from the civil service and other public institutions. The private sector is considered primary in the generation of economic growth, while the government takes a facilitation role.

By 2000, the economic reform programs that commenced in 1986 had converted the planned economy into an almost free-market one. Trade, exchange rates and interest rates were fully liberalised, more than 250 out of 400 state-owned enterprises had been privatised, and the number of public sector workers had been reduced from 355,000

people in 1992 to 270,000 people in 1997. Public monopoly in the financial sector had been broken. There were now more than 20 private banks and financial intermediaries accounting for nearly 80% of total assets in the banking system (EAC Report, 2001a).

In 1999/2000, the major commercial bank in Tanzania, the National Bank of Commerce (NBC), was privatised, and the National Micro-finance Bank (NMB) came under private management. Privatisation of other major public enterprises, including the Tanzania Telecommunication Corporation Ltd. (TTCL), the Tanzania Harbors Corporation, the Tanzania Electricity Supply Corporation (TANESCO), the Dar es Salaam Water Supply Authority (DAWASA), and the Tanzania Railways Corporation was still in progress.

Moreover, several institutions were established in the 1990s by the private sector itself to provide mechanisms for interaction and consultation with the government. These organisations include the Tanzania Chamber of Commerce Industries and Agriculture (TCCIA), the Confederation of Tanzanian Industries (CTI), the Tanzania Private Sector Foundation (TPSF), and the recently established National Business Council of Tanzania (TNBC).

According to the IMF and the International Development Association's joint staff assessment (Gondwe *et al*, 2000:6), Tanzania has already made significant progress in the ongoing macroeconomic and structural reforms. The reforms address essential policy incentives and institutional constraints to private sector development and growth.

Gondwe *et al* (2000:6) further shows that reforms have included strengthening of tax administration and expenditure control mechanisms, and restructuring of the financial system. Also included were the implementation of performance budgeting, the privatisation of remaining public enterprises, the strengthening of the regulatory framework for main utilities, and the improvement of the business environment.

With regard to political reforms, a multiparty democracy system was introduced in 1992. The first multiparty elections were held in 1995, the second in 2000, and the third are likely to be held in 2005.

By 1996, Tanzania had committed itself fully to reforms in the spirit of the World Bank and the IMF. As a result, the country has made significant progress in restoring macro-economic stability. The inflation rate has been controlled and was reduced from more than 30% in 1995 to 5.1% in June 2001. The overall fiscal balance has registered a surplus of around 0.8-1.2% of GDP in the period 1997-2000. Foreign reserves increased from 1.5 months of merchandise imports in 1995 to 4.5 months in early 2001 (EAC Report, 2001b; URT, 2001a).

A BoT Report (2000a: 9) shows the real GDP growth rate was 4.7% in 1999, reaching 4.9% in 2000 (BOT, 2000b). The BOT Report (2000a: 7) reveals that real GDP was projected to grow by 6.2% in 2002, while the inflation rate was expected to decline to 4.4% during the same period. Other monetary policy objectives for 2000/01 focus on containing the expansion of money supply (M2) within a band of 9-11%. Allowing credit to the private sector to grow by 28.3% from the 2000 level and attaining a gross foreign exchange reserve of US\$ 764.0 million (equivalent to four months of import goods and services) by June 2001 were among other monetary objectives.

Economic reforms benefited the Tanzanian economy in terms of reduced inflation rates, budget deficits, and positive economic growth rates. However, these reforms had some side effects:

- (i) There was a decline in access to credit among micro and small enterprises
- (ii) Class inequalities increased between gender, ethnic groups, regions and districts
- (iii) A large number of wage employees in the formal sector were retrenched due to downsizing

Indirect approaches that rely on trickle down and functioning of the macro-economy may not benefit the poor. The following section presents an overview of the manufacturing sector to which small-scale manufacturing enterprises belong.

2.4 Manufacturing sector in Tanzania

For the purpose of this study, performances of small and micro manufacturing enterprises are considered over the period 1997 to 2001. The statistics provided in this section should be read with caution. According to Mans Soderbom and Teal (2002:7), official statistics of the manufacturing sector in Tanzania suffer from several shortfalls, in terms of coverage and methodological consistency.

As stated above, effective economic reforms in Tanzania began in 1986, following the end of Mwalimu J. K. Nyerere's post-independence era. The period prior to 1986 was one of relative and absolute decline of the manufacturing sector. Manufacturing output fell at an average rate of 3.6% per annum, and the contribution of the manufacturing sector to the overall GDP fell from 13% to 7.9% in 1986. In 2000, the contribution of the manufacturing sector to the GDP was 7.9% (UNDP, 2002:6). The overall effect of restructuring and privatisation is to improve enterprise efficiency, to reduce budget deficits and to create jobs. According to the East African Community's (EAC's) Report (2001b), capacity utilisation in Tanzania has risen from 20% in 1990 to around 50% in 2000. The report further shows that Tanzania's manufacturing sector remains to be the most reliable source of government revenue in terms of import sales tax, corporate, and income tax. This sector also accounts for over 50% of government annual revenue collection.

According to the 1999 economic survey (URT, 2000:151), the following improvements were registered in the Tanzanian manufacturing sector: labour employment increased from 137,014 in 1998 to 144,538 in 1999. This sector employed 48% of the total monthly wage earners, making it the largest urban employer. The resulting employment growth varied between regions, with Dar es Salaam, Arusha, Morogoro, Iringa, Kilimanjaro, and

- (iv) Enrollment of students at primary and secondary schools and universities declined due to the rising costs of education, associated with cost sharing and the privatisation of education (Mbilinyi and Shundi, 1999:54).

The major weaknesses of Tanzanian economic reforms can be viewed as twofold. First, there is an overemphasis on the agricultural sector and trade sector, at the expense of the manufacturing sector. Despite the agricultural sector's employing a large share of the Tanzanian labour market, subsistence smallholders, using rudimentary tools and equipment, and poor technology dominate this sector. Unpredictable rainfall, poor rural infrastructure, and inadequate rural financial services also negatively affect the agricultural sector. As a result, the agricultural and trade sectors cannot absorb the available labour force, and those entering the labour market every year. In a study of 50 countries over the period of 1976 and 1992, Martin and Mitra (2001:417) found evidence of economic growth in countries emphasising both agriculture and manufacturing. Thus, the manufacturing sector in Tanzania needs to be rejuvenated through a balanced economic strategy that supports agriculture, trade, and manufacturing.

The second shortfall of Tanzanian economic reform is an overemphasis on the macroeconomic reforms that transformed Tanzania from a planned to a market economy. The assumption was that macroeconomic reforms would be the cure for all - the effects were expected to trickle down. Surprisingly, poverty and unemployment increased. Tanzanian economic reforms need to focus on individual economic sectors, like SMME, in manufacturing activities.

According to Cortijo and LeBrun (as cited in White *et al*, 2001), "Over the last decade there have been substantial liberalisation and other policy reforms in Tanzania. However, the policy reforms confront more general economic problems while ignoring the poor. Targeting the poor involves not only rearranging the public subsidies but also addressing the constraints that prevent the poor from accessing these services".

Mwanza registering higher employment growth rates than other regions during the period 1998-1999. In 2000, the manufacturing sector had 153,932 employees, representing a 6.5% increase in employment in the Tanzanian manufacturing sector (URT, 2001a: 152).

Manufacturing activities in Tanzania are relatively small and still at the infancy stage. The manufacturing sector's contribution to GDP averaged 8.7% over the period 1986-1999. The activities concentrate on the manufacture of simple consumer goods: food, beverages, tobacco, textiles, furniture, and wood allied products. The majority of these industries were previously established as part of an import substitution strategy (EAC Report, 2001b). A summary of some of the major manufacturing industries is presented below.

2.4.1 Food, beverages, and tobacco

Food manufacturing in Tanzania includes manufacture of dairy products, canning and preserving of fruits and vegetables, canning of fish and similar foods, manufacturing of animal and vegetable oils, grain milling and baking, as well as preparing of animal feed. According to the 1998 economic survey (URT, 1999:137), production of biscuits, spaghetti, wheat flour, and maize flour increased by 35% in 1998 as compared to 1997.

Beverages include the distilling of ethyl alcohol, rectifying and blending of spirits, and the manufacture of wines, cider, and beer. The 1998 economic survey further shows that beer production increased by 15.1% as compared to 1997. Also included in this sub-sector are the production of soft drinks and carbonated waters, and the bottling of natural spring and minerals waters.

2.4.2 Textiles, clothing, leather, and footwear

Activities undertaken in this category include spinning, weaving, and finishing of textiles, the manufacture of made-up textile goods, knitting, and the manufacture of carpets, rugs, cordage, rope, and twines. Textile production increased from 45,546,000 square meters in

1998 to 49,736,232 square meters in 1999. This production level has not been reached since 1994 (URT, 2000:153).

Leather and footwear activities include tanning, leather finishing and the manufacture of products from leather, such as luggage, handbags, and purses. The leather sub-sector was the first to be identified for privatisation. Three large tanneries and two shoe-making factories were privatised.

The leather and footwear sub-sector was estimated to employ 3,912 people in 1998. According to the UNDP Report (2002:8), the sub-sector employed 4,500 people in 2000. In this sub-sector SMMEs are the main producers, contributing about 45% of total production. However, the sub-sector is facing stiff competition from imported products (URT, 1999:136).

2.4.3 Timber and timber products, excluding furniture activities

This sub-sector includes sawmills, wood mills, and other manufactured goods. Also included in this sub-sector is the manufacturing of wooden containers, cane products, and wooden products. The sub-sector employed 5,309 people in 1998 and 7,472 in 1999 (URT 2000:158).

2.4.4 Paper and paper products

This sub-sector comprises the manufacture of pulp, paper, paperboard, fiberboard, light packaging, heavy packaging, stationery, and other paper products. The sub-sector has registered a continuous decline of output since 1994, resulting in increased imports of paper products from South Africa, Kenya, and the UK (UNDP, 2002:10). However, the sub-sector employed 8,158 people in 1998 and 8,439 in 1999 (URT, 2000: 158).

2.4.5 Chemicals, petroleum, rubber and plastics

The chemicals sub-sector comprises the manufacture of basic industrial chemicals, fertilisers, pesticides, plastic materials and products, medicines and pharmaceuticals, soaps, detergents, perfumes and other cosmetics, paints, and other chemical products.

The petroleum sub-sector comprises petroleum refineries, fuel oils, lubricating oils, and the manufacture of asphalt materials. Rubber products produced in the country include tires and tubes, conveyor and fan belts, rubber mats, gloves, pipes and tanks, plastic sheets, kitchenware, furniture, and footwear. Production, albeit characterised by peaks and troughs, has remained approximately constant since the early nineties. The sub-sector employed 5,305 people in 1998 and 5,524 in 1999 (URT, 2000: 158).

2.4.6 Non-metallic mineral products

This sub-sector includes the manufacture of pottery, china and earthenware, glass and glassware products, bricks, tiles, cement, concrete, gypsum, and plaster products. Physical volume of production has been increasing since the early nineties and particularly towards the end of the decade, following privatisation of cement mills. The sub-sector employed 4,660 people in 1998 and 5,240 in 1999 (URT, 2000: 158).

2.4.7 Basic metal products

This sub-sector comprises rolling mills and foundries that produce products such as slabs, bars, sheets, plates, strips, tubes, pipes, and rods. The sub-sector employed 7,084 people in 1998 (URT, 2000: 158).

2.4.8 Fabricated metals, machinery and equipment

This sub-sector includes the manufacture of cutlery, hand tools and general hardware, furniture and fixtures, doors, metal staircases, and window frames. Others are electrical motor transformers, electrical control devices and switchboard apparatus, as well as

radios and transport equipment (mainly bicycles, and animal or auto-pulled carts). The sub-sector employed 10,986 people in 1999 (URT, 2000: 158).

2.4.9 Other manufacturing industries

This covers products such as jewelry and related articles, furniture manufacture, measuring and controlling equipment, and optical goods. Production in this group of products has persistently been increasing. Employment levels have similarly been rising, from 1,265 people in 1995 to 1,298 in 1999 (URT 2000: 158).

Table 2.3 (on page 34) provides a summary of the contributions of the manufacturing sector in Tanzania. Analysis of the manufacturing sector, within which small and micro manufacturing enterprises are found, indicates that the sector has been at a disadvantage despite the reforms. The manufacturing sector, which has been protected for more than twenty years under socialism, is unable to compete with foreign products following liberalisation of the economy. Production costs in the manufacturing sector increased by 15% in 2000. In 1999 costs were Tzs 57,658 million. The increase in manufacturing costs was attributed to the depreciation of the Tanzanian currency and increased costs of utilities such as water, electricity, and transport (URT, 2001:152). Measured against one US dollar, the value of Tanzanian Shilling (Tzs) dropped from Tzs 219.50 in 1991 to Tzs 665.00 in June 1998. It dropped further to Tzs 1,014.6 in April 2002. Consequently, for the period of 1986-1999, the contribution to the GDP has averaged at 8.7%, 1989 registering the highest contribution of 9.3% and 1997 the lowest at 8.1%. During the 1986-1999 period, sectoral growth averaged 2.7% (URT, 2000: 163). For the sector to contribute to job generation it needs to be rejuvenated.

Table 2.3: Tanzanian manufacturing sector production, share of GDP, growth rate and employment 1988-2000

Period	Manufacturing share of GDP (%)	Growth rate of output (%)	Real manufacturing sector output (Tzs Mill. 1992 prices)	Formal sector employment
1988	8.7	3.1	97,730	121,642
1989	9.0	5.2	102,814	125,879
1990	8.8	4.1	107,008	134,413
1991	8.7	1.9	109,002	n.a
1992	8.2	-4.0	104,589	n.a
1993	8.6	-0.6	105,244	n.a
1994	8.4	-0.2	105,042	n.a
1995	8.2	1.6	106,750	n.a
1996	8.3	4.8	111,894	n.a
1997	8.1	5.7	117,489	n.a
1998	8.4	8.0	126,887	n.a
1999	8.3	3.6	131,491	n.a
2000	7.5	4.8	137,809	n.a
Average	8.7	2.7	112,596	n.a

Key: n.a = not applicable

Source: URT (2000: 163); Mans Soderbom and Teal, (2002:8)

Table 2.4 (on page 35) provides a breakdown of the manufacturing sector into its main activities. It reveals the contribution of each activity to overall value added, gross manufacturing output, and employment for 1990. The food sub-sector prevails highest in terms of value added, contribution to gross manufacturing output, and contribution to employment. The food sub-sector was followed by textiles regarding contribution to employment (29.6%), by metalwork in terms of contribution to gross manufacturing

output (21.2%), and by chemicals in terms of contribution to value added. The following sub-section reviews the Tanzanian labour market.

Table 2.4: Contribution of main sub-sectors to manufacturing, Tanzania 1990(in %)

Sub-sectors	Overall value added	Contribution to manufacturing output	Contribution to employment
Food	51.4	36.0	37.7
Textiles	2.8	15.2	29.6
Wood	4.6	2.8	6.7
Paper	7.4	6.0	6.0
Chemicals	16.0	14.1	5.2
Non-metal	3.2	4.0	3.4
Metal	13.6	21.2	10.3
All	100	100	100

Source: Adapted from Grenier *et al*, (1999:5)

2.5 Labour force and human resources in Tanzania

Employment data in Tanzania is hampered by poor labour statistics; caution should, therefore, be exercised when interpreting the data. Most of the data available are based on mere projections. In 2000, Tanzania mainland's population was estimated at 32 million people. These estimates are based on a population growth rate of 2.8% per annum calculated from the 1988 population census (URT, 2001a: 79).

It is estimated that 47% of the population is under the age of 15, 49% is between the ages of 15 and 64, and 4% is above the age of 65. The age group of 15 to 64 years (49%) makes up the labour force in Tanzania. According to Tibandebage *et al* (2001:8), 80% of the labour force is engaged in agriculture and only 7% is engaged in formal wage employment.

It is also estimated that there are 700,000 new entrants into the labour force every year. Of these, 500,000 are primary and secondary school leavers with perhaps few practical skills for finding employment. Of the 700,000, only 40,000 are likely to find formal employment, leaving the majority to seek jobs outside the formal labour market (Tibandabage *et al*, 2001:8; Kirumba, 1997:74; URT, 2003:5).

The downsizing of the civil service through retrenchment, the introduction of a hiring freeze in 1993, and the parastatal restructuring program have aggravated the unemployment problem in the past few years. Moreover, since 1991 university graduates are no longer guaranteed employment by the government, as was the case before. These statistics reveal the extent of the unemployment problems for Tanzania's youth.

According to the 1998 Report from the Team of Experts on Tanzania's Vision 2025, of the students enrolled in primary and secondary school every year, few have a chance to go further than secondary school. Therefore, a large number of people that lack necessary knowledge and skills make up the labour market of Tanzania. Some school leavers start new businesses, and the majorities are employed in the SMME sector.

Despite Tanzania's adoption of an Education for Self-Reliance (ESR) policy, many primary school children have not acquired enough practical skills to either join the wage labour market or to initiate self-employment activities. Unemployment of youth finishing primary education is compounded by:

- (i) The tender age of primary school leavers, as they enter into the labour market at 14 years of age or less.
- (ii) Curricula and syllabi that have not been sufficiently revised to meet labour market challenges.
- (iii) The lack of capital and credit availability to the youth.
- (iv) The unattractive private sector (Kapunda, 1999:78).

These factors call for a revision of the education curricula and syllabi at all levels, in order to meet global challenges and the realities of the market. Such a background shows

that the SMME sector is characterised by a number of problems. Hence, there is a call for measures to overcome the difficulties of SMMEs to allow for their positive contributions to economic growth (Bass, 1995:7). This makes it appropriate to investigate the impact of human capital programs on SMMV performance.

The SMME sector holds the highest employment potential in Tanzania. The focus of this study on SMMV performance is in recognition that a strong and vibrant SMME sector is one of the sources of economic growth through increased output, innovation, and employment. In the past, focus was on large firms for employment creation. However, new trends are in favor of SMMEs (White, 2001:3). Before proceeding, it is necessary to clarify usage of the term SMME.

2.6 Conceptual definitions of SMMEs

Nations do not use the same definition for classifying SMMEs. Nor does the need for a universal definition appear to be necessary. The problem of defining SMMEs lies in the fact that this is a relative term that cuts across various sectors in the economy. Moreover, each sector has specific features in terms of capital, materials, labour, and technological requirements.

Variation of definitions is not only visible between countries but within a country as well. According to Barrow (1993:5), many countries do not adopt a single definition of SMMEs for all purposes. Instead, numerous definitions exist, some for taxation considerations, others for industrial relations purposes, and others for government incentive benefits.

According to Vosloo (1994d: 162), some countries define SMMEs using only qualitative parameters, some use only quantitative parameters, while others combine the two. Qualitative definitions consider management structure, control of business, independence of ownership, independence of decision-making, financial practice, and trading style. Elements of control and independence of ownership from foreign influence are used to exclude franchises and trans-national SMMEs. Hence, in defining SMMEs a specific

context is reflected (Hansohm, 1995). However, in most countries, SMMEs are defined in terms of one or more of the following quantitative parameters: market share, number of people employed, size of capital invested, net worth, assets, volume of production, and sales (Burns and Dewhurst, 1993; Hodgetts and Kuratko, 1995:7).

Small firms exist in all sectors of the economy and encompass a wide range of sizes and a variety of structures. In 1971, the Bolton Committee, which represents the first systematic attempt to study UK small firms, developed a combined economic and statistical definition of small firms. From an economic perspective, a small firm was defined as small if it had a relatively small share of its market place, was owner-managed, and independent. A statistical definition of a small firm was also developed for each industrial sector. For example, a ‘small’ road transport firm was one with five vehicles or less, while a ‘small’ manufacturing firm was one with 200 employees or less. This report best describes the characteristics of small firms and shows the need for using a different definition for different small firms, even in the same sector. The definition is shown in table 2.5 below.

Table 2.5: The Bolton Committee’s definition of a small firm

Sector	Definition
Manufacturing	200 employees or less
Construction	25 employees or less
Mining and Quarrying	25 employees or less
Retail	Turnover Sterling Pounds 50,000 or less
Miscellaneous services	Turnover Sterling Pounds 50,000 or less
Motor trade	Turnover Sterling Pounds 50,000 or less
Wholesale trade	Turnover Sterling Pounds 50,000 or less
Road transport	Five vehicles
Catering	All excluding multiples and brewery managed houses

Source: Bolton (1971)

A quantitative definition has the merit of making it easy in targeting macro-policies to specific enterprises. Such a definition facilitates the provision of support services and other incentives to SMMEs, making it possible for physical identification of SMMEs, and facilitating better articulation of the problems and prospects of the sector (International Competitive Program for SMEs, 1997:110).

However, a specific definition of SMMEs can be misleading, as a quantitative or qualitative classification cannot perfectly reflect functional differences among firms of different sizes.

Different countries define small businesses in different ways. For example, in the USA, a small business is defined as a venture that is independently managed by the owner or a small group of investors, locally based and not a dominant company. It should have little influence in the industry (Griffin and Ebert, 1996; Anderson and Dunkelberg, 1993).

To the European Union (EU), small enterprises are those entities employing between 10 and 99 people. The EU definition does not use any criteria other than employment figures. Given the rise in productivity and different accounting practices by different firms, the exclusive use of the number of employees seems appropriate. Using the EU and USA's definitions, small businesses in the EU and USA would be regarded as large businesses in Tanzania and other developing countries (Storey, 1994:13).

The definition of small enterprises in India is based on the level of investment in plant, machinery, and other fixed assets. However, the definition exists only for tiny and small units: medium-sized enterprises are not defined. The definition seeks to keep in view socio-economic environment in India, where capital is scarce and labour is abundant. The definition places an investment limit on plants and machinery of Rupee 30 million for small-scale units, while units with investment not exceeding Rupee 2.5 million are classified as tiny units (International Competitive Program for SMEs, 1997:87).

In South Africa, the National Small Business Act 1996, Sec. 1(xv), provides a specific definition of SMMEs. According to this Act, a small business is a separate and distinct business entity, including cooperative enterprises and non-governmental organisations, managed by one owner or more, which, including its branches or subsidiaries if any, is predominantly carried on in any sector or sub-sector of the economy. The SMME sector is classified using the International Standard for Industrial Classification (ISIC) in which the number of paid employees, total annual turnover, and total gross asset value are the criteria used to define a micro, a very small, a small, and a medium enterprise. Appendix 2.2 (on page 332) shows forty categories of enterprises that are found in the South African definition.

The South African definition includes formal and informal enterprises. Also, in the definition survivalists are included in the micro-enterprises category. This category includes informal businesses like hawkers, street vendors, and household industrialists with an annual turnover of less than R 12,000.

2.6.1. Definition of SMMEs in the Tanzanian setting

There is not a universally accepted definition of SMMEs in Tanzania. The following terms are sometimes used: the Informal Sector (IS), Micro and Small Enterprises (MSE), Small and Medium Enterprises (SMEs), Small-Scale Enterprises (SSE), and SMME. Since these terms are sometimes used interchangeably and sometimes differently, the following is a description on the usage of these terms.

2.6.1.1 Small-scale enterprises

Phillips (1979:80) defines a Small-Scale Enterprise (SSE) as "... any unit whose control is within the capacity of a Tanzanian as an individual or collectively in terms of capital required and know how". He attempts to use qualitative variables to define SSEs.

Using an expanded qualitative definition of SSEs, Mramba (1999) states that small-scale enterprises are ventures whose control is within the capacity of a Tanzanian individual or collectively in terms of capital requirement and know how. It is one that will not be dominated by the state or expatriates or Multinational Corporations (MNCs). For the purpose of revenue collection in Tanzania, the Value Added Tax (VAT) Act of 1998 considers a business to be small if it has a sales turnover of not more than Tzs 20 million per year.

2.6.1.2 Informal Sector (IS)

Like SSEs, there is no single accepted definition of what constitutes business in the Informal Sector (IS). It is commonly argued that the IS firms have the following characteristics: they are unregistered, small scale, labour intensive, mainly family-owned, lack business premises, are non-compliant with tax, licensing, and other government regulations.

However, Omari (1999:271) argues that it is needless to discuss the features of the IS, as informal businesses are the driving force in the survival strategies of many African households. Omari (1999:272) further argues that about 75% of Tanzanian households depend very much on the informal businesses. Moreover, despite the lack of reliable statistics, the IS contributes significantly to income generation and employment creation in Tanzania and in many other countries. Therefore, looking at the features of the IS, one finds that the SMME sector consists of the Informal and Formal sectors. Hence, SMME and the IS have, to a certain degree, similar features.

2.6.1.3 Micro and Small Enterprises (MSEs)

Different authorities have propounded different definitions of Micro and Small Enterprises. The German Development Services (2001) suggest that micro enterprises have up to 5 employees and small enterprises have between 6 and 50 employees. Mbilinyi and Shundi (1999:51) claim that MSEs are usually marginalised, under-

resourced, and unregistered. The authors further argue that MSE contribution to the GDP in Tanzania has grown from 6% in 1979 to 32% in 1991, and employment has expanded more than three-fold.

A notable development in MSEs relates to gender composition. According to Olomi (2001:10), the proportion of female participants in this sector is increasing in Tanzania and many other countries. The increasing participation of women is almost a global recognition that women play an active role in income generation.

2.6.1.4 Small, Micro, and Medium Enterprises (SMMEs)

The acronym SMME stands for three different sizes of enterprises: Small, Micro, and Medium, as compared to large enterprises. In the light of the shortage of a commonly agreed definition, Tanzania defines SMMEs only in terms of two criteria:

- The number of employees and
- Capital investment.

Table 2.6 (page 43) shows that a **micro**-enterprise is a firm employing up to 4 people and has investment in machinery of over 5 million Tanzanian Shillings (Tzs). A **small**-enterprise employs between 5 and 49 and has a capital investment of between 5-200 million Tzs, while a **medium**-enterprise employs 50-99 and has more than Tzs 200 million as capital investment but less than 800 (URT, 2003:5). Even if this definition is not exhaustive, it provides a good starting point in providing a direction. In this study **small** and **micro**-enterprises were included, and all others fall outside the operational definition of SMMVs (section 4.1.1, page 116).

Table 2.6: Categories of SMMEs in Tanzania

Category	Employees	Capital investment in machinery (in million Tzs)
Micro enterprise	0-4	Up to 5
Small enterprise	5-49	Between 5 and 200
Medium enterprise	50-99	Between 200 to 800
Large enterprise	Above 100	Above 800

Source: United Republic of Tanzania (2003:5)

2.7 The SMME environment in Tanzania

The environment plays an important role in any given country in influencing business activities. Like other business sectors, the SMME sector does not exist in a vacuum. SMMEs have to survive in an environment of laws and regulations, economic conditions, competitors, changing consumer preferences, and technological changes (Coetzee *et al*, 1993:1).

There is a common agreement among researchers that the more conducive an environment is, the more likely new businesses will emerge and grow. According to Marsden (1982:343), in developing economies, small-scale enterprises are either left to their own devices or are unable to realise their full potential because of an unfavorable business environment. Studies using only environmental conditions to explain success or failure of small enterprises are called population ecology studies. Population ecology models use market conditions, rules and regulations, organisational environment, and support services to explain success and failure.

Kumar (1998: 94) argues that the above population ecology model, the belief that all entrepreneurs are vulnerable to the business environment, fails to explain the success of small biotechnology firms in the USA and the emergence of parallel markets in the 1980s

in Tanzania. Entrepreneurs are able to cope with the environmental dynamics and even alter the market and industrial structure, either through innovation or through exploitation of market imperfections.

Fogel (2001:103) observes that empirical studies on the entrepreneurial environment of various countries show that countries that keep rules and regulations at a minimum, offer tax and other incentives, and provide training, education and counseling services to entrepreneurs, increase the likelihood of new enterprises emerging and surviving. Thus, the political, economic, and legal environment has influenced South African SMMEs (Coetzee *et al*, 1993:1). Tanzania and other SSA countries are no exception.

According to the BoT Report (2000a:7), macro-economic adjustment and structural reforms have been largely responsible for creating a favorable environment for increased Foreign Direct Investment (FDI) in Tanzania. These reforms have dealt with major changes in the legal and regulatory framework, like the introduction of the new Mining Law and enactment of the new Investment Act. As mentioned above, major transformation has been witnessed in the financial sector, where appropriate regulations have resulted in the introduction of private banks. Also, appropriate Mineral Laws have attracted investments from foreign mining companies.

Policies, regulations, and the respective relevant institutions can promote or retard entrepreneurship, but they cannot answer the question as to why some entrepreneurs succeed and others fail under the same environmental conditions. As part of the Tanzanian macro-economic and structural reforms, a policy statement on the promotion of the SMME sector is intended to create an enabling environment and the development of markets for financial and non-financial services (United Republic of Tanzania, 2001b).

2.7.1 Promotion of the SMME sector in Tanzania

Support services for the promotion of the SMME sector can take different forms. Support services for SMMEs may include involvement of dedicated government and regional

agencies, specialised SMME support, financiers, business stimulators, incubator programs, networking programs, and various kind of technology development and dissemination initiatives (Autio and Klofstein, 1998:130).

The role of the State in promoting SMMEs is justified by the contribution of the SMME sector to the economy of a country. SMMEs are job creators. To emphasise the role of the State in promoting SMMEs, van der Merwe (1983:146) argues that the need to create sufficient employment opportunities is one of the most important national objectives and responsibilities of any government in the world today.

In 1995, the United Nations Economic Commission for Africa recommended three specific measures for the promotion of SMME entrepreneurs: provision of education and training for entrepreneurs, provision of credit, and provision of enterprise support. These measures are summarised below.

2.7.1.1 Education and training provision

Training and education are relevant in overcoming managerial skill constraints. The measure goes hand in hand with expansion of management training facilities and improvement in the design and execution of training and education programs. This requires a fundamental shift in methodology by emphasising on-the-job training, and long-term training.

2.7.1.2 SMME difficulties and technology transfer

SMMEs in Tanzania and other developing countries operate with low or medium technology. Improvement of technology and production methods is important in SMMEs. However, they are unable to mobilise resources for research and development on their own. In developing nations, foreign direct investment (FDI) remains an important mechanism for diffusion of technical expertise. Therefore, the State has an essential role in facilitating and encouraging technological transfer and local adaptation.

2.7.1.3 Enterprise support systems

Entrepreneurs need advice, information, and various types of services in dealing with environmental dynamics. These services can be provided through private consulting companies, chambers of commerce, professional management organisations, cooperatives, universities, colleges, training institutions, and NGOs. Government intervention is also important in making policies for the establishment of relevant SMME support services.

In support of the need for having small business support programs, Dewhurst and Burns (1993) used the following fish and monkey survival strategies as an example. With the fish survival strategy, fish fertilise enormously and let spawn go into the ocean with the hope that some will survive. But, since monkeys take a longer time to reproduce, few are born from each parent, and the newborn is taken care of for some years. The implication from this example is that SMMEs need to be supported in order to survive market dynamics. Small enterprises that are utilising small business support programs tremendously increase their chances of survival (Burton, 1998).

Financial and non-financial support services in the Tanzanian SMME sector are very weak. This is due to the almost non-existence of a national policy directing the promotion of SMMEs. Emerging ministries, government agencies, and NGOs are working independently in accordance with their individual interests. The Commonwealth Industrial Development Report (1999:55) claims that the institutions are overly ineffective in meeting the economic needs of Tanzania, resulting in a mixture of programs that have not been linked to one another.

The performance of SMME support service providers in Tanzania in terms of actual reach and impact on the sector is very low. Some of these institutions, like the Small Scale Industry Development Organisation (SIDO), have been in operation since the early 1970's. More than 40 other institutions and 1000 NGOs working in the SMME sector are

marred by self-interest, poor co-ordination, competition for resources and customers, poor coverage, and lack of integration (Kirumba 1997:80). A national policy for the development of the SMME sector could be the solution.

Tanzania did not have a National Policy for the development of the SMME sector. It was only in 2000 that the Ministry of Industry and Trade (MIT) came up with a first draft of a SMME development policy. The SMME development policy statement suggested the following for promotion of SMMEs:

- (i) Reviewing and reconsidering public policies and regulations that discriminate against or hinder the start-up, survival, growth and transfer of SMMEs, e.g. business registration and licensing, tax and taxation, dispute resolution, contract enforcement, land administration, and collateral regulations;
- (ii) Investing in public goods that open market access and build enterprise competitiveness, including infrastructure, information, education, and technology development;
- (iii) Addressing market failure that inhibits the development of markets for a diverse range of financial and non-financial services appropriate for small firms;
- (iv) Developing and institutionalising public-private partnership for the design, implementation, and review of policy interventions and their impact on the SMME sector (United Republic of Tanzania, 2003:2).

2.8 Importance of entrepreneurs in SMMEs

To some SMME entrepreneurship is dirty, dangerous, risky, and disruptive, while to others it is profitable, productive, or simply the only way out of poverty (ILO Report, 1999). SMMEs contribute to the nation's economic growth and stability (Boshoff and Scholtz, 1995:1). In terms of the Schumpeterian framework, the essence of entrepreneurship is innovation and the key economic agent that brings about change and innovation is the entrepreneur. Entrepreneurs are recognised for their ability to introduce new and quality products, introduce new methods of production, open up new markets,

conquer new sources of raw materials, and carry out new management styles. An entrepreneur, therefore, is a major engine of economic and technological progress in a country (Dana, 1998; Mulhern, 1995:83; Drucker, 1985).

For McClelland (1961:76), a critical factor that results in entrepreneurship and that stimulates economic growth is the **need for achievement (nAch)**. He describes nAch as a psychological quality, a desire to do well, not for the sake of social recognition, but to attain a feeling of personal accomplishment. He further argues that this quality differs among individuals and cultures and, hence, creates preconditions for differences among individuals, companies and countries. In a subsequent study, McClelland (1971: 121) concludes by advising policy makers to promote entrepreneurship and economic growth through raising the need for achievement of its people. To a greater or lesser extent, he believes, nAch is formed early in life and is relatively stable over a period of time. Therefore, to raise nAch, first parents must be empowered to set high standards for their children; secondly, it requires increasing the rights of women, both legally and socially; and thirdly, training courses must foster an achievement-oriented way of thinking.

Kristiansen (1994:42) puts the causal relationship between the need for achievement, entrepreneurship and economic growth in a diagrammatic expression as follows:

$$\text{nAch} \Rightarrow \text{entrepreneurship} \Rightarrow \text{economic growth}$$

Source: Kristiansen (1994:42)

A nation with individuals high in nAch generates vigorous entrepreneurship, which in turn stimulates economic growth. SMME entrepreneurship constitutes a predominant share of all enterprises in developed countries. For example, a larger number of SMMEs in Japan is consistent with higher per capita GDP growth rates than that of many African countries.

The SMME sector has gained particular focus among policy-makers, academics, and researchers in Tanzania and most other countries, largely because it is an important

generator of jobs. The following subsection highlights the role of SMMEs in the economy.

2.8.1 SMMEs as job generators

There are conflicting findings on the role of SMMEs as job generators. Critics of the job generation role of small firms give the following reasons: First, there is the question of the representativeness of the data used to draw the conclusion. Secondly, there is the fact that small firms enter and exit easily, which makes it important to consider net job creation instead of merely gross number of jobs generated (Glancey and McQuaid, 2000:30). Thirdly, the job generation argument does not fully account for the quality of jobs generated. It is important to consider both quality and quantity of labour: the quality of jobs in terms of wages, training, unionisation, and working hours is lower in small firms than in larger ones (Storey, 1994:201).

Despite the criticisms above, a vibrant SMME sector is generally considered a way of both creating new jobs and reducing unemployment. SMMEs tend to be more labour intensive than large firms; hence their labour-intensive feature is consistent with the relative abundance of labour and shortage of capital and foreign exchange, a characteristic of most developing countries (Marsden, 1982:342), including Tanzania.

SMMEs are considered resistant to economic crisis. Being less influenced by macroeconomic conditions, SMMEs create jobs faster than large firms and are more consistent creators of jobs. According to Fujita (1998), SMME contribution to job creation has been especially significant in the USA, Canada, Denmark, Finland, Italy, and Japan. In the USA, small firms constitute 13% of non-agriculture employees and this job creation role is considered a source of USA's macroeconomic stability (Carlsson, 1999:107). In the republic of Korea, SMMEs are responsible for 80% of employment created in the manufacturing sector (Fujita, 1998).

SMMEs are, equally, viewed as important sources of employment and income in South Africa (Skinner, 2000:45). Table 2.7 shows that, the South African small and medium businesses together contributed 33.5% to the GDP in 1996, while large enterprises accounted for 46.3%. In terms of employment contribution, appendix 2.3 (page 334) shows that, of the 7,397,200 estimated employments in 1997 the overall share of employment by large firms was 42.7%, compared to 54.8% by SMMEs and 2.5% by survivalists (Ntsika; 2000: 23,35).

Table 2.7: GDP by sector and size-class of formal sector activity for 1996 at constant 1995 prices (in million Rands)

Sector	Large	Medium	Small	Total
Agriculture, forestry and fishing	8 977	5 130	11 542	25 648
Mining and quarrying	41 147	1 770	1 327	44 244
Manufacturing	87 421	26 998	14 142	128 561
Electricity and water	22 481	0	0	22 481
Construction	7 445	5 377	7 859	20 681
Wholesale, retail trade, hotel and restaurants	33 029	5 356	50 882	89 267
Transport and communication	50 046	3 900	11 049	64 995
Finance, real estate, and business services	57 176	4 972	62 148	124 295
Community, social, and other personal services	5 236	2 521	11 636	19 394
General government services	0	0	0	116 435
Other producers	0	0	0	19 879
Grand Total	312 958	56 024	170 585	675 881
Size-class contribution as % of GDP	46.3	8.3	25.2	

Source: Ntsika (2000: 23)

Due to the high rate of SMME failures, not all SMMEs are capable of fulfilling the role of job creation. Most of the jobs come from a small minority of fast growing firms. However, SMMEs are not only important for job creation, but innovation as well.

2.8.2 SMMEs as innovators

Schumpeter (1943) saw entrepreneurs as innovators: they create new things and do things differently. To Schumpeter, an entrepreneur is an innovator, someone who introduces new products, new methods of production, new markets, new inputs. The role of entrepreneurs in SMMEs as inventors and innovator cannot be easily demonstrated by data, unlike in job creation. Invention and innovation are referred to as first time creation of a new technology, and redefinition and development of existing technology respectively.

Literature from developed countries shows that SMMEs are carriers of new ideas: they open new business opportunities. Carlsson (1999:105) argues that small firms had played an important innovative role in the semiconductor and biotechnological industry in the 1980's and 1990's (in USA). Using an all-inclusive word, Peters and Waterman (Jr.) (1982:211) claim that entrepreneurs are 'Champions'. Over 60 % of major inventions in the 20th Century were the work of SMMEs (Barrow, 1993).

2.8.3 SMMEs as exporters and importers

Borgersen (2000:22) uses the term "internationalisation process of SMMEs" for the participation of SMMEs in world trade. He argues that SMME participation in world trade has grown in recent years. However, he observes that SMMEs in developed countries handle the internationalisation process better than SMMEs in developing countries. He further argues that SMMEs in developing countries have problems in financing the market entry costs and exchange rate volatility. Although the contribution of SMMEs to a nation's economy from exports/imports is generally small, SMME exports/imports are increasing at a faster rate than exports/imports in large firms.

2.8.4 Other contributions

- (i) SMMEs expand consumer choice by offering a variety of goods and services to consumers who have diversified and sophisticated needs. While large firms offer standardised goods, SMMEs offer specialised products to niche markets. Due to SMMEs lower overheads and lower fixed costs, they are better positioned to satisfy limited demands brought about by small and localised markets (Tesfayohannes, 2000:35).
- (ii) SMMEs have flatter organisational structures. Because of this, SMMEs generate intelligence faster, share information faster, and take a shorter time to respond to market signals (Lin, 1998). Victor Hinojosa-Barragan (1999:9) maintains that: “The importance of SMMEs lies in their inherent flexibility that allows them to adapt relatively easily to current market requirements”.
- (iii) SMMEs are also considered as sources of management skills. It is believed that SMMEs provide an important training ground for owner-managers. This may lead to the development of indigenous management styles that could fit a specific context (Mkocha, 1997).
- (iv) SSMEs provide services to large businesses, often through sub-contracting arrangements. They can supply input and also participate in the distribution of final products more efficiently (Longeneker and Moore, 1991).
- (v) SMMEs compete among themselves. The resulting competition is beneficial to consumers, in terms of price, product quality, innovation and product choice. Healthy competition contributes to allocative and productive efficiency, as the least efficient firms will not survive in the long run.

The SMME sector is the area most men and women now earn their living. The sector offers vibrant job creation, innovations and poverty fighting opportunities (Jensen and Kolvereid, 1992; International Labour Organisation, 2001; Watson, 2001). Therefore, it is in the SMMEs that policy, regulations, business training, market development and organisational building matter most. Hence, there should be deliberate moves to reduce SMMVs' difficulties by investigating how to develop and support them through human capital development (Bass, 1995:8; Hansohm, 1995:78; Jagun and Haussler, 1995:198).

2.9 Importance of SMMEs in Tanzania

The role of the SMME sector is not specific to a particular nation: differences can only be found in the share of contribution to the economy. The share of SMME contribution will tend to vary with the development of the sector in that particular country. Data on the contributions of the SMME sector in Tanzania is scarce and outdated due to differences in definitions of the sector, coverage of studies, and representativeness of samples used. For example, in 1995 a survey was conducted by the Regional Program on Enterprise Development (RPED) in the informal sector but it covered the Dar es Salaam region only (RPED, 1995), while in 1995-1996 another survey was conducted by the RPED but it covered only the manufacturing sector and included a small sample. Data from the 1991 National Informal Sector Survey could be used, although it is outdated and the definition of the informal sector is questionable.

2.9.1 Poverty alleviation

Poverty, as a phenomenon, can be referred to as not having enough to live on. It includes income poverty (that is, lack of income to sustain livelihood) and human poverty (that is, lack of basic human capabilities). Poverty can be observed from a person's ill health, malnutrition, limited access to education, limited access to water, and homelessness. In a poor country like Tanzania, SMMEs could help in poverty alleviation by providing employment, and hence, income to the household.

Likewise, in Tanzania SMMEs contribute to the GDP. According to the 1991 National Informal Sector Survey (NISS), in 1991 Informal Sector contribution to Tanzania's GDP was estimated to be 32%. Therefore, a better performing SMME sector can easily translate into increased output and salaries to employees, the multiplier effect being a nationwide reduction in poverty and on improvement in living standards. Evidence from developing and developed countries has shown that SMMEs contribute significantly to the GDP.

2.9.2 Job generation

A low rate of capital formation and the existence of surplus labour characterise Tanzania and other developing countries. SMMEs that are labour intensive create employment opportunities at a low level of capital investment. The following statistics support the argument. In 1998, Tanzania mainland was estimated to have a population of about 30 million people. With the annual population growth rate of 3%, every year almost one million people are added to the population (URT, 1999; URT, 2000).

The demographics above provide a genuine reason for the job-creating opportunity target of about one million people each year. It is suggested that by enhancing the formation, survival, and growth of SMMEs, more jobs can be created and hence, the economy and living standard of Tanzanians will improve. The 1991 National Informal Sector Survey (NISS) shows that 2.3 million people were employed by the informal sector in 1991. This constituted 22% of the total employment of 10.9 million people. Similarly, in 1999 it was estimated that there were over one million SMMEs that were employing between 3-4 million people or 20-30% of the total labour force (Olomi, 2001:3).

The number of jobs created by the SMME sector in Tanzania has been increasing in recent times. For example, Tanzania's internal trade sector employed 345,844 people in 1998 and 366,718 people in 1999. The bigger proportion of employment in this sector originated from SMMEs (URT, 1999). The policy statement on the SMEs development

also acknowledges that SMMEs account for a large share of business and employment in Tanzania (URT, 2003:5).

2.9.3 Reduction of disparities

Mshange (1978:19), who studied the role of SSMEs in economic development in Tanzania's rural areas, concluded that such enterprises are capable of contributing to rural output and reducing disparities between rural areas and the urban areas. SMMEs utilise local resources and tend to develop throughout the country. Therefore, SMMEs can contribute toward reduction of the concentration of enterprises and employment opportunities in urban areas. That is, SMMEs are capable of reducing dualistic features of rural and urban areas in the Tanzanian economy. SMME consumption of local raw materials leads to foreign exchange savings and provides linkage to rural production. In this respect, SMME development is associated with enhanced opportunities for growth in disadvantaged regions.

Further, about a third of Tanzania's GDP originates from the SMME sector. Through business linkages, partnerships, and subcontracting relationships, SMMEs complement large industries by performing certain operations, and providing raw materials to the latter. Larger industries can utilise outputs from SMMEs to produce other products. Hence, a strong productive structure can be achieved where SMMEs and large enterprises not only co-exist but also function in a symbiotic relationship.

2.9.4 Macroeconomic stability

It is believed that SMME owners tend to show greater resilience in the face of recessions by holding on to their businesses. They seem to be willing to accept lower compensations when the economy experiences a downswing. This feature was vividly apparent during Tanzania's socialism era. Thus, SMMEs can provide for macroeconomic stability. To conclude regarding the importance of SMMEs, one can perhaps quote the words of Adam Smith (as cited by Schumacher 1973: 41) "What is good for Ford is good for the USA". Similarly, 'what is good for SMMEs is good for our national economies'.

The SMME sector is, however, facing problems that could erode its positive contribution to the economy of Tanzania. The following section explains the general and specific problems, and needs of SMMEs.

2.10 General constraints on the success of SMMEs

“Whether boom or recession, 9 out of 10 small business failures are traceable to managerial inexperience or ineptitude” (Pride *et al*, 1988:103).

Literature shows a number of problems that SMMEs face during navigation for their survival and growth. These problems tend to reduce SMMEs capacity to contribute effectively to the growth of the national economy. K’obonyo (1997) argues that the probability of failure is higher among younger enterprises than among more established businesses. Identification of the causes of SMME failure is closely related to the definition of failure. In most cases, causes of failure have been explained independently, while in reality they are inter-related factors.

For example, lack of funds is frequently cited as a cause, while lack of funds may be the result of lack of business skills. The entrepreneur may fail to see the financial opportunities in the market, fail to properly manage available funds, or fail to write a good business plan. Researchers in business and management have no common agreement on the causes of small business failure and the definition of business failure.

Lack of managerial and technical skills is seen as a major problem facing entrepreneurs. Many SMMEs fail on account of lack of relevant skills and knowledge (Van Aardt and Van Aardt, 1997:192; Kavishe, 1999; Chell; 2001). This study focuses its investigation on the impact of human capital on performance of SMMVs in Tanzania.

Other problems faced by SMMEs are the absence of economies of scale, the lack of specialist experts, the shortage of suitable premises, and the relatively greater exposure to risk and disaster (Cunningham *et al*, 1993; Jewel, 1993). Marriotti and Piscutella

(2001:66) claim that SMMEs suffer from internal constraints that are related to scarcity of the financial, managerial, and informational resources necessary to face the uncertainty and risks involved in business.

Business failures are also caused by external factors. These include tax burdens, inability to cope with environmental changes, inability to finance expansion, lack of time for the owner-manager to handle multiple assignments and tasks, and lack of research facilities (ILO, 1999; Schoell *et al*, 1993). The following are general problems of SMMEs in developing countries.

2.10.1 Constraints to the Success of SMMEs in Developing Countries

Fujita (1998) identified the following as problems facing SMMEs in developing countries:

2.10.1.1 Limited financial resources

Shortage of capital is a typical feature of SMMEs in developing countries. SMMEs consider insufficient finance as the largest constraint inhibiting their potential to exploit entrepreneurial opportunities. Lack of capital limits enterprises from expanding their activities, hence their development.

2.10.1.2 Limited managerial capabilities

Owner-managers lead most SMMEs, and they have to perform various other functions. They are involved with day-to-day operation at the expense of planning for the future, and most of them do not possess the required managerial capabilities. Linked to lack of finance, SMMEs cannot compete equally with large firms to hire qualified personnel in the labour market. According to Cronje *at al* (2003:120), the most common cause of failure in small business is poor management, as indicated in table 2.8 (on page 58). It is the presumption of this study that such managerial capabilities can be acquired through education, training, and experience.

Table 2.8: Causes of business failure

Percentage of business failure (%)	Cause of failure	Explanation
40%	Managerial incompetence	Inability to run the business, either physically, morally, or intellectually
30%	Lack of leadership	Inability to strategically influence other and bring about change
20%	Lack of managerial experience	Little, if any, experience in managing employees and other resources before going into business
10%	No industry experience	Little, if any, experience in the product or service before going into business

Source: Cronje *et al* (2003:120)

2.10.1.3 Poor infrastructure

SMMEs are considered to be environment takers. They usually take as given transportation, telecommunication systems, banking services, distribution networks, and the legal framework. In developing countries, the lack of spare parts and components for the maintenance of machines, coupled with lack of foreign exchange to import constitute another severe obstacle to SMMEs.

Bonu (1992) identifies the problem of entrepreneurs in developing countries, with special reference to Botswana. He concludes that high transport costs and limited financial services were responsible for the tardy growth of entrepreneurs in Botswana.

2.10.1.4 Macro environmental conditions

In developing countries, macro environmental issues such as limits to fund availability, inflation, limits to foreign exchange, and political instability are constraints facing SMMEs.

Nair *et al* (1998:79) identified two major factors hindering rural entrepreneurs: entrepreneur related and environmental contingency factors. Entrepreneur related factors consist of education and training, behavioural attributes, entrepreneurial orientation, and social, cultural, and family environment. Environmental contingency factors consist of organisational factors, policy support system, and the business and economic environment. The authors concluded that environmental contingency factors play a dominant role relative to entrepreneurial related factors.

Despite the fact that these problems are common in most developing countries, the magnitude of the problem varies between countries. In the following section, problems that are specific to the SMME sector in Tanzania are examined.

2.10.2 Constraints faced by Tanzanian SMMEs'

In their attempts to develop, SMMEs in Tanzania, as in most other countries, face numerous constraints. The following is a summary of constraints from selected studies of Tanzanian SMMEs.

2.10.2.1 Lack of credit

A 1991 survey of small-scale urban enterprises in Tanzania shows that of the 491 entrepreneurs that reported constraints to expansion, 246 listed the lack of credit for working capital as the most serious constraint. The second major constraint cited was lack of credit for new capital. Other perceived constraints included the inability to obtain local machinery and raw materials, heavy taxes, high transport costs, regulation changes

occurring too often, and lack of skilled labour (Bagachwa *et al*, 1993:36). A summary of these constraints is presented in appendix 2.4 (page 335).

Similarly, in the East African survey of 150 Tanzanian SMEs that was conducted between November 1999 and May 2000, it was revealed that out of 17 obstacles in doing business, five were frequently highly ranked. The obstacles included unfavorable tax regulations, regulations for business start-up, business financing, corruption, reliability of the product markets, and inflation (Matambalya and Wolf, 2001:7).

Chijoriga and Cassimon (1999:284) also identified credit availability as the major constraint facing Tanzanian SMMEs. They suggest that availability of credit enhance entrepreneurs' ability to break the vicious cycle of low income – low savings – low investment – low income. However, the financial system, comprising formal and informal organisations does not provide adequate finance to allow for the development of the SMME sector.

SMMEs in Tanzania are required by financial institutions to show their creditworthiness. In applying for credit from the financial market, SMMEs are requested to produce financial statements and non-movable assets as collateral to cover the loans applied for. Most small entrepreneurs do not have such assets. The collateral requirements frequently hinder SMMEs' access to credit. Lending policies and procedures in Tanzania's financial institutions are seemingly not entrepreneur-friendly.

Perceptions by financial markets that SMMEs are risky clients make entrepreneurs' access to credit very difficult. Formal financial institutions often regard SMMEs as being too poor-they do not keep written financial records, do not have business plans, and yet they want to borrow small and uneconomic sums. Hence, financial institutions consider lending to SMMEs as exposing themselves to high risk.

In comparison, large enterprises possess a larger proportion of moveable assets, and a capacity to keep proper financial records. As a result, private and public financial

institutions tend to discriminate against the private sector in favor of the inefficient public sector (Rugumamu, 1997).

2.10.2.2 Weak financial infrastructure

Not only it is a problem that few organisations are involved in providing financial services to the Tanzanian SMME sector, the few available are also based in urban areas. Njau (2001) observes that in Tanzania, small-scale entrepreneurs have not been aided by reforms in the financial sector. Micro-financing institutions are almost non-existent in rural areas. He further claims that the few existing micro-financing institutions are charging high interest rates, ranging between 35% and 40%.

Availability of start-up capital and capital for business expansion as a major problem to Tanzanian SMMEs needs further study. This study assumes that respondents to the above mentioned studies find it easier to point a finger at a third party than to take time to evaluate their enterprises in terms of their capability or deficiencies.

2.10.2.3 Deficient legal environment

According to Rugumamu and Mutagwaba (1999:73), entrepreneurs in Tanzania encountered the following major policy related constraints in the 1970s and 1980s. SMME entrepreneurs require a legal and regulatory environment that encourages the activities and development of small businesses. Laws must be transparent and empower legal institutions to ensure the rights of entrepreneurs. Such an enabling environment is non-existent in Tanzania. The most seriously affected area is that of rights to property. The legal system in Tanzania does not enforce laws relating to property rights in such a manner that the financial system could use them as credible collateral.

2.10.2.4 Bureaucracy in business licensing

Tanzania's commercial licensing system is very cumbersome for SMMEs. The amount of paperwork and the stages involved are too restrictive for SMMEs. The business license application form has to be approved by the land officer, the health officer, the ward development committee, the principal tax assessor, and the trade officer. This approval process does not encourage SMME entrepreneurs. It is too bureaucratic, expensive, and time consuming for business individuals. According to the Industrial Development Report (1999:25), the procedure for registration and licensing in Tanzania requires five times more documents compared to that of other African nations.

2.10.2.5 Tax assessment, collection, and bribery

SMMEs in Tanzania complain that tax assessment is not smooth. For example, the Value Added Tax (VAT) Act of 1997 requires that people whose sales exceed Tzs 20,000,000 are eligible to register for VAT. A clear-cut differentiation between those qualified and those unqualified for VAT is not there. Also, VAT is charged at 20% of the taxable value, and the definition of taxable value is not straightforward. Taxation attracts negotiation of the tax burden and, hence, provides a loophole for bribery. Also, taxes in Tanzania are perceived as too burdensome.

2.10.2.6 Legislation on standards

SMMEs in Tanzania have to comply with burdensome legislation that robs them of their flexibility to operate freely in a rapidly changing environment. Legislation on standards is imposed on the operations of SMMEs. Among others are the Factory Act, the Public Health Act, and the Power Act. Most of these Acts are regarded as restrictive to the self-employed and entrepreneurs.

In short, some of the constraints for the survival and growth of SMMEs result from policy biases. The legal and regulatory environment in Tanzania is still cumbersome,

bureaucratic, costly and centralised. The negative legal and regulatory environment does not affect the SMME sector in isolation. It affects other businesses too. However, SMMEs are severely constrained in this environment compared to large enterprises that can lobby for better policies.

2.10.2.7 Lack of entrepreneurial culture

Culture is the collective programming of mind; it distinguishes the member of one human group from another, or one category of people from another, or one nation from another. An entrepreneur, as a human being, operates in societies that define culture, which influences the entrepreneur's action (Hofstede, 1990:21). Hence, there are some cultures that negatively influence entrepreneurial actions and some influence the entrepreneur positively. Some African cultural values of respect for traditions, family security, social-order, and conformity, tend to discourage autonomy, creativity and independence. A culture that rewards social conformity often has a negative influence on entrepreneurship (Munene, 1997:9).

According to the draft policy statement on the promotion of SMMEs in Tanzania (URT, 2001b: 11), there are numerous other factors that impede on the creation and survival of Tanzanian SMMEs; a broad constraint stems from the culture that surrounds entrepreneurs and entrepreneurial initiatives. Perceptions, attitudes, and behaviors operational in the Tanzanian culture tend to hinder or complicate the emergence and growth of SMMEs in Tanzania.

2.10.2.8 Lack of business skills and experience

Several authors cite lack of business skills and knowledge as one of the major constraints in the performance of Tanzanian SMMEs (TCCIA, 1995:7; German Development Service, 2001; Mwangosi, 2001). As a result, a large number of these SMMEs fail in their infancy, thus failing to live up to their promise as agents of economic growth.

The words of Bink and Vale (1990:132) highlight a pertinent point in this regard. Disappearance and failure of small firms is consistent with inadequate and restricted access to experience, training, and education. Hence, if it is accepted that the high level of experience, training, and education of surgeons can reduce that human mortality rate, then there is a clear analogy to be drawn between surgeons and entrepreneurs. The high disappearance rate of SMMVs can be corrected through experiential learning, training, and education of entrepreneurs and workers in the business.

According to Toroka and Wenga (1997:5), the constraints faced by Tanzania's entrepreneurs in the SMME sector are compounded by shortcomings of individual owner-managers of those SMMEs. These owner-managers of SMMEs tend to have a low-level education, limited technical and business skills, and hence lack the confidence to overcome environmental and business challenges.

The same constraints that are facing Tanzanian SMMEs are found in the results of a study on South African youth (Youth 2000 Report). This report shows that the most common reason that respondents gave for failure of their businesses was lack of funds. 28% of respondents to the question 'why do you think your SMME failed' attributed it to a lack of funds, 23% said the failure is due to stiff competition, while 14% said that lack of business skills is the reason for failure.

This study could not look at frequently researched obstacles like credit-related constraints, demand and supply related constraints, tax burden, and lack of infrastructure. Other frequently researched problems include lack of inputs or business support services, problems with inputs, macroeconomic and capital-related limitations. In the view of this study, entrepreneurs are often not good enough to evaluate their capabilities.

An important question before the researcher is to what extent the problem of failure can be corrected or minimised. One can presume that need achievement, adequate education, training, and experiential learning are the appropriate tools to correct the main source of entrepreneurial failure.

2.11 SMME development in selected Countries

Three countries were selected to provide examples of the development of the SMME sector; these are Botswana, Malawi, and South Africa.

2.11.1 Botswana

Botswana and Cape Verde are the fastest growing economies in the World. It is in these two countries where the elimination of poverty in the future is a real possibility (White *et al*, 2001). According to a UNDP Report, Botswana registered 5% in terms of economic growth between 1992 and 2002, and had US \$ 3,056 as per capita income in 2001. One could learn from countries whose SMME sector is relatively strong. SMMEs in Botswana have made a noticeable contribution to the national economy. In 1998, SMMEs' contribution to the GDP was estimated at between 30 and 45%, and accounted for 50% of total formal employment (Government of Botswana, 1998).

According to Tesfayohannes (2000:35), the need for specific SMME promotion policies in Botswana arose from the following factors: the high mortality rate of SMMEs, and the fact that surviving SMMEs failed to grow. He further claims that SMMEs in Botswana lacked appropriate technology, finance, and also entrepreneurial, managerial, and marketing skills. These problems made it necessary for SMMEs to have their own promotional policy, with separate infrastructure, institutional capacities, and action plans.

Between 1985 and 1991, the Botswana concentrated on development of enterprises through institution development. The Government established the Botswana Enterprise Development Unit. Among its objectives were the promotion of small and medium scale enterprises with special attention on rural entrepreneurs, and the provision of integrated extension services in training and industrial technology (Bonu, 1999:88).

Emphasis on SMME development in Botswana has also focused on training and education, transfer of appropriate technology, and financial services. The multiplier effect of promoting the SMME sector in Botswana goes to the rest of the economy; Botswana has become one of the fastest growing economies in Africa.

2.11.2 Malawi

Malawi is another SADC member country that emphasises the creation and expansion of SMMEs to create jobs and reduce poverty. Masten and Kandoole's (1996) study provides the following explanation. By 1996, eighteen SMME support organisations had been established: seven were government agencies, five were associations, three were training institutions, and there were two banks and one non-governmental organisation. In 1999, these institutions spent US \$ 4,275,000.00 on support services.

This study shows that in 1996, the Malawian government established a national policy on the SMME sector. This policy identified the following key strategies to promote employment and poverty alleviation through the SMME sector:

- (i) Training: That is, provision of entrepreneurial development skills, human resource development, and promotion of small enterprise and entrepreneurial schools;
- (ii) Finance: That is, promotion of private sector investment in the SMME sector and provision of trade and industry finance;
- (iii) Marketing: That is, promotion and development of co-operatives, and improvement in the operation of government purchasing schemes for small businesses;
- (iv) Infrastructure: That is, promotion of cottage industries and provision of basic infrastructure;
- (v) National database: That is, development of an information base and network on trade and industry, which includes the SMME sector;
- (vi) Appropriate technology: That is, technology capability development of small businesses; and

- (vii) Institutional reform: That is, the strengthening of private sector organisations, institution of a small business claims court, and development of new competition policies and legislation.

Apart from setting policies, the Malawian government monitors SMMEs' achievement of employment targets, disburses funds to support institutions, and provides an enabling environment for employment, trade, and SMME sector expansion. However, Masten and Kandoole's (1996) study reveals that support institutions in Malawi are facing constraints in terms of capacity, limited ability, and lack of linkages between themselves. With regard to the shortfalls of support institutions, Tanzania is no exception.

2.11.3 South Africa

The third example is South Africa. South Africa's history of apartheid resulted in the country having a disadvantaged group of Blacks. South Africa is one of the highest income inequality countries. In 1995, the average monthly earning among the black poor was Rand 281, while the white norm was over 5000. The continuous shedding of jobs by large firms due to global competition has resulted in an increase in unemployment in South Africa (Ahwireng-Obeng and Egunjobi, 2001:41). For example, between 1994 and 2001, about 500,000 jobs were lost in South Africa (Sitai, 2001:56). The SMME sector represents an important vehicle to address South Africa's problem of job creation, economic growth, and equity.

A study of small enterprise development in South Africa by McCarthy (1982:16) identified the following factors to consider in designing and implementing small enterprise development programs:

- (i) Small-scale enterprises are often uncertain of the appropriateness of new skills and knowledge,
- (ii) Small-scale enterprises are less able to leave their businesses for off-premise training programs,
- (iii) Small-scale entrepreneurs often do not recognise that they have a problem,
- (iv) Financial and non-financial services should be separated between agencies.

The need for the development of SMMEs was raised in the White Paper of March 20, 1995. In the paper a 'the National strategy for the development and promotion of small business in South Africa was proposed (Thomas, 1995:12). One year later Ntsika Promotion Agency, hereinafter called 'Ntsika', was established through an Act of Parliament to implement the National Business Support Strategy as spelled out in the White Paper (National Small Business Act, 1996 No. 102, Sec. 9).

The mission of Ntsika, an agency of the Department of Trade and Industry (DTI, South Africa), is "To render an efficient and effective promotion and support service to the SMME sector in order for the sector to contribute towards equitable economic growth in South Africa" (Ntsika, 1997:1). Ntsika coordinates and monitors the provision of training, advisory and counseling services, and other non-financial services.

Since the role of entrepreneurs and their SMMEs in job creation and economic development is not disputed, the question is how the quantity and quality of entrepreneurs could be enhanced. In a study on promoting entrepreneurship amongst black South Africans, Thomas (1994:375) asserts that:

- (i) Entrepreneurs are not born: They evolve through a continuous process of education, training, learning-by-doing, experience transfer, capturing opportunities, and trial-and-error-practices;
- (ii) Parental background, childhood experience, schooling, and the broader business and economic environment play a significant role in the acquisition of entrepreneurial abilities;
- (iii) The apprenticeship model is the best in the process of experience transfer that constitutes the skill basis of any effective entrepreneur;
- (iv) Effective and lasting entrepreneurial creation takes time;
- (v) Entrepreneurs' communication skills, business contacts and networks, risk analysis skills, and planning skills can be transferred through apprenticeship.

Skill transfer and experience acquisition for entrepreneurs in SMMEs is not easy.

One could learn from the three countries Botswana, Malawi, and South Africa that knowledge and skills in SMMEs are regarded as important factors. Motivation, education, training, and experience, being sources of skill and knowledge, provide good reasons for carrying out this study.

2.12. The SMME sector in Tanzania

Scanty data is available on the SMME sector in Tanzania. The survey of 300 SMEs undertaken by Chijoriga *et al* (2001) in five regions of Tanzania provides a partial picture of the SMME sector. They found that of 300 owner-managers surveyed, 201 have micro enterprises and 99 have small, 129 were female, and 171 male respondents. Also, the study found that 229 own-managed small and micro enterprises were located in urban areas and 71 in rural areas. Moreover, 86 were engaged in trade, 113 in service, and 101 in manufacturing (in table 2.9 and 2.10, page 69 and 70 respectively).

Table 2.9: Composition of SMEs by enterprise size and gender

Gender	Micro	Small	Total
Male	99 (58%)	72(42%)	171
Female	102(79%)	27(21%)	129
Total	201(67%)	99(33%)	300

Source: Chijoriga *et al* (2001:5)

Table 2.10: Gender distribution of SMEs by location

Gender	Urban	Rural	Total
Female	139 (81%)	32(19%)	171
Male	90(70%)	39 (30%)	129
Total	229 (76%)	71(24%)	300

Source: Chijoriga *et al* (2001:5)

Table 2.11 shows the distribution of the surveyed SMEs by gender and education. It shows that of 300 respondents, one had no education, 54 attained primary education, 30 had vocational/technical education, 63 had ordinary level education, 25 had advanced level education, 75 had post secondary but below diploma/degree education, and 52 had a degree/diploma or higher level of education. This study shows that about 50% of the 300 respondents had attained an education between primary and secondary level.

Table 2.11: Distribution of enterprises by gender and education

Gender/Education	Male	Female	Total
No formal education	0(0%)	1(0.01%)	1(0.003%)
Primary	28(16.4%)	26(20.2%)	54(18.0%)
Vocational/technical	22(12.9%)	8(6.2%)	30(10.0%)
Secondary	45(26.2%)	43(33.2%)	88(29.7)
Post secondary	41(24.0%)	34(26.4%)	75(25%)
Degree/diploma or higher	35(20.5%)	17(13.2%)	52(17.3%)
Total	171(100%)	129(100%)	300(100%)

Source: Chijoriga *et al* (2001:8)

Similarly, another study of 571 migrant households in Makambako and Babati by Holm (1996: 13) highlighted lack of education among small business owners. He observed that of 571 households, 70 respondents were engaged in small businesses. Of the latter group, 58 had primary school education, 9 had secondary school education, and 2 had no formal

education, while only one had a higher level of education than secondary school. Thus, of the group in business, 60 had no education or training other than the basic schooling. The two studies show that Tanzanian entrepreneurs seem to have low education and a low level of training.

Tracking the employment creation among the surveyed enterprises for only two years, Chijoriga *et al* (2001) observed that of the 300 SMEs, 53% made no changes in employment, 27% increased by between 1 and 4 employees, and 12% decreased their employees by between 1 and 4. These results signal a constraint among SMEs in their ability to create jobs in the short run.

2.13 Summary

This chapter presented an overview of the macroeconomic fundamentals of the Tanzanian economy. Tanzania is one of the poorest countries in the World, with a population of about 34.5 million people, a population growth rate of 2.8% per annum, and about 700,000 job seekers entering into the labour market every year. The formal economy is unable to provide jobs for most of these individuals. Against the background of rising unemployment in Tanzania and its poor labour absorption capacity, the SMME sector is being looked at as an alternative employment-creating sector.

There is strong evidence that the SMME sector provides the greatest potential for job creation. Not only are SMMEs important in creating jobs, they are also sources of innovation, new management skills, new goods and services, and new consumption patterns. This study presumes a positive and significant association between SMMV performance in terms of job creation and their respective human capital.

Despite the commonly agreed role of the SMME sector, Tanzania exhibits an unfavorable environment for both the SMME sector and other businesses. SMMEs need a supportive environment in terms of financial and non-financial services so as to enhance the sector's contribution to the national economy.

Since knowledge and skill deficiency is identified as a major constraint on the performance of SMMEs, the call is to improve human capital for securing better performance of SMMEs. The vital link between education, training, experience, nAch, and SMMV performance is discussed in the next chapter.

CHAPTER 3

ELEMENTS OF HUMAN CAPITAL AND ENTREPRENEURSHIP

3.1 Introduction

One of the current aspects of great interest in SMME entrepreneurship is the role played by human capital. Human capital plays an important role in the economic and social development of a nation; it also enhances the entrepreneur's ability to exploit business opportunities and improve business performance. Debates and articles relate the contributions of education, training, experience, and need achievement to the competitiveness of businesses.

Enterprises need to be flexible, adaptive to changing customer needs, and to rapidly changing technology in order to survive. Small enterprises can be more flexible to market changes, and can be more innovative when their entrepreneurs have information and skills to exploit business opportunities. It is thus important to investigate and enhance the entrepreneurs' ways of gathering skills and information, which could enhance their performance and contribution to the economy.

The chapter sets the scene by examining human capital theory and linking them to SMME entrepreneurship. It starts by describing six major elements of human capital, namely health, adult education programs, migration, on-the-job training, formal education and experiential learning. Section 3.3 describes human capital development in Tanzania. The Human Development Index (HDI) shows that Tanzania is in the low human development group. The low level of knowledge and skills hinders not only employees and entrepreneurs in Small and Micro Manufacturing Ventures (SMMVs), but also in other areas of the economy. The other affected areas are the capacity of the government to formulate and implement effective macro-economic policies, the depth of domestic markets, the quality of government and civil society institutions, and the degree of social cohesion.

Section 3.4 covers various human capital models. Previous models have the weakness of incorporating only one or two elements of human capital. Therefore, the model developed for this study has two major parts. Human capital and start-up capital are explanatory variables, while, SMMV performance and conduct of business are dependent variables. The study goes a step ahead to incorporate need achievement, education, training, and experience as human capital elements.

Investigating the impact of human capital from the performance of small ventures' point of view seems to be consistent with the fourth level of Kirkpatrick's model (1996). That is evaluating the results of training and education, or evaluation from the output level (Maliyamkono *et al*, 1982). Kirkpatrick's model consists of reaction, learning, behavior, and results as level one, two, three, and four respectively, for evaluating training and education. The focus is on level four of Kirkpatrick's model.

Sections 3.5 through 3.7 dwell on the importance of human capital. Human capital is considered important both at macro-economic and microeconomic levels. Human capital development has positive influences on output and development of the economy. Thus, human capital is an engine of economic growth. Moreover, human capital improves the standard of living of the population through good health, intake of quality food, gender balance, and education of children.

The chapter draws examples from the Newly Industrialised Countries (NICs) as these countries could provide a lesson to developing countries like Tanzania. The country's education and training system is still oriented toward the colonial system of preparing people for formal employment. Also included are various performance measures for SMMEs, human capital linkage to business performance, and a review of previous related studies. The last part of the chapter describes a selected number of other studies.

3.2 Overview of human capital theory

In the world today, every society requires a high growing economy that increasingly provides goods and services for its people. Lombard and Vosloo (1994: 6) define economic growth simply as a sustained rate of increase in gross domestic output in the economy that exceeds the rate of population growth. Social scientists have often differed on the factors that stimulate the drive toward economic growth. Capital, natural resources, entrepreneurship, technology, and physical labour are usually considered important factors in generating economic growth for nations.

In the past, human capital was somehow ignored as an important factor in the production process, in favor of physical capital. Adam Smith only mentioned the importance of division of labour without providing details (Becker *et al*, 1990: S.12). Physical capital is necessary, but not sufficient, to generate economic growth. Skilled workers, managers, and innovative entrepreneurs are needed to operate machines, produce efficiently, develop new products, develop new production methods, and utilise innovations (Becker, 1995: 1; Mahadea, 1994:42).

According to Schultz (1961:7), even economists have been somewhat reluctant to analyse the contribution of human capital to economic growth, due to measurement difficulties. However, the pouring of physical capital into developing countries during their post-independence years did not show positive results. This implies that at a certain level, human capital needs to be matched with non-human capital, otherwise a low level of human capital development becomes a limiting factor in economic growth. Therefore, the following subsections shall consider some elements of human capital and their socio-economic implications.

3.2.1 Elements of human capital

Human capital can be defined as accumulated skills and knowledge. Becker (1993:43) claims that human capital elements can take the form of skills and abilities, personality, appearance, reputation and appropriate credentials. A skill is knowledge that is demonstrated by action, an ability to perform in a certain way (Wickham, 1998:41). However, there are different ways of defining the human capital elements. Some have described human capital in terms of its source and means of acquiring it. Others explained human capital in terms of education, training, and experience or a combination of two or more.

Barcala *et al* (1999:337) identifies training, health, job search, job mobility, and child rearing as elements of human capital. Schultz (1963:8) provides five elements of human capital: health, adult education, migration, on-the-job training, formal education, experience. These elements are described below.

3.2.1.1 Health

Health includes life expectancy, strength and stamina, as well as vigor and vitality of people. The life expectancy of a population is an important factor, both in determining the incentive to invest in human capital, and in productivity. Health improvement has implications for the quantity and quality of the labour force. Longer life span implies longer participation in the labour force, greater physical ability to do work, and less loss of working time due to illness. The quality of food intake, clothing, housing, and medical services can influence the individual's productivity - the theoretical assumption is that a healthier person is productive, especially when tasks demand stamina and energy (Schultz, 1981:34). Like migration, health and education are complementary to each other.

3.2.1.2 Adult education

Adult education is another method for improving human capital in an economy. The important feature of adult study programs is that they are usually not organised by the enterprises. People in developing countries with high levels of illiteracy, are often unable to acquire knowledge and skills. Hence, adult study programs are considered vital as a means for national reconstruction and development. Adult education is a common feature in both Tanzania and South Africa.

3.2.1.3 Migration

People can move from one place to another within the country, or between countries. Migration of an individual or a family can occur to take advantage of a deficiency of capabilities in one place, that is, migration can improve human capital. Therefore, migration and education appear to be complementing the distribution of human capital needs between places. However, geographical migration is greater in younger than in older people. Assuming the costs of moving are the same, older workers have a shorter time left to capture the benefits of moving to a new place than younger ones.

A developing country like Tanzania is characterised by dualism, in which unequal regional distribution of opportunities is prevalent. Using the example of Tanzania, one observes that the country is characterised by migration between rural and urban areas, that is, between the rural-agricultural and urban-industrial sectors. With Tanzania's strategy of import substitution, investments were diverted from rural to urban areas. The rural areas are no longer attractive. As a result, migration to towns and cities rose, and urban employment rose. The tendency of Tanzanian rural residents to migrate to urban areas increases with education. The motivating factor for migration is the difference in economic returns between rural and urban areas. Educated citizens are more responsive to spatial differences in economic opportunities than the uneducated (Sabot, 1979:73).

Expanding the role of migration, Shane (2003:32) argues that migration can create entrepreneurial opportunities for a person. He further asserts that creation of new businesses is related to the migration of people to different places.

3.2.1.4 On-the-job training including apprenticeship

On-the-job training is one of the frequently mentioned activities for improving human capital. On-the-job training may include one-to-one training, coaching, or mentoring, or apprenticeship. On-the-job training appears to be as important as schooling in the formation of human capital (Lucas, 1988:27). Usually, on-the-job training is conducted at the workplace of the trainee. It involves provision of knowledge, skills, and attitudes for correct execution of a task. Buckley and Caple (1996:16) claim that on-the-job training has the merit of taking less time, being more flexible, and making the transfer of knowledge and skills easier. Despite the advantages of on-the-job training, other forms of training have emerged: off-the-job training, computer-based training, learning packages, and video training.

With a well-trained workforce, productivity and quality of output is likely to be higher. Therefore, training is considered an investment, and like all other investments, it has costs and benefits that can be evaluated by economic criteria, such as the internal rate of return and the present-value method.

3.2.1.5 Formal education

The term education is difficult to define, as it has cultural implications. According to Schultz (1963:3), education is

“teaching and learning ... to educate means etymologically to induce or draw out a person something potential and latent; it means to develop a person morally and mentally so that s/he is sensitive to individual and social choices and able to act on them; it means to fit him/her for a calling by systematic instruction, and it means to train, discipline, or form abilities...”

Schooling and education are sometimes used interchangeably; hence, years of schooling could be the same as years of formal education. Formal education can be described as formal instruction at elementary, secondary and higher level. Formal education is one of the most important methods for improving human capital. Education enhances one's ability to receive, decode, and understand information. Information processing and interpretation is important for performing and learning to perform different tasks (Nelson and Phelps, 1966:69).

Measuring quantity of education in the form of number of students and years of schooling is usually used as an indicator of human capital accumulation. However, years of school are not a sufficient indicator of human capital accumulation (Sabot, 1997:152). Quality in the form of cognitive and other skills could be alternative ways of measuring accumulation of human capital.

In some countries, enrollment was expanded at the expense of quality of education. Poor quality of education can be associated with: lower per student expenditure, high repetition rate, low completion rates, and low test scores (Sabot, 1997:125; Griffin and Knight, 1990:25).

Sabot further suggests that an employee with high quality education is expected to be more productive and earn more. In such a case, salary and wage bills could be used to measure quality of education.

Cross-country studies found the quality of education in developing countries to be unsatisfactory. It takes more years of schooling in developing countries than in developed countries, as a result of inadequate health and nutrition, poor quality teachers, lack of facilities, and lack of incentives (Griffin and Knight, 1990:28). Comparison between developing countries reveals similar results: Kenyan workers had higher wages than Tanzanian workers, since Kenyans were higher in terms of cognitive skills than Tanzanians (Sabot, 1997:157).

3.2.1.6 Experience

Experience, as another element of human capital, is regarded as another way of gathering knowledge and skills. According to Arrow (1962:156), knowledge cannot be acquired through schooling or training alone, but through experience as well. Through current experience, people can learn while attempting to solve a problem, or during the process of performing a task. Arrow further shows that experience increases productivity. Time expended in production is a decreasing function of the total number of the same units produced previously.

Related to current experience is prior occupational experience, also called prior career experience. Previous career experience provides contacts, information about opportunities, regulations and procedures, as well as confidence for the entrepreneur. Bhattacharya (2002) claims that entrepreneurs' lack of prior career experience is often associated with lack knowledge, contacts, and skills necessary to enter an industry.

According to Shane (2003:75), prior career experience has the advantage of reducing the uncertainty of an individual with regard to the benefits of exploiting an opportunity. Shane further identified five types of career experience, namely: general business experience, functional experience, industry experience, start-up experience and, vicarious experience.

Since there is no agreed list of human capital elements, this study incorporates nAch, education, training, and experience in the investigation. The inclusion of nAch is supported by Becker (1993:243), who claims that human capital and expected earnings can be determined by endowment inherited, parental expenditure, and public expenditure on the child. Before describing the different human capital models, the following section explains human capital development in Tanzania.

3.3 Human capital development in Tanzania

The colonial education system of Tanzania represented essential parts of the ideological structure of the coloniser. It served the objective function of providing Tanzanians with skills and knowledge necessary for them to be productive peasant producers, workers or servants of the State. Education and training shaped Tanzanians to accept a place in the colonial social structure (Mbilinyi, 1979:236).

To emphasise the aims of colonial education, the 1924 Tanganyika protectorate education report (in Mbilinyi, 1979:271) states that colonial education is "... an education system which will provide for African needs and at the same time produce a virile and loyal citizen of the British empire ... where character, health, industry, and proper appreciation of the dignity of manual labour rank as of first importance."

According to Kaniki (1979:346), colonial policies were aimed at blocking the way for any local skill that might effectively compete with expatriate firms. By serving the interests of the existing regime, foreign investors received maximum protection from the colonial power.

It is unfortunate that the type of education system offered in Tanzania is still the type of education that prepares people for formal employment. That is, the education system is still somewhat oriented to the colonial education system - it is not geared for self-employment (Kikula, 2001:13).

The Human Development Index (HDI) indicates the level of human capital development in an economy. The level of human capital development varies between countries. The HDI is the ranking of countries according to life expectancy, income and educational enrolment, and adult literacy factors. HDI ranking divides countries into three groups at three different human development levels: high, medium and low (The Guardian Reporter, 2001). The Human Development Index (HDI), contained in the 2001 Human

Development Report of the United Nations Development Program (UNDP), show that Tanzania is in the low human development group (in table 3.1, page 83). The trend shows an improved value of Tanzania's HDI from 0.266 registered in 1991 to 0.421 in 1999. However, in terms of ranking, the country's position has relatively deteriorated, from 127 out of 160 countries to 156 out of 174. This could be explained as an after-effect of the introduction of cost sharing at all levels of the education system.

In the Sub-Saharan region, the best performer in 1999 was Mauritius, ranking at 59 and with a HDI value of 0.764, while the world's best performer was Canada, with a 0.932 in life expectancy, income per person, and education (The Guardian Reporter, 2001). Comparatively, the 1998 Human Development Report shows that Tanzania was ranked at 150, South Africa at 89 and Botswana at 97 with HDIs of 0.358, 0.717, and 0.678 respectively. The developing countries average HDI was 0.5864, and the developed countries average was 0.9114. Comparatively, Tanzania has a major deficit at all levels of human capital development, that is, at primary, secondary, vocational and tertiary levels of education.

Table 3.1: Tanzania's Human Development Index (HDI) trend

Human development report	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
HDI Value	0.413	0.266	0.268	0.270	0.306	0.364	0.364	0.357	0.358	0.421
Ranking Position/ total countries	-	127/160	126/160	138/173	148/173	147/173	144/174	149/174	150/172	156/174

Due to changes in HDI methodology, HDI in 1999 is not comparable with HDI in 1998;

Source: The Guardian Reporter (2001)

3.3.1 Education and training system in Tanzania

The structure of the formal education and training system in Tanzania constitutes two years of pre-primary education, seven years of primary education, four years of junior secondary (ordinary level), two years of senior secondary (advanced level), and up to three or more years of tertiary education. This is also termed a 7-4-2 education system. Specifically, the education system has three levels namely: basic, secondary and tertiary that are called first, second and third levels respectively.

Two ministries manage and coordinate the education sector: the Ministry of Education and Culture and the Ministry of Science, Technology and Higher Education. The Ministry of Regional Administration and Local Government also manage basic education.

The education and training market in Tanzania can be traced from the First World War, when only the Catholic and Protestant missions had primary schools. According to Schadler (1968: 114), by the year 1952, there were 1,812 primary schools, and two thirds of these schools were under Christian missions. At the same time, there were only 345 secondary schools.

After Independence, economists and politicians in Tanzania became education conscious. There was an urgent need for medium and high administrative personnel. The aims were to speed up the process of Tanzanians holding all-important positions in the civil service and meet the skill requirements for industrial expansion (Sabot, 1979: 255).

Consistent with a socialist development strategy, there was a shift in the education and training program. The objectives were to match the number of school leavers at various levels of education and training to the manpower requirements within the economy, to the extent of not giving rise to a surplus of educated and semi-educated people to aggravate the problem of unemployment. Subsequently, supply exceeded demand in the labour market, as post primary school leavers and post-secondary school leavers exceeded the expected employment level. The policy created a good number of unemployed, who considered self-employment as 'beneath their dignity'.

Compared to the pre-Independence years, in the 1990s participation in the provision of education and training have expanded drastically. Different stakeholders are providing education and training in Tanzania, among others the government, communities, religious organisations, and the private sector (United Republic of Tanzania, 1999). The number of institutions involved in providing primary education has increased from 10,891 in 1994 to 11,339 in 1998, secondary education from 491 in 1994 to 834 in 1998, while teacher-training colleges for primary and secondary school have increased from 40 to 41 colleges (United Republic of Tanzania, 2000). The three technical colleges, Dar es Salaam Institute of Technology, Arusha Technical College, and Mbeya Technical College, enrolled a total of 2,049 students in 1999, compared to 1,742 in 1997.

3.3.1.1 Education reforms in Tanzania

The objective of the 1995 education reforms was to ensure growing and equitable access to high quality formal education through facilities expansion, quality improvement and efficient supply and use of resources. The reforms have included changing the

government role from that of key player to that of facilitator in the provision of education. This new role of the government is to provide a conducive environment for the private sector, to increase its investment in education. Private investment in education will provide a better learning environment that will allow the imparting of both knowledge and skills to the youth for more active participation in economic development.

The Education Report (URT, 2001) shows that by the end of 2000, the number of institutions at tertiary level in the country had reached twenty-eight. Of this number, nine institutions are recognised as universities, seven are colleges and twelve are non-university tertiary level institutions. Appendix 3.1 (page 336) shows the list of institutions at tertiary level.

According to Mwenda (2001), strategies to improve education are still being formulated. The Ministry of Education and Culture has embarked on a strategy to revive Universal Primary Education (UPE) by the year 2005. This will ensure that all children aged between seven and thirteen years will attend primary school.

Prior to 1961, when the first fifteen students were admitted to the faculty of law in Lumumba, all successful secondary school leavers had to enroll at universities overseas or at one of the university colleges in Makerere (Uganda) and Nairobi (Kenya). According to the 1998 economic survey (URT, 1998), in 1997 the University of Dar es Salaam (UDSM) enrolled 4,128 students, the Muhimbili college of Health Sciences (MCHS) enrolled 421, while the Sokoine University of Agriculture (SUA) enrolled 1,044 students. The Open University of Tanzania (OUT) enrolled 4,909, while the University College of Lands and Architectural Studies (UCLAS) enrolled a total of 122 students.

Despite expansion in public education, the impact on job creation is not significant. Tanzania continues to experience a marked unemployment problem. According to Kapunda (1994:78), youth finishing primary education are severely affected by the unemployment problem. He further recommends that the Ministry of Education and Culture should review the curricula and syllabi from primary level to university level to

match the labour market needs. The revision could be successful by putting the marketing concept into practice. He calls for:

- (i) Correction of the imbalance between practical training and theoretical courses;
- (ii) Introduction of an 8-4-4 system instead of 7-4-2, as the latter system results in many youth completing school while too young for the labour market;
- (iii) Improvement of infrastructure in rural areas, as provision of communication, electricity, water, transportation, and recreation facilities in rural areas will attract rural employment;
- (iv) Credit facilities to be made available to the rural areas as well;
- (v) Appropriate technology to be chosen that utilises available skills, maximises output and employment;
- (vi) Vocational training that is specifically relevant to specific sectors to be expanded.

On all levels, the education system perhaps needs to be re-examined and restructured. This calls for a tailor-made education that is oriented to the Tanzanian environment, which sensitises and, therefore, stimulates, entrepreneurial development.

3.3.2 Training and education programs for Tanzanian SMMEs

Training is referred to as any transfer of relevant job-related competence; training becomes one of the most promising variables on SMMEs' success (Bass, 1995:8). The need for training and education of entrepreneurs in the SMME sector is justified by the constraints against survival and growth of SMMEs, as stated in subsection 2.10 (page 56). Moreover, the draft small and medium enterprise policy (URT, 2001:20) acknowledges that owner-managers of SMMEs have a low level of education and a low level of business skills. The draft policy further asserts that despite the increasing number of stakeholders involved in training and education of entrepreneurs in SMMEs, the quality of training is poor and the costs are often unaffordable for the trainees. As a result of the above shortfalls, there is an urgent need to review capacity building programs relating to SMMEs in Tanzania.

Lindi (2001) argues that training programs must be demand oriented. This calls for a marketing approach to training and education. Lindi (2001) further recommends that training need analyses should be carried out, after which training programs should be designed to suit the needs of SMMEs. Competent trainers and sound training methods should be used, and training programs should be short and focused.

On the shortfalls of training and education programs, Kikula (2002) argues that training and education providers lack proper equipment for the purpose. He further argues that some NGOs like Promotion of Rural and Development Enterprises (PRIDE – Tanzania), have tied credit facility to training. The question is what should one expect from those who do not have access to credit? This study is an attempt to investigate by comparing the conduct and performance of trained and untrained entrepreneurs.

According to Lindi (1999), most training programs offered to Tanzanian SMMEs are ad hoc and supply-oriented rather than need-based. That is, trainers are more interested in conducting the training than in assessing the needs of trainees. Carrier (1999: 39) reveals that some institutions offer training programs designed to suit every one, while in reality, they suit no one in particular. Due to training providers' sustainability problems, the trainer's objective is only to make money out of it. According to Ngirwa (2002), a lecturer at UDSM, these training institutions are hiring unqualified trainers at a negotiable price that is lower than what a competent trainer would charge.

Powell (1991:140) concludes that training works best when it is part of an integrated, enterprise-oriented package. Organisational objectives and goals should be at the forefront, not the needs of the provider or any other group. If training is to be productive, it should enhance the performance of individuals and firms. The question of measuring performance of SMMEs becomes an important one. In the following section, human capital models are discussed.

3.4 Human capital models

Human capital theory has undergone rapid development, as revealed by several human capital models that have been developed in the 20th century. Three main models will be discussed. Firstly, in 1962 Arrow developed a model with the assumption that learning takes place as the individual attempts to solve a problem, that is, learning takes place during the activity, such as the production process, and marketing of the product. This is called “learning by doing”.

Similarly, Lucas (1988) argues that human capital formulation is a spin-off effect of production. He emphasises that experience is the major source of acquiring knowledge and skills. Experiential learning has the role of increasing productivity. This is called “the learning effect”. The learning effect is revealed when the time expended in production is a decreasing function of the cumulative number units produced. This type of learning can take place consciously or unconsciously, which means that an individual may learn on-the-job without planning to do so. However, this model ignored the contribution of training and educational in human capital development.

Secondly, in 1966, Nelson and Phelps developed a human capital model showing that output (Q), is a function of Capital (K), labour (L), and time (t). This model is presented below in algebraic form.

$$Q(t) = F[K(t), A(t)L(t)],$$

where $Q(t)$ = output produced, $K(t)$ = Capital, $A(t)$ = Index of technology, and $L(t)$ = Labour working on technology. Nelson and Phelps further claim that adoption of new technology (T), w-years ago is a decreasing function of some index of average education attained (h). Hence $A(t) = T_0 e^{\lambda[t-w(h)]}$

In their approach, the amount of human capital accumulated through education determines the rate of innovations. That is, the more human capital is accumulated, the faster the quality of physical capital stock improves. According to this model, formal

education increases innovative abilities of employees, which increases the quality of physical capital, a condition appropriate in generating growth in output. The model developed by Nelson and Phelps becomes of the form,

$$Q(t) = [K(t), T_0 e^{\lambda[t-w(h)]L(t)}], \lambda > 0,$$

where, $Q(t)$ = output produced, $K(t)$ = Capital, $L(t)$ = Labour working on technology, T_0 = Technology, and λ = Theoretical technology advances.

Lastly, Black and Lynch (1996) developed an improved human capital model using the standard Cobb-Douglas production function. In this model, sales are augmented with addition of capital stock, materials, education and training, and labour. While this model has the strength of incorporating both training and education, it neglected to incorporate experience or “learning by doing”. This model is presented as follows.

$$\text{Log}(Y_i) = \text{Const.} + ax_i + b\text{Log } K_i + c\text{Log } M_i + d\text{Log } (LH)_i + e\text{Log } (LQ)_i$$

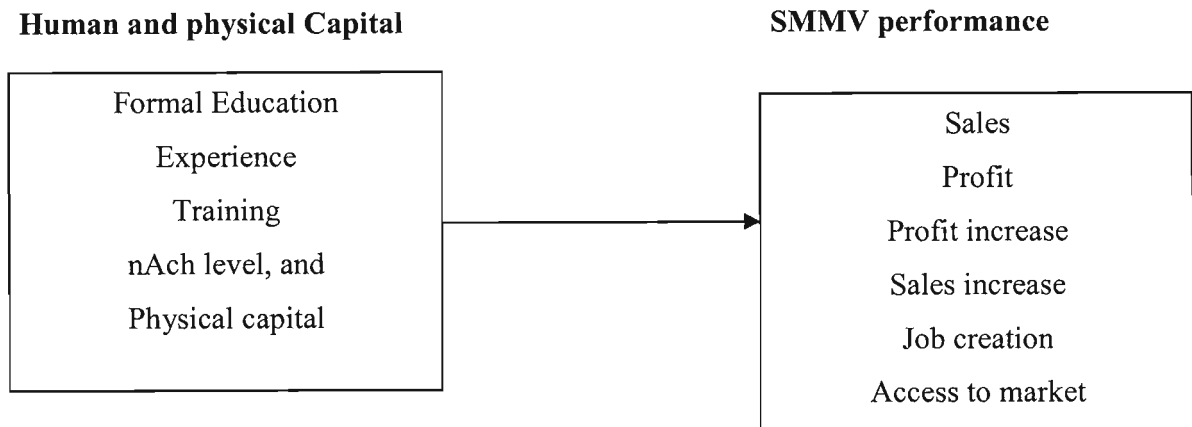
Where	Y_i	= value of sales, receipts and shipment
	M_i	= materials and services in production
	K_i	= book value of capital stock
	LH_i	= total labour hours
	LQ_i	= labour quality, proxy average education level
	x_i	= number of trained workers
	$a, b, \dots e$	= coefficients

3.4.1 Model for this Study

To evaluate the impact of human capital on performance of Tanzanian Small and Micro Manufacturing Ventures (SMMVs), this study slightly adopts the model developed by Black and Lynch (1996), which can be presented diagrammatically as figure 3.1 (page 90) shows. The model is divided into two major parts; one contains the human capital and physical, and the other contains the performance dimensions of SMMVs. Conceptually the model is presented as:

$$\text{SMMV Performance} = f(\text{human capital, physical capital})$$

Figure 3.1: Model for investigating the impact of training and education of SMMVs



The adopted model for this study is consistent with the fourth-level of Kirkpatrick's model. The fourth level of the model measures the "results" of training and education, level one evaluates the reaction, level two assesses the learning, and level three evaluates the change in behavior (Nickols, 2000; Todesco, 1997; Zondlo *et al*, 1995; Fox, 2001; McLinden *et al*, 1993). The four levels of the Kirkpatrick's model can be described as follows:

(i) Reactions

In 1955 Kirkpatrick (in Thorpe and Clifford, 2000) found that participants' reactions are the principal means for evaluating training and education programs. "Reactions" refers to how well the trainee liked a particular training and education program. Usually, participants' reactions are measured at the end of the training. Participants' reactions measure the feelings about a training program. Therefore, a qualitative set of data is gathered from trainees.

Participants' reactions have the following advantages. Participants' reactions provide input for the design and improvement of training programs. From the reactions received, trainers can continuously improve the delivery of training. The process of collecting

information also serves a 'customer relation' function, i.e. trainee could sense that trainers are interested in service delivery and are customer-oriented. Participants' reactions can be used to measure actual learning, on-the-job behavior, and organisational results.

Participants' reactions can be used to evaluate the affective and utility dimensions of the training program. Through affective judgment measurements, participants are asked how much they liked or were satisfied with different components of the training program. Utility judgment measurements test the extent to which the trainee can apply the training program content to the job. The findings from an empirical study conducted by Morgan and Casper (2000) show that participant reaction to training are multidimensional. Therefore, there are merits to using the judgment of owner-managers to investigate the impact of training and education on performance of SMMVs.

(ii) Learning

"Learning" identifies what principles, facts, and techniques were understood and absorbed by trainees. Also, what a trainee can do is measured after training. But, in order to conclude that knowledge and skills resulted from the training, the trainee's knowledge and skills prior to training must be known or measured. Without a point of comparison, the measurement of learning at the end of the training will not reveal exactly how much knowledge and skills have been derived from the training experience. Therefore, evaluation of learning requires measurement be done at two or more points. Participants can demonstrate what they have acquired through achievement or performance in exercises or tests.

(iii). Behavior

Behavior measurement refers to changes in on-the-job behavior. On-the-job evaluation includes feedback from participants, subordinates, and peers.

(iv) Results

The first three levels of Kirkpatrick's model center on the trainees, their reactions, their learning and changes in behavior. The fourth level is concerned with the organisational payoffs. The fourth level is the major focus of this study - the impact training, education, experience, and nAch have on performance of SMMVs. The following section describes the importance of human capital at macroeconomic level, and the study will revert to the linkage between human capital and business performance at a later stage, when discussing the importance of human capital at firm level.

3.5 Importance of human capital at macroeconomic level

Modern researchers reveal that human capital is a very influential input in the economic development of a country (Becker, 1995; Felli and Harris, 1996:838). Human capital is regarded as a primary determinant of a country's economic development, the engine of economic growth (Ehrlich and Lui, 1991:1030). In other words, human capital is seen as a key determinant of the productive capacity of a nation. The country's standard of living depends considerably on how well it succeeds in developing and utilising the skills, knowledge, health, and habitat of its people. Human abilities can be either innate or acquired. It is assumed that in larger populations, the distribution of innate abilities tends to be similar from one country to another. Therefore, differences between such countries are the consequence of the differences in acquired abilities (Schultz, 1981:21). As a result, human capital development is given priority in many government policies today.

Griffin and Knight (1990:38) argue that through long-term policies, countries could enhance the capabilities of their people. Emphasis should be placed not only on national income per head and its distribution, but also on enhancing the capabilities of people to do more things and lead fuller lives. Vosloo (1994b: 386) asserts that countries that have succeeded in achieving high economic growth and development in recent years have the following common features:

- They invest in the education and training of their people;
- They support private initiatives to enterprises by providing markets and a competitive trade environment;
- They encourage new ideas, technological innovations, and efforts for efficiency in production;
- They play a complementary role in the interaction between government and market;
- They nourish entrepreneurship as the link between innovation and production so as to perceive new economic opportunities, to take risks, to change methods of production and distribution, to do long range planning, to assume individual responsibilities, and to marshal and manage production skills and resources. Therefore, for economic growth and economic development to take place, there should be an inter-play of all factors and appropriate policies.

Human capital is considered to play a stimulating role if properly implemented and an inhibiting role if improperly programmed into the economy. Frequently cited impediments to economic growth and contributing causes of poverty in most Sub Saharan African (SSA) countries are poor human capital development and weak social service provision (White *et al*, 2001).

The Organisation for Economic Co-operation and Development (OECD) (1997) Report emphasises that the economic performance of OECD countries depends on the knowledge stock and the learning capabilities of its people. It is important to raise knowledge and skill levels of people through investing in human capital development. Skills and knowledge of the people contribute positively to raising their productivity and the nation's wealth producing capacity.

It is acknowledged that countries that have a labour force that is knowledgeable and skilled have managed to grow extremely rapidly. One major lesson is drawn from the remarkable economic success of Japan and the other nations of the Pacific Rim in the past three decades. The populations in the East Asian countries are better in cognitive skills, and are better able to acquire technology (Sabot, 1997:184). The outstanding

economic growth records of Japan, Taiwan, Hong Kong, South Korea and other fast growing Asian Newly Industrialised Countries (NICs) illustrates the importance of human capital development in economic growth. Superior education improves the quality of the labour force and enables the national population to accept advanced and sophisticated technology (Vosloo, 1994c: 85).

While studies on human capital development as a factor influencing productivity variations among nations are popular, as mentioned above, productivity variation across areas in the same country can also be identified. Results of a study by Cingano (2001) on productivity across Italian provinces show that variation in cross-province average productivity is due to human capital indicators. Cingano's study reveals that one year in schooling in a province raises average productivity in private non-agricultural activities from 9.5% to 11.5%.

According to Omari (1999:66):

“It is a compelling belief that there is some strong relationship between education and national prosperity. Education improves people's ability to acquire and use more complex information, thereby deepening their understanding of themselves, their environment and the fast globalising world. Education enriches human minds by broadening their experiences and imaginations, and improves the choices they make as consumers, producers, citizens and members of communities and households”.

North (1993:70) argues that education and training is “the ultimate source of growth... in fact, the knowledge and skills a society invests in”. Similarly, Somavia (2001) argues, “No society can succeed in a global environment unless its people have adequate knowledge and skills”. Mr. Mkapa (the third President of the United Republic of Tanzania, 1995-2005) has emphasised that “Without sound education and skills, Tanzania will not be able to compete in the global-wide fierce competition and remain afloat” (Tindwa, 2001). However, human capital is not of much impact to the economy if the people with knowledge and skills are not effectively used. Therefore, an extensive education system will not lead to economic progress unless the economy provides

markets and challenges for its application. This has been shown in most former socialist economies; Tanzania is no exception.

However, the basic source of economic growth at the macro-economic level is the success of micro-economic units. Recent literature on economic growth tends to identify the economy-wide engine of economic growth as human capital (Ehrlich *et al*, 1994:1036). This study focuses on human capital in the firm; an engine operating at micro level. The main emphasis is at the small and micro manufacturing firm level.

3.6 Importance of human capital at micro-economic level

The importance of human capital at micro-economic level can be approached from individual, household, and firm level. The following section will cover the importance of human capital at the individual/household level, and then at firm level.

3.6.1 Importance of human capital at individual/household level

Changing economic conditions usually create a disequilibrium that requires an individual or household to adjust to those changing conditions to attain equilibrium. The process of gaining equilibrium is called “disequillibrating”. According to Schultz (1975:833), human capital enhances the individuals’ efficiency in responding to changes. Therefore, human capital plays an important role for individuals when they work for the market or carry out household activities.

According to Becker (1993:24), a person’s time is divided into two - time spent working in the market and time spent on household activities. The time allocated between market and household activities are dependent on the returns from alternative activities. If human capital affects productivity differently, then time will be allocated differently between household and market activities. According to Becker (1976:126) an increase in human capital improves productivity of time in market place and also improves productivity of time and goods used in producing household consumption. Therefore, the incentive to

invest in human capital that mainly raises household productivity is greater when more time is spent in the household sector. The same is true even for the other, in which on-the-job training raises productivity of market time.

An individual's decision to invest in human capital is made to maximise the present value of future income streams. Individual investment in human capital consists of direct monetary costs and the value of earnings foregone by not working during the time it takes to acquire skills and knowledge. This theorisation assumes that the capital market is perfect, where rates of interest are given and there are no constraints to lending and borrowing.

Schultz (1975) further claims that education has positive influences on wives in the adoption of new and better contraceptives. Becker (1995: 3) expands on the importance of human capital to the household by describing the relationship between education level of parents and health matters of the family as follows:

- Educated parents invest more in their own health and the health of their children;
- Educated parents improve their food intake by providing healthier food; and
- Education increases the use of condoms that helps protect the family against HIV infection.

To support the importance of human capital for individuals, Bill Gates, one of the wealthiest individuals in the world, Chairman and co-founder of the Microsoft Corporation, when asked about the future of his children, said, "My kids will have computers, of course. But they'll have books first" (Gatline, 1999: 179). One can reason that knowledge and skills are paramount in meeting the current challenges of making a living. Economic changes are continuously creating disequilibria, which demand that individual respond to create equilibrium. Human capital enhances the individual ability to deal successfully with disequilibria. Human capital enables people to acquire knowledge and skills to understand and integrate all aspects of life, namely, the economic, the social, the business, the political, and the psychological (Knight, 2001; Maliyamkono *et al*, 1982).

Human capital referred to as skills and knowledge enhances productivity, regardless of where one is employed; it is, therefore, logical to assume that enterprises will invest in human capital development, as it is beneficial to the entrepreneur, firm, workers, and consumers. As a major focus of this study, the next section examines the impact of human capital at firm level.

3.6.2 Importance of human capital at firm level

If human capital provides people with knowledge and skills that are important to the national output and the household, it should also have an impact on the performance of a firm that employs the people. Moreover, the impact of human capital at macro-level consists of an aggregation of the micro-level impact that includes performance of firms.

Firms are considered the main agents for poverty alleviation and employment creation. Whether they are in mining, agriculture, or manufacturing, these sectors are considered engines for national economic growth. This study focuses on performance of Small and Micro Manufacturing Ventures.

To support this study, Sabot (1997:163) conducted a study on human capital accumulation in 90 developing countries for the period 1965 and 1987. Countries in East Asia, with exception of Thailand are found to have higher human capital accumulation in terms of enrollment and quality than that of Africa, Asia and Latin America. Similarly, manufacturing sector earnings, employment, and real wage bills increased at a much faster rate in East Asia than in Africa, Asia and Latin America. Hence, there can be no doubt that human capital development in Tanzania can have a positive impact on improving the earnings of workers and entrepreneurs engaged in the SMMV sector. It is important to know the linkages between human capital and business performance. The next section covers this.

Various factors contribute to the performance of firms. The factors can be external and internal. Internal factors include business, entrepreneur, and employee characteristics that interact to create a performance outcome (Olomi, 1999; Storey, 1994:113).

Knowledge and skills available in the firm enables the productive capacity of resources to increase over time. Knowledge and skills of entrepreneurs and employees are acquired from education, training, experience, and aspects of personality and motivation (Shane, 2003:96). Jones (2004:313) argues that the internal processes in the form of acquired knowledge and skills influence venture performance. The current study focuses on the impact of physical capital and human capital in the performance of Tanzanian small and micro-manufacturing firms. The following is a discussion of selected literature on the linkage between human capital and SMME performances.

3.6.2.1 Need achievement and SMME performance

A most commonly referred attribute for effectiveness of business entrepreneurs is need for achievement (McClelland, 1961). Other entrepreneurial attributes are need for autonomy, independence, creativity, risk taking, internal locus of control, pro-activeness, and future orientation (Storey, 1995; Boshoff and Boer, 1988). Shane (2003:97) seems to add agreeableness as another aspect of personality that influences business performance.

In the words of Shane (2003:93), nAch is an individual's drive to carry out actions that involve personal responsibility for results, require individual effort and skills, involve moderate risk, and provide clear feedback. To the social scientist, an individual drive to excel is required for entrepreneurial activity to convert resources, capital, and manpower into production and, eventually, into income.

The traditional view is that an entrepreneur is usually a born-entrepreneur, often uneducated, unskilled, poor, migrant, possibly with an ethnic background, is socially marginalised, and therefore seeks upward mobility (Burns and Dewhurst, 1993). According to Le Vine (1966:2), certain ethnic groups have provided classic examples of

this phenomenon, like the Ibo (Nigeria), Kikuyu (Kenya), Chagga (Tanzania), Ewe (Ghana), Bamileke (Cameroon). Though certain cultural backgrounds and personality traits are important, human capital development precedes on the precept that given a minimum of certain personality traits, anyone can acquire knowledge and skills to be a successful entrepreneur (Nafukho, 1998:102, McClelland, 1965).

According to Rutashobya (1999), entrepreneurial outcomes cannot be solely explained by the personal characteristics of the entrepreneur. Factors that are external to the entrepreneur ought to be considered as well. McClelland (1968) believes that the development of a more self-confident, achievement-motivated population is imperative for national economic growth. He further argues that achievement motivation is developed at an early age; hence, educated mothers provide the kind of support likely to nurture achievement motivation.

While some individuals continue to believe that to perform better in the SMME sector one has to be born with entrepreneurial attributes, contemporary studies focus on new combinations of factors influencing human capital development. Entrepreneur's achievement motivation can be enhanced through appropriate training and subsequently promote business performance. Therefore, human capital in terms of training becomes the input for entrepreneurial success.

Other studies observe that the need for achievement (nAch) training has a positive significant effect on the efficiency of an organisation. It brings about better performance for the organisation in which the subject was exposed to nAch training than counterparts who were not exposed to this training (Schultz, 1980:443; Mahadea 1993:29, Mahadea 2000). Boshoff and Boer (1988:85) argue that capacity to take risks and be achievement-oriented also can be nurtured and developed by appropriate training.

Some studies have found that entrepreneurs' need achievement has impact on performance. The argument is that entrepreneurs scoring high in nAch are presumed to perform better than people scoring less. In support of this argument, using Partial Least

Square (PLS), Lee and Tsang (2001:583) studied 168 Chinese entrepreneurs in small and medium sized businesses in Singapore. They found that entrepreneurs need achievement is significantly and positively related to venture performance (2001:596).

A study by Mahadea (1994:94) in Transkei indicates that nAch is a significant predictor of entrepreneurial success at small venture level. In his study, small venture performance was examined in terms of assets, sales, and employment growth. Entrepreneurs with high nAch have greater proportional asset, employment, and sales growth rate than their counterparts who are low in nAch.

With this background, the current study is an attempt to investigate the impact of nAch on the performance of Tanzanian entrepreneurs in the SMMV sector. However, nAch is investigated together with other variables like training, education and experience. McMahon's study (2001) indicates that training, education, staffing, professional advice, and planning can predict business performance of SMMEs in Central Eastern Europe. And, Frese and de Kruif (2000:12-25) argue that it is not only personality that matters in the starting-up and success of entrepreneurs in SMMEs, but years of schooling, work experience, and prior career experience. The following section discusses the linkages between education and SMME performance.

3.6.2.2 Education and SMME performance

In the SMME context, Olomi (1999) observes that the relation between education and performance of SMMEs remains an unsettled issue. Different studies have come up with conflicting findings regarding the linkages between education/training and SMME performance, as table 3.3 (on page 102) shows (Matambalya and Wolf, 2000:5).

Knowledge and skills acquired from education enhances productivity of SMMVs. Factor productivity and productivity differentials of production inputs determine enterprise performance differentials. In this knowledge age, intellectual capital in enterprises is

considered a means for acquiring a competitive edge (Todesco, 1997:2; Matambalya and Wolf, 2000:4).

Labour productivity is basically the ratio of output and labour, that is, a measure of value added per worker. For firms with similar production processes, labour productivity provides a comparative measure of how efficiently the labour input is used. Labour productivity is associated with improvement in education of labour force (Jones, 2001:58; Fleischer *et al* 1996:587). Improved education is related to human capital development. Education is associated with the capability of the people in the economy and/or employees in an enterprise (Visser, 1994:315; Contogiannis, 1991: 81).

In a study conducted in Ghana, Gyan-Baffour (1999:12) found that productivity correlates significantly and positively with educational qualification of the entrepreneur. Huria (2000) further argues that transformation of human capital is important for improvement of labour productivity: human capabilities are required for research and development, technology generation, technology management, project implementation, manufacturing, and marketing. Again, technological issues call for appropriate education and training. Hence, nations need suitable training and education programs, and suitable institutions.

Similarly, Ehrlich *et al* (1994:1008) observes that the engine of productivity growth is entrepreneurial capacity that is conceived as human capital. The major implication of these findings is that there is a need for improving education programs, so that they provide entrepreneurs with the necessary skills and knowledge for improvements in productivity.

Table 3.3: Selected studies on the linkages between education/training and enterprise performance

Study	Focus	Major findings
Vickery and Wurzburg 1996	Multi-sector	<p>Training and education, when combined with changes in organisation, technology, and human-resource management practices, lead to direct gains in productivity and competitiveness.</p> <p>Competitiveness can be gained by ensuring adequate volumes of investment in human resources to maintain qualifications. This training has to be more closely linked to the workplace.</p>
Adjibolsoo 1996	Multi-sector	Regardless of the magnitude of the resources put into productivity and quality enhancement programs, the results may not be sustainable without adequate development of human qualities.
Sleuwaegen and Goedhuys 1998	Multi-sector	<p>Formal education seems to influence gradually and positively the firm's growth by increasing the learning capacities.</p> <p>The achievement of secondary school increases the expected growth rate by 27 percent, a University degree by 41 percent.</p>
Estler 1998		Human capital increases enterprise performance.
Teitel 1999	Manufacturing Enterprises	The thesis that the education of the owner or general manager rather than the availability of specific technical skills in the plant could be the main cause responsible for better technological performance is not valid.
Biggs, Shah and Srivastava, 1995	Manufacturing Enterprises	<p>Worker training has the largest impact for the whole sample as well as in each country except Kenya.</p> <p>For the sample as a whole, if the percentage of total workers being trained by firms is increased by 1% from its sample average of 9 percent, the value added would increase by almost 60%.</p>

Source: As compiled by Matambalya and Wolf (2000:5)

African countries are characterised by low labour productivity. However, there is a shortage of comparative studies on labour productivity among African countries. According to Rweyemamu (1979), in all sectors of the Tanzanian economy, labour

productivity is significantly lower than that of Japan, the United Kingdom, and the United States of America, due to the knowledge and skill deficiency of the labour force.

Empirically relevant determinants of low labour productivity in African countries are skills and knowledge in organising, planning and co-ordination, production and financial control, plant and equipment maintenance, and motivation skills. Therefore, low labour productivity seems to be associated with education (United Nations Economic Commission for Africa Report, 1995).

Education enhances earnings from self-employment. Using a sample (drawn from the 1980 US census of population) of White, Black, Asian, and Hispanic men, 25-64 years old employed in non-agricultural sector. Borjas and Bronars (1989:602) found that having 16 or more years of education has a positive and significant effect on self-employment earnings for Whites, Blacks and Hispanics.

Education of the entrepreneur is also associated with the firm's survival. Bates (1995:29) used a larger sample of US businesses formed between 1984 and 1987. From this sample, (drawn from US's Nation-Wide Small Business Database, compiled by Census Bureau for the Characteristics of Business Owner), he found that differences in owners' education are significantly and positively correlated with survival.

Education seems be associated with business performance, even in the African context. Using data from a survey of 200 manufacturing firms, Jones (2001:58) found that education is highly correlated with increases in output in surveyed Ghanaian firms. Similarly, in a study of about 1,000 Kenyan MSEs that are employing between one and fifty workers in 1995, Daniels and Mead (1998:63) found that a higher education level in the owner is significantly associated with the profitability of an enterprise.

Contradictory views are also found regarding the link between education and performance of SMMEs. According to Hall and Fulshaw's (1993:232) study of British small firms, education level of owner-managers does not appear to affect profitability.

Also, other performance measures like sales do not appear to be influenced by owner-manager's education or attendance of management courses. Marketing variables like market research were found to be significantly associated with profitability.

Using a sample drawn from the 1984 survey of income program participation in America, Hamilton (2000:608/9) examined 8,771 males, between 18 and 65 years of age, engaged in a non-farm sector. He found that earnings from self-employment among high school graduates were not significantly different from those of high school dropouts (2000:618).

In a study of 380 Swedish entrepreneurs with newly established ventures and 608 Swedish adults, Davidsson and Honig (2003:321) found that the impact of human capital indicators on entrepreneurs' successful exploitation of business opportunities was weak. According to their study, months of studying business education and formal education are not significantly correlated with sales and venture being profitable.

Hall and Fulshaw's (1993) study failed to acknowledge that only owner-managers who have acquired appropriate knowledge and skills could do market research, new product development, and make marketing strategies and any other innovative activity happen at firm level. Despite findings by Hall and Fulshaw (1993), Hamilton (2000), and Davidsson and Honig (2003); that, there is significantly weak relationship between level of education and business performance. Firms with an educated labour force earn higher profits than others (Rutashobya, 2001). In this study the impact of entrepreneur and employee education will be examined.

3.6.2.3 Training and SMME performance

The results of training may be categorised as direct output and indirect output from the business. Indirect output includes new skills, knowledge, attitudes, and values that entrepreneurs acquire from the training program, while direct output is measured in terms of improved business performance. Improved performance of SMMEs is measured in terms of improved work performance and quality of products, increased sales and profit,

reduced cost of sales, and expansion of business. Acquired skills that are put into practice will result in the increase of production in SMMVs.

Training improves business performance. First, Herron (1991) concludes that the skills of the entrepreneur are important characteristics in determining new venture performance. He identifies seven types of skills that are significant predictors of new venture performance: technical product skill, technical business skill, technical industry skill, leadership skill, networking skill, administrative skill, and entrepreneurial skill. All these skills are the products of training and aptitude.

Secondly, Chell (2001) claims that the crucial skills for owner-managers or entrepreneurs are networking, image making, innovation, initiative, opportunism, and judgment. All these skills can be acquired through relevant training and business interaction. Edmund (1979), and Rosa and Scott (1997) argue that apart from small enterprises having difficulties in planning, some of their difficulties are due to lack of managerial skills and experience. This shortfall can be corrected through training. In the words of Drucker (1985:264) “The correct assumption is that what individuals have learned... begins to become obsolete five to ten years later and will have to be replaced or at least refurbished by new learning, new skills, new knowledge”. Continuous training and education is the answer to the continuous knowledge and skills obsolescence in SMMVs.

Casson (1982: 36) supports the enhancement of entrepreneurial capabilities, and claims that practical knowledge, analytical ability, research skills, computational skills, delegation, and organisational skills (in table 3.4) can be enhanced through training. However, Casson believes that imagination is largely a genetic endowment, and cannot be easily enhanced through training. Other researchers may not necessarily agree with this view.

Table 3.4: Analysis of entrepreneurial qualities

Quality	Essential to all non-trivial decisions	Capable of enhancement
Self-knowledge	V	X
Imagination	V	X
Practical knowledge	V	V
Analytical ability	V	V
Research skills	V	V
Foresight	V	V
Computational skill	V	V
Communication skill	V	X
Delegation skill	V	V
Organisational skill	V	V

Key: V = Yes, X = No, Source: Adopted from Casson, M. C. (1982:36)

Schonewille (1999) observes that if an individual worker is trained in a particular year, the application of new skills and knowledge in the production process occurs in the following year. Training can, therefore, have a lagged effect in generating benefits for the organisation. Schonewille (1999) and Neitzert (1996:84) further conclude that training has a positive effect on labour productivity.

For better results, training must be linked directly to the objectives of the firm. Training has better results in terms of business objectives if appropriately targeted and focused. Shortfalls in training can be perceived when there is lack of direction or relevance, or when training is viewed as an end in itself. Training must be considered a partner to SMME objectives (Silvestro *et al*, 1991).

3.6.2.4 Experience and SMME performance

The main reason for the linking of experience and business performance is the presumption that entrepreneurs and employees with more experience have knowledge and skills for exploiting business opportunities, hence the businesses they are in can perform better. The reverse is also true. To support the argument above, between 1976 and 1980, Evans (1987:567) examined 100 manufacturing firms drawn from the US's Small Business Database (SBDB). He found that years of experience in a firm are negatively related to firm failure.

Likewise, Lee and Tsang (2001:396) studied 168 Chinese entrepreneurs engaged in small and medium sized businesses in Singapore. They found that experience is significantly and positively related to business growth.

Moreover, people can also acquire knowledge and skills for application into their businesses from observing others. The others could be ones parents, other entrepreneurs, family members, or friends (Storey, 1994; Shane, 2003). Using micro-data from 5,159 young women from the 1988 US's National Longitudinal Survey of Labour Market Experience, Caputo and Dolinsky (1998:11) found that women were more likely to be self-employed if the husband was self employed. In this study, entrepreneur prior career experience and employee experience in the current firm was examined.

The performance of SMMVs might not exclusively be based on human capital of employees and entrepreneurs. Other factors, such as the availability of capital, government policies and regulations, and competence of training and education providers in the field of SMME development, can certainly play an important contributory role. Start-up capital has been incorporated into this study.

3.6.2.5 Physical capital and SMME performance

Capital is another important factor for business success. A lot more can be done in a business setting with adequate capital. With adequate capital, a firm could be more responsive to arising opportunities. According to Shane (2003:162), more capital overcomes liquidity problems that could have prevented the entrepreneur from pursuing an opportunity.

To support the importance of start-up capital, in a study of the characteristics of business owners in the US, Bates (1995:25) found that new businesses with more start-up capital are more likely to survive over time than their counterparts with less. Start-up capital was included in this study due to its relevance to business success. The following section provides a review of other related studies.

3.7 Review of other studies

Following is a summary of some recent studies regarding SMME training and education. It is apparent to the researcher that little research is available on the impact of training and education programs on the performance of SMMEs. This study is in attempt to fill the gap by minimising the shortcomings of the following three studies.

3.7.1 The Saini study

Saini's (1996) study compared the employment and capital investment growth rates of enterprises owned by trained and untrained entrepreneurs. The following features of Saini's work are worth noting.

The study was carried out in seven districts of India. Institutions with entrepreneurial development programs provided the list of trainees trained by them between 1980 and 1990. From this list, a sample of trained entrepreneurs was drawn. Random sampling was

adopted as a benchmark for the sample of untrained entrepreneurs. Thus, 34 untrained and 34 trained entrepreneurs were interviewed, using two different instruments.

The following shortfalls can be identified in Saini's methodology. The sample size is too small to generalise for India. Moreover, findings cannot be generalised to other countries, unless a cross-national study is undertaken. The other shortfall is that of investigating the impact of training on entrepreneurs from the perspective of the recipients only. Excluding the providers of training programs is a serious limitation of Saini's study.

This study attempts to fill the gap by including a larger sample and investigating the impact of human capital. Despite the shortfalls, Saini's study concludes that trained entrepreneurs significantly generated more employment, achieved higher sales turnover, and employed less capital in comparison to untrained entrepreneurs.

3.7.2 The Kiker study

The Kiker (2000) study considered the provision of education and training to SMMEs. It was conducted in South Africa by interviewing the following: education-oriented NGOs, training-oriented NGOs, small business owners, private training organisations, and Government agencies. Education-oriented NGOs are those trying to make their education programs more relevant to the economic needs of unemployed people, while training-oriented NGOs are trying to enhance skills through training that is linked to actual work experience. Also interviewed were small business owners, who informally train and mentor other business people; private training organisations, which formally train and mentor business people; researchers at tertiary institutions; and government bodies trying to develop and support the implementation of relevant transformative policies.

Kiker's study has a major shortfall: no structured questionnaire was used in gathering information. This approach makes it impossible for others to test the repeatability of the study and generalise the findings. Further, there is too much emphasis on training providers and other support agencies, in trying to investigate the effectiveness of

programs on SMMEs through integration of Adult Basic Education (ABE) and training. Lastly, the study ignored other important elements of human capital like experience and formal education.

Kiker's study concludes that the integration of ABE and training should be acceptable to providers and be promoted by policy makers. It is still unclear how to integrate them. In light of the shortfalls stated above, this study attempts to fill this gap by using one questionnaire for entrepreneurs in the SMMV sector. To examine the impact of human capital on SMMV performance, the surveyed enterprises in this study are grouped in terms of employees' and entrepreneurs' level of education, nAch, training, and experience.

3.7.3 The Obiri study

Obiri's (2000) study investigated the importance of market-led development on empowerment of rural small businesses. Obiri used Gateway, a training and development service provider in Pietermaritzburg, KwaZulu/Natal, South Africa, as a case study in order to identify the organisation's competencies and areas that may require improvement. A list of clients of Gateway was obtained, while a list of potential customers was drawn from the yellow pages.

Obiri's study suggests that market-led training can be more effective in SMMEs. Through gathering information on the needs and wants of SMMEs, appropriate training can be developed. However, Obiri's study used only one organisation, Gateway, as a case study. It also used fewer than 30 retailers. This study fills this gap by including 200 entrepreneurs who are engaged in SMMVs.

3.8 Synthesis

In this study, entrepreneur nAch, training, education, and experience together with, employee education training and experience are presumed to impact on performance of

SMMVs. The human capital elements stated are also presumed to impact on the conduct of business of SMMVs. To investigate the impact of human capital, performance of two independent samples of SMMVs are compared at a time, one that has high nAch against low nAch, trained and untrained, educated and uneducated, and experienced and inexperienced. Kelly *et al* (1984) supports this approach.

The earlier studies mentioned used relatively small and/or non-representative samples, thus limiting their external validity or generalisability. The sample of 200 entrepreneurs and the random sampling employed in this study can make a contribution to enhance our understanding of entrepreneurship in the Tanzanian SMMV sector.

Data for the current study was gathered from owner-managers of Small and Micro Manufacturing Ventures having between one and forty-nine employees. In effect, relevant data was gathered for both entrepreneurs and employees. Human capital was categorised into four major components, formal education, training, need achievement, and experience. These elements were then associated with a selected list of performance measures like sales, profit, job creation, profit increase, sales increase, and access to markets.

Where skills and knowledge deficiencies lead to mistakes, waste, defects, low productivity, poor sales, low profit, and low opportunity for business expansion, human capital (which eliminates these deficiencies) is a solution to organisational performance problems. An improvement in overall productivity, sales, profits, innovation, and job creation might constitute the output of human capital.

Related to SMMV performance, are terms like competencies, and success. Wickham (1998:93) states that a successful business exists for more years, and grows in terms of sales, profit, and number of people employed. Business growth is considered a core value of business survival (Robinson and Robinson, 1999). However, Kirkpatrick (1996:89) points out “there are so many complicating factors, that it is extremely difficult to evaluate human capital in terms of results”. The separation of variables to measure how

much of the improvement is due to training, education, and experience is extremely difficult. Sales, profit, and job creation opportunities may be subject to other conditions beyond skills, knowledge, and attitude acquired by the entrepreneur and employee (Honig, 1996).

The International Labour Organisation (2001) asserts that growth of SMMEs improves the income of the owner, employees, suppliers, and the state by improving the living standard of the entire population of a given country. Developing economies like Tanzania need a sustainable way to contribute to economic growth and social development through improvement of skills and knowledge in SMMVs.

3.9 Recent developments in Literature

Entrepreneurship is a highly complex process influenced by a wide range of variables (Baron, 2004:170). According to a United Nations Report (2004), for entrepreneurship to flourish in an economy entrepreneurs should have: access to finance, knowledge and skills, and a supportive legal framework in a competitive environment. Entrepreneurship is closely associated with business formation and expansion. However, successful venture creations would require substantial amounts of both tangible and intangible resources. Since small and large firms differ from each other in terms of organisational structure, responses to environment, managerial style, and the way in which they compete, studies focusing on large firms may not be directly compared to SMEs. As a result, this thesis attempts to show the extent to which human capital enhances small and micro manufacturing venture performance. A developed human capital is an agent for economic development, that is education, training, and work experience of employees and entrepreneurs can show positive signs in predicting performance, not only of individuals in the labor market, but also of enterprises and national economies.

In the context of human capital theory, a study by Bosma *et al* (2002:9-12) examined the performance of 1,000 entrepreneurs in the Netherlands over the period 1994 – 1997. Performance was analysed in terms of survival, profit, and job creation. It was found that

the more specific an investment in labour and capital is to its current use the higher the contribution to business performance. In other words, specificity in terms of human and physical capital is found to significantly influence the survival of ventures, their profit growth and employment creation. Prior experience in a business similar to the one started also appeared to contribute to performance. Further, ventures with highly educated people make more profits, and those whose entrepreneurs have some experience in leadership survive longer relative to firms with poor leadership experience and education.

In recent times, some researchers have focused on entrepreneurial capital as a variable influencing business performance. Following a study of MBA students in the UK in 2002 by Erikson, entrepreneurial capital is found to be the most important asset to sustaining venture competitiveness. Entrepreneurial capital according to Erikson (2002:) is a function of entrepreneurial competence and commitment. It can be argued that entrepreneurial competence without commitment creates little value to the new venture, the opposite is also true. The idea of the study was that, a business venture will have a sustained competitive advantage if it possesses a unique value-creating strategy. This advantage is sustained so long as it cannot be duplicated by others. The entrepreneur can be a source of such capabilities that are valuable, rare, difficult to imitate, and have few substitutes. The policy orientation of this study for further development of SME entrepreneurship suggests that the higher the degree of perceived entrepreneurial competence and the stronger the entrepreneurial commitment, the greater is the entrepreneurial capital. It follows from this study that society, investors, and educational institutions should focus on the drivers of entrepreneurial competence and commitment to enhance the level of entrepreneurship in a region (Erikson, 2002:286). McClelland and Burnham (2003:109) further add that, a good entrepreneur is one who helps subordinates feel strong and responsible, rewards them properly, and fosters a strong sense of team spirit in the business.

Different researchers in the field of entrepreneurship have attempted to answer three basic questions: why do some persons but not others choose to become entrepreneurs? why do some persons but not others recognise and exploit business opportunities? and

why some entrepreneurs are more successful than others? (Shane and Venkataraman: 2000; Man *et al*, 2002:124; Ward, 2004:174). Apart from human and physical capital, there are other factors that researchers have recently identified to have a bearing on SME performance. A recent development in entrepreneurship literature is the role of social capital into the performance of business ventures. Social capital, defined as the entrepreneurial competence in terms of networking relationships, exercise of trust, reciprocity, conflict resolution, focus on team goals, and exchange relation with others, is found to be associated with business development (Cooke and Clifton, 2003:1; Bridge *et al*, 2003:95).

According to Baron and Markman (2003:46), when examining business performance one should go 'beyond social capital'. Baron and Markman (2003) argue that social competence of entrepreneurs should also be taken into consideration. To assess aspects of social competence, like accuracy in perceiving others, skills at impression management, and persuasiveness, a sample of 230 entrepreneurs in the USA in cosmetics distribution and high – tech business completed a questionnaire. This study found that aspects of social capital are positively related to financial success for both groups of entrepreneurs (Baron and Markman, 2003:53).

Similarly, in a study of 350 business partnerships in a southwest metropolitan area in USA, Watson *et al* (2003:158) found that partners with more education and work experience perceived their firms to be more successful. The researchers also found that partners with higher interpersonal processes would evaluate their ventures to be more profitable and expanding faster than those with weaker interpersonal scores. On the basis of this study, one can argue that developed human capital and interpersonal skills of the management team is critical for improved performance. The performance of a business can be enhanced if its management lies in a team rather than in just a single entrepreneur.

Although the entrepreneur is an important player in the activities of SMEs, the composition of their management team becomes important as well. Looking at a business venture as a group of different players allows researchers to explore the impact of teams

on business development. The significant relationship between such aspects of social competence and financial outcomes suggests that, like human and physical capital, social capital is another important variable. Specifically, effectiveness in interacting with others on a face – to –face basis may play a significant role in explaining why some entrepreneurs are more successful than others (Watson *et al*, 2003:158).

Social capital seems to be useful at different levels of the entrepreneurial process. During the new venture creation phase, for example, entrepreneurs should form sound social relationships with customers, supplier, and employees. Capital is usually a critical constraint in the development phase of a new business. The entrepreneur can augment his capital if he has access to social capital and is good at communicating the vision and plans for the venture. During early stages of the venture creation, effective communication between entrepreneurs and venture capitalists then becomes crucial. One could therefore suggest that although human and physical capitals are important, they become more productive when they are integrated with other social resources. Such integration is largely dependent on the development of the social capital of entrepreneur and management team.

Lastly, a study by Cooke and Clifton (2003:9) brings up more comprehensive insights on the role of social capital in SME performance. They studied 450 SMEs in the UK with 200 or fewer employees, using the local, regional, and national data. They found that, entrepreneurs engaged in SMEs are high users of social capital. They are likely to develop strategic contacts that are external and global, put high emphasis on external information for business performance, often share valuable information with other stakeholders, rate collaboration as beneficial, and they highly consider trust in their collaborations.

Entrepreneurship is, thus, a complex but dynamic phenomenon associated with the activities of the entrepreneur in setting-up and expanding a business. Traditionally, emphasis was placed on the characteristics of the entrepreneur as the primary factor in the entrepreneurial process. Over time, the role of human capital has been found to be also

important in promoting entrepreneurial development together with physical capital. The entrepreneur should not be the sole person to start and finance a business venture. One could usefully seek the help of other persons like venture capitalists and financial institutions. As a result of the requirement for entrepreneurs to interact with others, the role of social capital has recently emerged in the entrepreneurship literature. This study acknowledges the importance of social capital; however, it focuses on human capital.

It follows therefore that entrepreneurial theory building should approach the business performance in a broader and holistic perspective, whereby, interactive models that include human, physical, and social capital are included to provide a complete theoretical account of factors influencing the entrepreneurial performance. By so doing each level of analysis could be represented as a system of interdependent components (Phan, 2004:919; Wiklund and Shepherd, 2005: 85).

3.10 Summary

The chapter has reviewed some literature on human capital and entrepreneurship. Literature shows that there exists a certain relationship between human capital and business performance. However, this association has received mixed reactions from researchers. Some find a significant and positive association between human capital and business performance, while others are even skeptical about the existence of any link. Hence, this study might find reasons to support those who found some kind of relationship between human capital and performance of Tanzanian SMMVs. Aggregating of the performance of economic units results in national economic performance. Hence, national economic performance is partially associated with the performance of SMMEs. From this chapter, four important points can be drawn.

First, the chapter shows that human capital theorists are optimistic that human capital plays an essential role in the economic performance of a nation. The living standard of people in an economy depends on the utilisation of knowledge and skills to improve productivity at individual, organisational, and national level. The importance of human

capital development is evident from the outstanding economic growth records of countries with similar attributes to Tanzania. These include South Africa, Botswana, the Asian Newly Industrialising Countries, and some Latin American countries. Therefore, human capital is considered to be equally important to a developing country like Tanzania.

Secondly, Tanzania is ranked low in terms of the Human Development Index (HDI). This may be due to an inappropriate education system, inadequacy of training and education programs, and the fact that institutions involved in the provision of services are ineffective. Other explanations regarding the shortfall of education and training programs include lack of expertise, lack of equipment, the fact that training and education is too expensive, and that most training and education programs are supply oriented.

Thirdly, despite conflicting signals from researchers, there is evidence that human capital is significantly and positively related to the performance of economic units. That is, performance of SMMVs in terms of productivity, profitability, sales, innovations, job creation, and business growth is associated with nAch, education, training, and experience of the entrepreneurs and that of workers in an enterprise.

The last point that emerges from this chapter is that there are several human capital models like Arrow's model, Nelson and Phelps's model, and Black and Lynch's model. The weakness in these models is found in their use of only one or two elements of human capital. For example, Arrow (1961) incorporated only experience, Nelson and Phelps (1966), and also Romer (1990) emphasised education, while Black and Lynch (1966) emphasised education and training.

The model to investigate the contributions of human capital on SMMV performance in Tanzania, incorporates education, training, experience, and need achievement. A discussion of the measurement of the variables is provided in the following chapter. It also examines research methodology aspects, like sampling design, hypothesis development, and related plans for data collection and analyses.

CHAPTER 4

RESEARCH DESIGN AND METHODOLOGY

4.1 Introduction

The research methodology chapter provides a systematic way to solve the research problem. It involves identifying specific methods and techniques that are to be adopted in conducting the research, along with the rationale for the choice. Research methodology can be understood as the logic underlying the implementation of the scientific approach to the study.

This study involved three main phases: preparation, fieldwork, and analysis. The preparatory stage began with extensive library research to identify key variables for investigating the impact of human capital elements on SMMV performance. The preparatory phase also involved the development of a structured questionnaire (appendix 4.5, page 344), and pre-testing of the questionnaire in and around the Iringa and Dar es Salaam regions. Experts were contacted in Morogoro as well. The second phase of the study involved visiting and interviewing entrepreneurs in small and micro manufacturing ventures in both rural and urban locations in Tanzania. Introductory letters from the Ministry of Industry and Trade (MIT), Small Industry Development Organisation (SIDO), Tanzania Chamber of Commerce, Industry and Agriculture (TCCIA) (appendices 4.2, 4.3, and 4.4 respectively) enabled the researcher to reach 218 entrepreneurs.

The chapter consists of several major parts. The first part highlights the hypotheses to be tested. The formulated research hypotheses centered on the association between a selected set of human capital elements like need achievement, education, training, and experience, and performance of Small and Micro Manufacturing Ventures (SMMVs) in selected areas of Tanzania. Six secondary hypotheses were formulated as well.

In order to investigate the impact of training and education programs on performance of SMMVs, the second part of the chapter identified the different types of research. The main focus is on the four most common categories: exploratory, causal, descriptive, and analytical research. To meet the major objective of the study a descriptive and analytical approach was adopted.

The third part describes the sampling design. The sampling design section explains the population, the sample, and the sampling approach. The target population consists of all the SMMVs in Tanzania whose physical addresses were accessible during the study. This study uses a stratified sampling approach. This section also operationalises the definition of SMMVs. Tanzanian-based ventures, employing between 1-49 workers and also engaged in the production of tangible products for sale, were included in the study.

The fourth part of this chapter discusses the variables and their measurement. Formal education, training, experience, and need achievement were categorised as independent variables while sales, profit, job creation, and growth of the same were considered as dependent variables. Also included, as dependent variables, were the number of business records kept and access to bank loans.

The fifth part looks at the data gathering approach and development of the research instrument. To ensure maximum rate of response, personal interviews were used. The sixth part provides for the data analyses strategies. To statistically analyse the collected data, parametric and non-parametric tests were used which included ANOVA, t-tests, F-tests, chi-square tests, and Mann-Whitney U tests, as well as discriminant, correlation, and Multiple regression analyses. The last part of the chapter looks at the validity and reliability of the study.

4.1.1 Operational definition of SMMVs

For the purpose of this study, SMMVs are defined using only the number of employees. The use of number of employees to describe small enterprises is becoming a common

phenomenon in academic, policy, and research circles (Barrow, 1993; Bobyne, 1998). This approach is consistent with the Bolton Committee's (1971) definition of small manufacturing firms, and with the EU's definition, making it possible to compare the results of this study with previous studies in Tanzania, like those of Olomi (2001), Chijoriga *et al* (2001), and Mbilinyi and Shundi (1999).

The study population consisted of all entrepreneurs engaged in SMMVs who have physical addresses with the Tanzanian Ministry of Industry and Trade (MIT), or its agencies. In this study, SMMVs are operationally defined as manufacturing enterprises located in Tanzania, employing between 1 and 49 workers (including temporary, permanent, contractual, part-time, or full-time workers), and producing tangible products for sale. These enterprises should be involved in the mechanical or chemical transformation of inorganic and organic substances into new products. The work can be performed either by power-driven machines or by hand; it can be done in a factory, in the owner's home, be an urban or rural establishment, and the products can be sold wholesale or retail (Ormond, 1993:19; Mshange, 1978:16). In this study, urban areas include cities, towns, municipalities, and their suburbs. Rural areas are places that are located outside town, city, and municipal boundaries.

4.2 Research propositions and hypotheses

This study investigates the impact of human capital on the performance of small and micro Manufacturing Ventures (SMMVs) in Tanzania. The overriding research question guiding this study is 'do human capital of entrepreneurs and workers contribute to SMMV performance?' Human capital is examined in terms of entrepreneurs' years of education, training, experience, and need achievement (nAch). In addition, the study seeks to measure employee education, training and experience in the surveyed SMMVs and considers the extent to which these elements contribute to business performance. The resulting knowledge should help to enhance our understanding of the SMMV sector, and make an optimal contribution to the development of Tanzania.

The general form of the study can be represented as:

$$\text{SMMV performance} = f(\text{education, training, nAch, experience, physical capital})$$

It is hypothesised that performance of SMMVs is influenced by start-up capital, education, training, nAch, and experience of the entrepreneurs and workers. Prior to examining the model above, it was imperative to answer the first research question, “Is there a significant association between the SMMV performance and human capital?” Hence, the following proposition was formulated:

Proposition 1 (P₁): There is a significant association between human capital and SMMV performance. To investigate this association, the following hypotheses were developed for testing using chi-square and correlation analyses.

- There is a significant and positive correlation between entrepreneur nAch and jobs created.
- There is a significant and positive correlation between entrepreneur nAch and profit increase.
- There is a significant and positive correlation between entrepreneur nAch and sales.
- There is a significant and positive correlation between entrepreneur nAch and profit.
- There is a significant association between entrepreneur education and access to target market.
- There is a significant and positive correlation between entrepreneur education and number of business records kept.
- There is a significant and positive correlation between entrepreneur education and employee education.
- There is a significant and positive correlation between entrepreneur education and sales.
- There is a significant and positive correlation between entrepreneur education and jobs created.

- There is a significant and positive correlation between entrepreneur training and employee education.
- There is a significant and positive correlation between entrepreneur training and sales.
- There is a significant association between entrepreneur experience and access to target markets.
- There is a significant and positive correlation between employee experience and sales.
- There is a significant and positive correlation between employee experience and profit.
- There is a significant and positive correlation between employee education and sales.
- There is a significant and positive correlation between employee education and profit.
- There is a significant and positive correlation between employee training and sales, also profit.

4.2.1 Business performance

There is not a simple explanation for business performance, business success, or business competence (Harris *et al*, 1999:8). Performance of an enterprise can be viewed in terms of growth, productivity, sales, profit, reduction in costs, decrease in employee turnover and absenteeism, increase in product quality, and reduction of grievances. In broad terms, performance measures can be categorised as financial and non-financial competencies.

According to Shaw (1999:2), many UK and USA firms put much emphasis on the bottom line; hence, financial indicators are preferred to non-financial indicators. Table 3.5 (on page 123) summarises some performance dimensions and the corresponding types of measures that could be used in empirical studies.

Table 3.5: Types of performance measures

Performance dimensions	Types of measures
Competitiveness	Relative market share and position, sales growth, measure of customer base
Financial Performance	Profitability, liquidity, capital structure, market relations, etc.
Quality	Reliability, responsiveness, appearance, comfort, availability, access, competence, friendliness, etc.
Flexibility	Volume flexibility, specification and speed of delivery flexibility.
Resource utilisation	Productivity, efficiency, etc.
Innovation	Performance of the innovation process, performance of individual innovations, etc.

Source: Shaw (1999:2) 'A guide to performance measurement and non-financial indicators [online]'.

Firm performance can be defined differently for small and large firms. According to Olomi (1999), small firm performance can be defined in terms of business start up, survival for more than three years, stability, profitability, financial health and growth. In the following sub-sections a few selected performance measures for SMMEs are described.

4.2.1.1 Graduation of SMMEs

One can argue that graduation from micro to a large firm is a performance measure. However, it is rare to find businesses growing from micro to small to medium and then to large businesses. According to a study by Storey (1994:113), only 4% of the UK's small firms that start will provide 50% of employment over a ten-year period. A larger proportion ceases to trade, while a few may survive and remain small firms.

Data on the graduation rate of Tanzanian SMMEs is not available. However, horizontal growth is widespread - many entrepreneurs operate a number of enterprises at a time (Olomi, 2001). One reason for the rare upward mobility of SMMEs is that owner-managers may not have the capability, in terms of human capital, to grow and sustain the firm beyond certain levels.

In support of the above view, Whiteley (2000) argues that the key element in expansion is capabilities to meet the new challenges associated with growth. Business expansion may involve taking on more employees, moving to bigger premises, or borrowing more money.

Gray (1998:52) observes that the number of people self-employed in Britain has grown between 1979 and 1993 by 80%, due to the activities of small businesses. He further claims that small-scale enterprises' growth is linked to owner-managers' acquisition of experience, modern skills and practices. There are also structural effects and policies aimed at stimulating enterprises determine enterprises' growth.

While it is commonly agreed that small firms are characterised by turbulence, whereby few small firms grow from small to medium and large enterprises, and many fail. It can be concluded that if employment creation is the major source of enterprise graduation and a national objective of small firm policies, then small firm development policies should be selective. The focus should be on ventures that have high growth potential (Mahadea, 1995:52; Acs and Audretsch, 1992:52).

4.2.1.2 Productivity

Productivity is an important concept in economics. Economists consider it to be one of the main causes of economic growth. Productivity is another performance measure that is related to resource utilisation. According to Visser (1994:306), productivity is broadly defined as the ratio between goods and services produced in the national economy, in an

industry, or in an individual organisation on one hand, and the resources used to produce them on the other.

Productivity indicates the efficiency with which labour, capital, materials, and other inputs are combined and used to produce goods and services for the satisfaction of customer needs and wants. Therefore, productivity is conceptualised as an upward shift in the production function over time, as opposed to movement along the same production function. This upward shift of the production function shows more output is produced, with the same input or the same output produced by fewer units of input.

A simple functional form can be used to express a production function of a firm, like the Cobb-Douglas function. With this function, a dependent variable like gross output can be expressed as a function of labour (L), physical capital (K), raw material (M), and human capital (H). Value added can also be used as a dependent variable; value added is herewith referred to as output minus raw materials. Below is an algebraic expression of the Cobb-Douglas production function,

$$Q(t) = BK(t)^{\alpha} L(t)^{\beta} [H(t)M(t)]^{\gamma}$$

$$0 < \alpha < 1, 0 < \beta < 1, \text{ and } 0 < \gamma < 1$$

Where H represents stock of human capital, L and K the services of labour and capital inputs, and B, is exogenous technical inputs. α , β , and γ are coefficients. In order to focus on firm specific productivity growth, B is treated as constant.

There are several factors that influence productivity of firms in developing countries. However, the productivity of a firm, to a certain degree, reflects the productivity of its labour. Certainly the quality of management and the quality of physical capital or investment also contributes to productivity of the firm. The following is a description of other factors influencing productivity of manufacturing firms in developing countries.

Market structure, technology, and age of the firm are considered the major factors influencing productivity.

(i) Market structure

Most small manufacturing enterprises in developing countries are operating in closed economies or in economies that are in the process of transition towards opening up. Protecting manufacturing firms in developing countries tends to influence negatively the performance of these firms. It can be implied that liberalisation of the economy, export marketing, and competition drive inefficient producers to strive to eliminate waste, and adopt best practices through accumulated experiences (Tybout, 1998:42; Guelbiten and Taymaz, 2000:4). Greater transparency can foster competition, encourage modern technology, increase demand for skilled labour, and promote learning by doing (Miller and Upadhyay, 2000:25).

(ii) Technology

Discussing technology is very relevant for any analysis of productivity and national industrial strategy. New technology alone does not automatically ensure an increase in productivity. Factors of production can be employed wastefully, due to inefficiency. Thus, productivity is linked to output increases, due to increases in the quality of labour and other inputs.

Technology choice in developing countries is rare. According to Phillips (1979), meaningful technological choice is the monopoly of developed economies. As a result, discussion of technological innovations by developing countries has centred on transfer of technology and appropriate technology. Therefore, developing countries are slower in putting into practice new technology. In a study of Turkish manufacturing industries for the time period 1987 to 1997, Guelbiten and Taymaz (2000:4) observed that there is a larger productivity disparity between SMMEs and large-scale enterprises in developing countries. The exception is that small firms are more efficient in industries where cheap

labour and flexible production are the competitive advantage. Among other explanations, SMMEs are considered not to be exploiting economies of scale, utilising old technology, using low quality inputs, and spending less on research and development (R&D).

However, O'Sullivan *et al* (1998:273) argue that it is a misnomer to assume that technological innovation is the monopoly of rich countries - after all, innovations from developed countries are not universal in application. Technological designs in developed countries are in accordance with the factors available in those countries, and are not necessarily suitable for developing countries. Technological designs developed in industrialised countries need to be adapted to the context of developing countries. A study by Huria (2000) observes that adaptation and adoption of technology by developing countries is important. However, national human capital of developing countries must be developed to support the adaptation and adoption process.

(iii) Age of the firm

Small manufacturing firms in developing countries often enter the market with unskilled and inexperienced managers. Therefore, their efficiency level is lower relative to large firms in developed countries. Experimentation in the market allows some small firms to gain new experience, and it may assist them in raising their efficiency, surviving and growing. This implies that older small firms are more efficient than younger ones (Edmund, 1979; Guelbiten and Taymaz, 2000: 4).

For the purpose of this study, sales, profit, sales increase, profit increase, job creation, and access to markets, will be used to measure the impact of human capital on the performance of Tanzanian SMMVs, whilst access to bank loans, number of records kept, attending further training, recruitment of educated employees will be used to measure the impact of human capital on the conduct of business in SMMVs.

Considering an enterprise situation, not all jobs require higher level of education. For example, repetitive tasks demand necessary skills to master the operations. Innovative

tasks demand abilities that keep abreast with technology and continuous adaptation to change. Therefore, higher levels of education become important to those functions requiring adaptation. This study focuses on the education of owner-managers. Owner-managers can create a favorable working environment for putting into practice acquired skills and knowledge. A hired manager could also pursue private objectives that are different from that of the owner. The objectives of a manager as a trustee of the owner may deviate from sales, profit creation, and employment creation (Ehrlich *et al*, 1994: 1009). Therefore, human capital development of the entrepreneur and workers serve the purpose of promoting individual interest to earn more returns, expand, and improve the firm's performance.

To support the focus on owner-managers, Carrier (1999: 30) and Barcala *et al* (1999:335) observe that the decision-maker in SMMEs is, profoundly, the owner-manager. The entrepreneur decides whether to attend or not to attend a training program, put training into practice, and improve the work environment to suit the skills and knowledge available. However, the performance of small firms will depend not only on human capital of the entrepreneur, but also on employees. Hence, employees will also be included in the present study.

Empirical studies on SMME performance have used several performance indicators. There is not one unique set of performance measures to be used in particular. Performance indicators used in this study are:

- Sales,
- Profit,
- Sales increase,
- Profit increase,
- Access to target markets,
- Job creation,
- Productivity.

Also included are test variables related to conduct of business. These are:

- Recruitment practice,

- Keeping of business records,
- Access to finance from banks,
- Training of workers, and
- Owning of another business

Olson and Bokor (1995:36) claim that the use of multiple indicators in small business research is imperative, because small firm owners may have different goals. As such, only one indicator could provide a biased view. The selected variables are used due to the fact that they are prominent in SMME literature, and are easily measurable. The explanatory variables and their relationship with the SMMV performance are described below.

4.2.2. Need achievement

Individuals' behaviors are partly inherent and partly conditioned by environmental factors. Psychologists differ on the strength of hereditary endowment vis-à-vis the environment in influencing individuals' behavior towards performance (section 3.5.1 described some divergent views). While the entrepreneurs' personal attributes include nAch, locus of control, self-concept, introversion and extroversion, this study focuses on nAch only.

The term nAch refers to an inner urge or drive within an individual that motivates the behavior towards accomplishment. The choice is made due to the availability of a reliable and valid instrument for measuring the level of nAch. More important, the nAch level of individuals can be enhanced through appropriate nAch training (as described later in section 4.2.4). McClelland's (1961) seminal work has associated entrepreneurial success with individuals' level of nAch. Some individuals are high achievers and others are low achievers. Mehrabian (1968:494) states that "high achievers are individuals who have stronger motive to achieve relative to their motive to avoid failure, they are not easily satisfied with current achievements, and certainly strive to improve their performance. Low achievers have stronger motive to avoid failure relative to their motive to achieve".

Researchers have found a positive relationship between nAch of entrepreneurs and their performance in business in both developed and developing countries (McClelland, 1961; Begley and Boyd, 1987, Mahadea (1994:94).

In the context of Tanzanian SMMV entrepreneurs, it is reasonable to expect that high nAch will drive the entrepreneur towards better performance. But, what is the level of nAch of Tanzanian SMMV entrepreneurs, and how does nAch influence SMMV performance? To collect data on the nAch level of the surveyed Tanzania entrepreneurs, the Mehrabian scale of the tendency to achieve was used. The scale is designed to distinguish high achievers from low achievers (Mehrabian, 1968:493). Based on the existing literature and above-mentioned studies, the following proposition is postulated for testing.

Proposition 2 (P₂): Success in business is positively related to a high need for achievement (nAch). To study the relationship in P₂, the following hypotheses were formulated for testing using discriminant analyses:

- **H_{2.1}** - Entrepreneurs with higher nAch create more jobs than their counterparts with lower nAch levels.
- **H_{2.2}** - Entrepreneurs with higher nAch have more sales than their counterparts with lower nAch.
- **H_{2.3}** - Entrepreneurs with higher nAch earn greater profits than their counterparts with lower nAch.

4.2.3. Formal education

Despite several cases of school dropouts becoming successful entrepreneurs, the increasing complexity of the business environment indicates that education is an essential input to entrepreneurial performance. Evidence regarding the effects of education on enterprise performance is not conclusive. Most of the research was conducted in the USA or Europe. A few studies in the African context, as mentioned earlier (in section 3.6.2, page 97), have found that entrepreneur education is significantly associated with higher

profits, higher output, increasing rate of employment growth, and greater access to loan capital relative to uneducated counterparts.

Daniels and Mead (1998:63), Lin (1998), Hall and Fulshaw (1993), and Rutashobya (2001) report a significant and positive association between SMMEs run by educated entrepreneurs and profits of their enterprise.

Other researchers have found a significant and positive association between rate of increase in output and the level of education of employees in an enterprise (Jones, 2001:58; Johnes, 1993; Visser, 1994; Ehrlich *et al*, 1994; Felli and Harris, 1996; Gyan-Baffour, 1999).

Few other studies have related job creation to the competence of owner-managers. However, Storey (1994) and Gray (1998) have found a positive relationship between owner-manager education and job creation in their studies in the UK.

Entrepreneurs' education influences their access to loan capital. Education could assist an entrepreneur in obtaining funds from financial institutions, as they might be able to convince institutional lenders about the viability of business ideas through well-drawn business plans.

If Tanzanian SMMVs are to improve their performance in terms of sales, profit, job creation, and access to loan capital, then it is important to investigate the level of education of entrepreneurs. In this study, the level of education was measured in terms of years of schooling. SMMV entrepreneurs were asked to indicate their highest level of education, which was then converted into years. The following proposition was advanced.

Proposition 3 (P₃): Educated entrepreneurs perform better than their uneducated counterparts. To investigate the impact of entrepreneurs' education on the

performance of Tanzanian SMMVs, the following hypotheses were developed for testing.

- **H_{3.1}** – Entrepreneurs with a higher education level on average have more sales than those who have a lower education level.
- **H_{3.2}** – Entrepreneurs with a higher education level on average create more jobs than those who have a lower education level.

4.2.4 Training

Training, as an investment to increase the individuals' capability of performing activities, can take place in childhood, adolescence, and adulthood. In this study, the adulthood stage of training, that is, off-the-job and on-the-job training and how they improve capability of entrepreneurs and workers for enhanced business performance, will be looked into.

However, measuring training is complicated by many factors. First, different types of training serve different purposes. Training on safety measures, for instance, does not directly improve productivity. Secondly, the duration of training programs varies - some programs take only few hours, others days, weeks and months. Thirdly, sometimes training does not involve a cash transaction. For example, sometimes an experienced staff member instructs another on the maintenance of a machine. These factors complicate the measurement of accumulated stock of training, and investment in training.

McClelland (1965) observes that need for achievement (nAch) can be developed through a special “motivational training” program. On the basis of his empirical studies in the USA, India, and Mexico, McClelland (1965:8) argues that rather than solely emphasising creating opportunities, providing financial support, and creating a conducive environment, individuals should be trained to take advantage of the available opportunities.

He further observes a positive relationship between nAch training and performance of entrepreneurs in terms of the innovation, profit, sales, and creativity, of their firms. Other researchers also support these findings (Schultz, 1980:443; Boshoff and Boer, 1988:85; Mahadea, 1993:29; Mass *et al*, 1999).

In order to improve profits and sales of SMMV entrepreneurs in Tanzania, it is important to investigate the impact of the different types and duration of training on entrepreneurs and employees in the SMMV sector.

In a study of trained and untrained entrepreneurs in seven Indian districts, Saini (1996:167) found, with a 95% level of confidence, that growth of employment and sales are significantly higher in enterprises managed by trained entrepreneurs, relative to those managed by untrained entrepreneurs.

Although there are several ways of categorising training programs, like, off-the-job vis-à-vis on-the-job training, formal vis-à-vis informal training, long-term vis-à-vis short-term training. For this study the difference between off-the-job training, and on-the-job training were not considered. Off-the-job and on-the-job are likely to have the same impact on the business venture, and carrying out training within or outside the business could depend on availability of qualified trainers and resources.

To gather the required information on this aspect of training, SMMV entrepreneurs were asked to indicate the types of training in which they had participated for the period 1997 to 2001. Respondents were asked whether they have been exposed to off-the-job training, on-the-job training, long-term training, and the duration for each type. Also, they were asked about the kind of training they were exposed to.

In an attempt to compare between the impacts of on-job-training and off-the-job training on the performance of UK firms, Schonewille (1999) shows that on-the-job training appears to have a positive effect on output as opposed to off-the-job training. He found that the coefficient of correlation for off-the-job training was -0.35 , and the coefficient of

on-the-job training was 0.11 at the 5% significance level. Usually, on-the-job training is associated with learning the operation of new equipment, or the production process.

Buckley and Caple (1996:16) argue that on-the-job training has certain merits over off-the-job training. Training someone at the job location is likely to take less time, and it is flexible and can be fitted around the trainee. Also, training on-the-job is very close to real job conditions, making it easier to transfer what has been learned, and the overall cost of on-the-job training may be less than off-the-job training. Bruwer and Haydam (1996) claim that on-the-job training programs have significant impacts on enhancing the output of SMMVs. In view of the above literature, the following proposition was developed.

Proposition 4 (P₄): Entrepreneurs who have attended training perform better than those who have not. To examine the relationship between entrepreneur training and performance of Tanzanian SMMV, the following hypotheses were proposed for testing.

- **H_{4.1}** – Trained entrepreneurs have on average more sales than their untrained counterparts.
- **H_{4.2}** – Trained entrepreneurs on average earn greater profit than their untrained counterparts.
- **H_{4.3}** – Trained entrepreneurs on average create more jobs than those who have not attended training.

4.2.5 Experience

Experience, or learning by doing, is an important characteristic of successful small business owners. As described earlier in subsection 3.2.1.6 (page 80), people learn while attempting to solve a problem or during the process of performing a task. The philosophy is ‘Practice makes perfect’, there are different types of experience, not all of which might be relevant to business success. For this study, three types of experience are considered relevant. First is entrepreneurial experience, which refers to years of owning another business venture before establishing the current firm. Second is industrial experience, which is years of previous occupational experience in other firms producing the same

products, as does the current one. The third is managerial experience, which is years of previous experience in managerial practice before establishing the current business, regardless of industry.

According to Jennings *et al* (1994:75), “It appears entrepreneurs learn from hands-on experience, which is necessary in order to succeed, and having that learning reinforced by success makes a potent teacher”. Stuart and Abbeti (1990) report a positive relationship between an entrepreneur’s previous managerial experience and the firm’s performance. Other researchers have found that combined managerial and industrial experience has a significant effect on venture performance (Duchesneau and Gartner, 1990, Dyke *et al*, 1992:79).

While there seems to be a positive relationship between experience and performance, the question that arises in the Tanzanian SMMV context is what kind of experience do entrepreneurs there have, and what is the effect of this experience on enterprise performance? To answer these questions, SMMV entrepreneurs were asked to indicate their years of entrepreneurial, managerial, and industrial experience, as well as the experience of their workers in the current firm. Accordingly, the following proposition was postulated:

Proposition 5 (P₅): Entrepreneurs with prior occupational experience perform better than their inexperienced counterparts. The following hypothesis was formulated for testing the impact of entrepreneur experience on venture performance.

- **H₅** – The target market for entrepreneurs with prior occupational experience is broader than that of those without.

4.2.6 Other propositions and hypotheses

The significance of SMMV entrepreneurs that is an essential player in influencing the firm’s performance is not disputable. The entrepreneur has immense decision-making

power in an SMMV environment, consequently affecting the overall venture strategies (Man *et al*, 2002:130). However, it was not logical to overlook the contribution of labour in a firm, specifically employee education, training, and experience in the firm. To measure the education level of employees in the enterprise, SMMV entrepreneurs were asked to indicate the number of employees falling in each educational category. The education levels ranged from never went to school to doctoral degree. A standard duration of the education program was set in order to allow for the calculation of the average level of education of employees in the firm.

Considering the difficulties associated with measuring accumulation of training in the firm, SMMV entrepreneurs were asked to indicate the number of employees who have attended on-the-job training and off-the-job training for the period of 1997 to 2001. Similarly, SMMV entrepreneurs were asked to indicate the number of employees falling in different ranges of working experience in the current firm. The information on worker experience allowed for the calculation of averages of all employee occupational experience in the current firm. The theorisation above allows for the formulation of the following propositions.

Proposition 6 (P₆) - SMMVs with more experienced workers in the current firm perform better than those with less experienced workers. On the basis the 6th research question of this study and P₆, the following hypotheses were formulated for testing.

- **H_{6.1}** - Ventures with greater employee experience in the current firm have, on average, more sales than those with less.
- **H_{6.2}** - Ventures with greater employee experience in the current firm earn, on average, more profits than those with less.

Proposition 7 (P₇) - SMMVs with more educated employees perform better than enterprises with poorly educated employees. To answer the 7th research question of this study and examine P₇, the following hypotheses were developed for testing.

- **H_{7,1}** – Ventures with well-educated employees have greater sales-means than those with poorly educated employees.
- **H_{7,2}** – Ventures with well-educated employees earn greater average profit than those with less educated employees.

Proposition 8 (P₈) – SMMVs with trained employees perform better than those with less training. Related to P₈ are the following hypotheses.

- **H_{8,1}** – Ventures with trained employees have, on average, greater sales than those with untrained employees.
- **H_{8,2}** – Ventures with trained employees earn greater average profits than those with untrained employees.

The above hypotheses are bivariate in nature. To answer the ninth research question (Can the human capital predict SMMV performance?) (Section 1.4), an analysis using multiple regression analysis was necessary for the following hypothesis:

H₉ There is a functional relationship between SMMV performance and the human capital.

4.2.7 Subsidiary propositions

Although the main objective was to investigate the impact of human capital on SMMV performance, the following secondary propositions (SP) and hypotheses (SH) were also developed.

SP₁ Educated entrepreneurs have a more distinctive method of conducting business than uneducated ones. To explore SP₁, the following secondary hypotheses were developed for testing.

- **SH_{1,1}** – Entrepreneurs with more education are more likely to attend off-the-job training programs than less educated entrepreneurs.
- **SH_{1,2}** – Educated entrepreneurs are more likely to hire educated employees than their uneducated entrepreneurs.

- **SH_{1,3}** – Educated entrepreneurs keep on average more business records than uneducated entrepreneurs.

SP₂ - Entrepreneurs who have attended training have a more distinctive method for conduct of business than their counterparts who have not attended training. To examine SP₂, the following hypotheses were formulated.

- **SH_{2,1}** – Entrepreneurs who have attended training are more likely to own another business than are their counterparts who have not attended training.
- **SH_{2,2}** – Entrepreneurs who have attended training are more likely to keep more business records than their counterparts who have not attended training.

SP₃ Entrepreneurs with trained employees have a more distinctive method for conduct of business than those with untrained workers. To investigate the conduct of business in ventures with trained and untrained employees, the following hypotheses were postulated for testing.

- **SH_{3,1}** – SMMVs with trained employees have greater frequency of access to finance from banks than ventures with untrained employees.
- **SH_{3,2}** – SMMVs with trained employees have a larger mean number of records kept than ventures with untrained employees.

SP₄ - Entrepreneurs with educated employees have a more distinctive method for conduct of business than those with poorly educated workers. With regard to SP₄ the following hypotheses were formulated for testing.

- **SH₄** – SMMVs with educated employees keep more business records than those with untrained employees.
- **SH₅** The average number of jobs created by entrepreneurs in each group of activity is significantly different.
- **SH₆** The average number of jobs created by SMMVs in each zonal location is significantly different.

4.3 Research design

Research design provides a plan for collection and analysis of data in a manner that is relevant to the research objectives. It provides the population to be studied, the sample design, measurement variables, the information gathering technique, and the data analysis strategy. Research design should be consistent with the type of research. In good research design, the information gathered is expected to be accurate and consistent with the research hypotheses or questions being investigated. Appropriate choice of a research method depends on two main criteria: the objective of the study, and the type of research problem to be solved (Yin, 1989). This research is geared towards gaining insights into the impact human capital on the performance of Tanzanian Small and Micro Manufacturing Ventures.

Kothari (2000:3) identified several types of research: descriptive, exploratory, applied, fundamental, quantitative, qualitative, conceptual, empirical, one-time, longitudinal, field, and laboratory research. Exploratory, causal, descriptive, and analytical researches are the most common research designs in business. This classification tends to avoid all kinds of overlap in description (Aaker *et al*, 2001:72, Webb, 2002:19). These types are described below.

4.3.1 Exploratory research

Exploratory research is often conducted because a problem has not been clearly defined as yet, or its real scope is as yet unclear. It allows the researcher to familiarise himself/herself with the problem or concept to be studied, and perhaps to generate hypotheses to be tested. It is this initial research that produces directions for further research. Exploratory research may help to determine the best research design and data collection method, and sometimes it even concludes that the problem does not exist. Exploratory research can be conducted to test concepts before they are put in the marketplace (always a very costly endeavor). In concept testing, consumers are provided

with either a written concept or a prototype for a new, revised or repositioned product, service, or strategy.

Exploratory research can either be informal or formal. Informal research relies on secondary data, such as reviewing available literature and data, informal discussions with consumers, employees, management, or competitors. Formal research requires in-depth interviews, focus groups, projective methods, case studies, and pilot studies (Kothari, 2000:47).

4.3.1.1 Sources of data in exploratory research

Secondary data plays an important role in exploratory research. Data that has already been collected for other purposes, or from earlier works is referred to as secondary data. Secondary data may take any of the following three forms: documentary, survey, or a mixture of these two forms.

Secondary data may be published or unpublished. Published data are found in publications of central, state, and local government, publications of foreign governments or international bodies, technical and trade journals, books, magazines and newspapers, reports and publications from business and industry, reports by scholars and universities, and public records and statistics. Unpublished data may be found in diaries, letters, biographies, and trade associations (Leedy and Ormrod, 2001:158).

Although secondary data is easily accessible, unobtrusive, suitable for longitudinal studies, and less expensive to obtain than primary data, its use can be 'risky'. Secondary data has the following potential disadvantages: it may be out-dated; there may be variations of definitions; there may be differences in units of measurement; and it may not match the need of the study. Therefore, before using secondary data, researchers should evaluate the reliability, suitability, and adequacy of the data.

Apart from exploring secondary data, insights, ideas, and opinions can be collected from individuals with knowledge and experience of the problem. This qualitative research approach is very common in exploratory research. Because of the nature of the interaction between the researcher and the respondent, results from the informant survey may have low reliability. However, the technique is becoming popular and is very important for business and management researchers. Also, much masters and doctoral research work is conducted using this qualitative method (Kothari, 2000; Remenyi, 1996).

Case analysis is another useful method in exploratory research. The researcher in a case study collects data on individuals, or events, or programs for a certain period of time (Leedy and Ormrod, 2001:151). Van der Meer-Kooistra (cited by Evenhuis, 1996:9) describes case study analysis as “investigating an actual empirical phenomenon within the real context”; it involves detailed analysis of similar cases to the phenomenon under investigation.

4.3.2 Causal research

Causal research is used if the objective is to determine a cause and effect relationship between variables (Leedy and Ormrod, 2001:233). In order to determine causality, it is important to hold constant the variable that is assumed to cause the change in the other variable(s), and then to measure the changes in the other variable(s). This type of research can be very complex, and the researcher can never be completely certain that there are no other factors influencing the causal relationship, especially when dealing with people's attitudes and motivations.

In this study, causality will be investigated between human capital and performance of SMMVs. Multiple regression analyses will be carried out to investigate a functional relationship between human capital and sales/output. To carry out regression analyses, data to be used should reflect an interval or ratio scale, and should fall in a normal distribution (Leedy and Ormrod, 2001:263).

4.3.3 Descriptive research

Descriptive research provides data about the population or ‘universe’ being studied. It only describes the state of affairs as they exist in a particular situation and at a particular period of time, not what caused it. Therefore, descriptive research is used when the objective is to provide a systematic description that is as factual and accurate as possible. Some authors use the term *ex post facto* research for descriptive research (Kothari, 2000:3; Bright 1991:32).

Descriptive research provides the number of times something occurs, and lends itself to statistical calculations, such as determining the average number of occurrences. One of its major limitations is that it cannot help determine what causes a specific behaviour, motivation, or occurrence. In other words, it cannot establish a causal definition of a relationship between variables. In recognition of the weakness of descriptive research and the need to meet the research objectives stated earlier (in section 1.3), this study is a combination of descriptive and causal research. This is an analytical survey that uses inferential statistics to deal with problems of predicting and testing of hypotheses. In an analytical survey, numerical facts of life are translated into comprehensible units of meaning, using symbols and grammar (Leedy, 1989:174). The two most common types of data collection in analytical research design are observational and survey techniques. Surveys are a common approach in business and management studies (Remenyi, 1996:29), and are designed to capture a wide variety of data on various topics and subjects (Aaker *et al*, 2001:217).

In order to investigate the impact of human capital on SMMV performance, it is essential to understand the human capital from the perspective of the entrepreneur and workers in SMMVs. This may be considered as a combination of causal, descriptive, and analytical study, hence requiring a survey design for data collection. Before going any further, the following sub-section explains the sampling design for this study.

4.4 Sampling design

Sampling design provides a definite plan for obtaining a sample. In the following subsections, attention is given to population, the Sampling Unit (SU), the sample, the source list, and measurement. Each item is described below.

4.4.1 Target population

The target population (also called the ‘universe’ or the ‘supply’), encompasses the total collection of all items, units, cases, or elements about which research conclusions are to be made. In this study, the target population is all SMMVs in Tanzania. The elements or members of the population are referred to as units of analysis (Huysamen, 1994:34). With limited time and resources, the investigator may not be able to study the whole population. Such an exercise may be very expensive and time consuming. As a result, the best practice is sampling, where parts chosen from the universe are capable of supplying valid and reliable information for drawing conclusions about the entire population. As Stoker (1998) points out, a sample is used to obtain information in respect of a population.

It is difficult to establish a clear-cut demarcation between trained and untrained, educated and uneducated. The uneducated in this study include all entrepreneurs in SMMVs with an average of seven or fewer years of schooling, and those who have not attended any training between 1997 and 2001. The reason for setting seven years or fewer is the fact that seven years is equivalent to a primary school level. Most primary school leavers are unskilled and usually lack business knowledge after finishing their primary level education.

4.4.2 Sampling

Sampling is basically of two types: probability and non-probability sampling. Probability sampling can be used in descriptive and analytical research, while non-probability sampling is used in exploratory research (Kothari, 2000:49).

4.4.2.1 Probability sampling

In probability sampling (also called ‘random sampling’ or ‘chance sampling’), every item of the universe has an equal chance of being included in the sample. According to Young and Schmid (1994), there are four basic techniques in probability sampling:

- (i) Simple random sampling, in which every item in the universe has the same probability of being included in the sample;
- (ii) Stratified random sampling. If the composition of the population consists of layers of different types of units, it is possible to select a sample from sub-samples or subdivisions or strata of that population (Leedy, 1989:209). Stratified random sampling has the advantage of guaranteeing equal representation of each stratum, and helps in securing a more reliable sample (Barnett, 1974:108; Stoker, 1998; Leedy and Ormrod, 2001:215);
- (iii) Sampling by regular intervals. In this procedure, items are selected at regular intervals from a series or alphabetical order list or any arbitrary arrangement;
- (iv) Area sampling. In sampling of this kind, small areas are designed as sampling units. All members of the designated area are included in the sample.

4.4.2.2 Non-probability sampling

Non-probability sampling is called 'deliberate sampling'. Non-probability samples include convenience, judgment, and quota samples. In this procedure of sampling, the elements of the population do not have a known probability of being selected for the sample. The researcher subjectively selects the items that make a sample, so as to be a typical representative of the population. Because of the use of individual judgment, there is always the danger of bias in non-probability sampling. In order to meet the scientific requirements of this study, stratified random sampling was adopted.

4.4.3 Sample size

A sample is a smaller representation of the population. Studying a sample saves money and time, and enables measurement that is more accurate. Sampling, as a process, involves estimating the properties of the population from the sample. The process is called statistical induction or statistical inference. Young and Schmid (1994:326) identify the following criteria for good sampling: the sample must be of adequate size, and the sample must be designed in such a way as to be efficient. Kothari (2000:72) adds that a good sample must be viable, minimise bias, and the results of the sample study should be applicable to the universe with a reasonable level of confidence.

Tanzania, like many other developing countries, is faced with the problem of adequate statistics. This research was faced with the problem of getting a list of all Tanzanian SMMVs from which to draw a random sample. Government ministries, the Central Bureau of Statistics (CBS), and the Bank of Tanzania's statistics were unable to provide a register of all SMMVs in Tanzania. Below is a summary of the approach used to reach the sample.

The researcher, carrying an introductory letter from the University of Natal (see appendix 4.1, page 340), approached the Tanzanian MIT, which wrote another introductory letter to the Regional Trade Officer, Small Industry Development Organisation (SIDO), and

Tanzania Chamber of Commerce Industry and Agriculture (TCCIA) (see appendix 4.2, page 341). Subsequently, SIDO and TCCIA directors wrote other introductory letters (appendix 4.3 and 4.4 respectively, page 342 and 343) to their respective regional counterparts.

From the regional SIDO and TCCIA offices, it was possible to get a list of SMMVs in each particular region. As a result, from this list a proportional stratified random sampling was carried out. The 200 SMMVs were proportionately drawn from 18 distinct regions.

4.5 Variables and measurement

Variables can be measured in terms of nominal, ordinal, interval, or ratio scales. Statistical analyses require responses to questions to be on a numerical basis. Nominal scales are used for information that has no implied ranking (like the source of training material, the field of study, and previous occupational experience). Ordinal scales are used for data where ranking is necessary in terms of greater than or less than. Interval scales have equal units of measurement, and the zero point is arbitrarily set. A ratio scale is a measure in terms of equal interval, and has an absolute zero point of origin (Leedy and Ormrod, 2001:30).

Operationalisation of each variable in a study is imperative so as to meet the test of validity, reliability, and practicality. Validity refers to the extent to which a test measures what it actually wishes to measure; reliability refers to the extent to which measurement is free of variable error, i.e., accuracy; consistency, and practicality is concerned with economy, convenience, and interpretability (Kothari, 2000).

In investigating the influence of human capital on SMMV performance, the model developed previously (in section 3.4.1 page 90) is used to establish a functional relationship between the independent and dependent variables. The following subsections

describe the independent and dependent (performance) variables used for the purpose of this study.

4.5.1 Independent variables

The independent variables in this study are a selected set of human capital elements. Training, education, nAch, and experience acquired by entrepreneurs and workers in SMMVs were selected for measurement. These independent variables and the corresponding measurements are summarised in table 4.1 (page 146). Although health and migration are also important elements of human capital, these variables are excluded because of resource limitations. Moreover, health and migration were found to be complementary to education (Cornia, 1990:183; Sabot, 1979:105).

4.5.1.1 Education measurement

Measuring accumulation of human capital and differences in earnings using years of schooling is a very common practice (Becker and Chiswick, 1966:368). However, what matters in evaluating the accumulation of human capital is not only quantity of education, but quality as well. In cross-country studies, average wage bills and wage gaps are often used to measure the quality of education and training (Sabot 1997:157). Schultz (1981:63) argues that "... the real earnings of educated people ... are determined in the long run by normal wages, that is, what the labour market pays..."

In this study, respondents' years of schooling were used to measure accumulation of education. Related to the years of schooling, entrepreneurs were asked about who paid for their education. This study operationalises entrepreneur's level of education as: highest education level attained, measured in terms of number of years of study required to attain that education standard.

4.5.1.2 Training measurement

Measuring accumulation of training can be a complex task. On-job-training may be conducted hourly by peers, senior workers, or employers, whereas, off-the-job training may be conducted for longer periods. On-the-job training may not involve actual monetary exchange while off-the-job training may involve payments to the trainers. Thus, there is no commonly accepted measure of accumulated stock of training for all workers in an enterprise. In order to have a balance in these divergent practices, the number of employees who received training, and the duration of entrepreneur training were used in the measurement of human capital accumulation through training. Black and Lynch (1996:265) also used this approach, in their study on the impact of human capital on venture productivity in the United States.

4.5.1.3. Experience measurement

Skills and knowledge can be acquired and developed through experience. Such experience can come from observing others, a previous career in another organisation, or from working in the current firm. These are some of the major sources of skills and knowledge for a person. It is commonly acknowledged that entrepreneurial, functional, and industry experience can enhance business performance. To measure experience; SMMV entrepreneurs were asked to indicate their years of entrepreneurial, managerial, and industrial experience prior to establishment of the current business, as well as the experience of their workers in the current firm.

4.5.1.4. Need achievement measurement

Personality attributes include several variables, like locus of control, introversion/extroversion, self-esteem and need for achievement. Of these personal attributes, the research only used nAch. Literature shows that an individual's need achievement is related to business performance, and could be enhanced through appropriate training. The Mehrabian scale of achievement tendency was used for

measuring the need for achievement levels of the respondents. This instrument consists of a set of questions that is administered to male and female respondents. Twenty-six different questions were asked of male and female entrepreneurs, to measure their need achievement levels on a nine-point scale from +4 to – 4.

To compute the total scores for each of the surveyed SMMV owner managers, the scores of each question were added altogether (Mehrabian and Bank, 1975). A higher positive value indicates a greater nAch level, and the reverse is also true. According to these two authors (1975:2), the Mehrabian scale of achievement tendency appears to have a reliability coefficient of 0.70 and 0.60 for male and female scale respectively. The above scores make the instrument good enough to be used (in this study) for measuring the need achievement level of respondents. A summary of the measurement of the predictor variables is presented in table 4.1.

Table 4.1: Summary of the measurements of independent variables

Independent Variable	Measurement
Education	Years of schooling
Training	Number of trained workers Duration of training program(in months)
Experience	Years of previous work experience Years of experience in the current enterprise
Capital	Start-up capital (in Tzs)
Need for Achievement	Mehrabian Scale

4.5.2 Dependent variables

There are various measures of small business performance. Edmund (1979) identifies three measures: profitability, cash flow, and capital productivity. McMahon (2001:158) identifies two other variables for measuring performance: annual sales, and employment.

Shaw (1999:2) provides twenty-two types of performance measures (as described in section 3.5.0). Delmar (1997) asserts that employment, market share, sales, and assets can be used as indicators of performance. Therefore, there is no one set of performance measures to be used in any particular study.

It is commonly accepted that enterprise performance is associated with availability of knowledge, variety of skills, and talents. Bookkeeping, accounting, and other management skills are important. These capabilities and talents can be learned and developed through schooling, training, and experiential learning.

As earlier shown (in table 3.2, page 120) this study focuses on six performance indicators: sales, profit, sales increase, profit increase, job creation, productivity, and access to markets. Annual sales, annual profit, and employment creation data were used since they can be easily obtained. Each of these dependent variables was associated with the same set of human capital elements in order to measure the degree of association. However, it is important to have a precise definition of SMMV performance indicators.

4.5.2.1 Sales

Sales are often used as a measure of business performance. In measuring SMMV performance, entrepreneurs were asked to indicate their firms' annual sales for the period 1997 to 2001. However, many entrepreneurs are skeptical in responding to specific questions about their enterprise's performance. In this study, entrepreneurs were asked to indicate their annual and their average monthly sales for the period 1997 to 2001. To eliminate the effect of price changes, an appropriate deflator was used on annual sales figures before conducting any statistical analyses (Table 6.68 on page 250).

4.5.2.2 Profit

For some businesses and researchers, what matters most in explaining performance of a firm is bottom line i.e. 'profit'. However, profit figures for SMMVs are not easy to

obtain. Partly, many SMMV entrepreneurs do not keep proper accounting records, rely heavily on memory recall, and tend not to comply fully with Income Tax laws. SMMV entrepreneurs are usually not willing to disclose information related to profitability, and researchers are feared to be representatives of the Income Tax Department.

Despite the difficulties perceived, this study attempts to investigate SMMV profit levels, due to the relevance of the measure in the process of business expansion. In measuring profit in SMMVs, entrepreneurs were asked to indicate annual income, before tax, for the period 1997 to 2001. To allow for verification of profit information given and estimation of profit figures, entrepreneurs were asked to indicate the average monthly income before tax for the period 1997 to 2001. Likewise, average monthly income before tax was multiplied by twelve to estimate respective annual profits, and then deflated to eliminate price change effect (See table 6.68, page 250).

4.5.2.3 Job creation

Job creation is one of the major roles of SMMVs in most economies. In order to measure job creation, SMMV entrepreneurs were asked to indicate the number of full-time employees who were present in the firm for the period 1997 to 2001. Job creation was calculated by subtracting the number of employees for the year with highest value from the number of employees for the year with lowest value. Jobs created were computed using the mathematical expression below.

$$\text{Jobs created} = Y_H - Y_L$$

Where: Y_H = Number for the year with highest value

Y_L = Number for year with lowest value

4.5.2.4 Increase in sales, and profit

With the availability of data on sales and profit for the period 1997 to 2001, respective increases were calculated. Sales increase was calculated as the highest year sales minus

the lowest sales in for the years 1997, 1998, 1999, 2000, and 2001. Likewise, profit increase was calculated as the difference in income before tax for the highest profit year minus the lowest year sales for 1997 to 2001. Sales increase and profit was computed using the mathematical expression below.

$$\text{Increase} = Y_H - Y_L$$

Where: Y_H = Sales/profit for the year with highest value

Y_L = Sales/profit for year with lowest value

The actual year for which jobs created, sales increase, and profit increase were calculated is 1997, 1998, 1999, 2000, and 2001.

4.6 Data gathering

There are several methods for gathering primary data. For descriptive and analytical studies, the survey method is very common. The survey method falls into three categories: observations, questionnaires, and interviews. Each of these methods has its associated merits and demerits in application, as discussed below.

4.6.1 Observation method

The observation method involves direct examination of the behavior of people by watching, recording, and then describing the phenomena being studied. Observations are feasible if the subjects cannot be interviewed, cannot complete the questionnaire, or when the respondent deliberately keeps silent. The major advantage of this method is that data is recorded first hand and directly as the behavior occurs in its natural setting, unlike with questionnaires and interviews, where the respondent is asked about the behavior (Huysamen, 1994:140). However, the usefulness of this approach in primary data collection is limited: respondents may behave differently in the presence of an observer – the Hawthorne effect; and it is expensive, time consuming, and restrictive in application. Hence, it is not suitable for this study.

4.6.2 Survey questionnaires

The questionnaire technique can take two forms: mail questionnaires and e-questionnaires. In the mail survey, questionnaires are mailed to concerned parties with a request to answer the questions and return the questionnaire by post or fax. In e-questionnaires, questions are delivered through electronic mail. Mail surveys require no third party to come between the respondent and the researcher, reducing the effect of the interviewer as a source of error. Using survey questionnaires is advantageous in that it requires a small number of support staff, it is possible to cover a wider geographical area, and respondents have the opportunity to complete the questionnaire in their own time and at their own pace (Webb, 2002:76).

Nachmias and Nachmias (1981:180) observe that mail surveys have the potential disadvantages of requiring simple questions, not allowing further probing, and not allowing the researcher control of who fills-in the questionnaire. The absence of mailing lists, potential reluctance of respondents to respond, poor mailing services, and the high level of illiteracy in Tanzania were some limitations in using mail surveys or an e-mail survey. In the light of these disadvantages, mail questionnaires were not used for collecting data. The use of personal interviews aided by structured questionnaires was considered more appropriate for this study.

4.6.3. Interview

This method can be administered by using either the personal interview or the telephone interview. Interviews have the advantage of having greater flexibility, allowing control of the interview situation, guaranteeing a high response rate, and allowing the researcher to gather supplementary information.

A personal interview is a face-to-face communication, where the interviewer asks questions designed to answer the research hypotheses. Moreover, the desirability of a high response rate favors the personal interview. In the process of data gathering, the researcher visited the respondents at their place of work, and used a structured interview

schedule. The wording and order of questions was fixed and identical for every respondent. The use of telephone interviews for this study was not considered, because of the low level of telephone ownership and poor communication in many parts of Tanzania.

However, interviews are associated with certain shortcomings that could jeopardize their value. Firstly, the personal interview involves relatively higher costs in terms of training of interviewers, preparation of the schedules, and traveling costs to reach the respondents. Secondly, since the personal interview does not guarantee the anonymity of the respondent, the interviewee could be unwilling to provide answers to questions that are sensitive and highly emotional. Thirdly, the interviewee may suffer from faulty perception and faulty memory. Individuals are highly selective with regard to the choice of what to remember or to retain.

Fourthly, this method involves social interaction, in which other elements like gestures, laughter, intonation, penetrating looks, and rate of speech may intervene to provide meanings over and above the verbal conversation (Leedy, 1981:75). Such intervening elements may attract unwarranted interpretations, guesses, and impressions into the data. Hence, the personal interview has the potential for bias. This could be a limitation in this study. However, to minimise possible bias, the questionnaire was carefully pilot-tested before administering it to the surveyed entrepreneurs engaged in SMMVs. To summarise, table 4.2 (page 155) provides a comparison of Internet, personal, telephone, and mail survey (Forest, 1999:136).

4.7 Development of the research instrument

To minimise any bias, the questionnaire was developed both in Kiswahili and English, two official languages in Tanzania. Independent translators converted the questionnaire to and from English and Kiswahili to maintain consistency of the meaning. Questions included in the questionnaire were generated from a variety of sources. The following were the major sources: Robinson and Robinson, 1999; Maliyamkono *et al*, 1982; Boverie *et al*, 1995; Nickols, 2000; and Todesco, 1997. Also, the following were referred

to: Beveridge and Oberschall, 1979; Ehrlich *et al*, 1994; Harris *et al*, 1999; Shaw, 1999; and McMahon; 2001.

Table 4.2: Comparative attributes of internet, personal, telephone and mail survey

Attributes	Internet survey	Personal interviews	Telephone interview	Mail survey
Cost	Very low	Very high	Medium	Low
Speed of turnaround	Fast	Instant	Instant	Slow
Response rate	High	Very high	Medium	Low
Accessibility	Few	All	Moderate	Many
Geographic reach	Very high	Very low	Medium	High
Access to respondents	Low	Varies	Medium	Very high
Time taken	Fast	Long	Medium	Long

Source: Forest (1999:136)

The SMMV questionnaire collected information concerning need achievement level, education, training, and experience of employees in the enterprise. Information was collected on the owner-managers' experience prior to establishing the enterprise, experience within the enterprise, and also average tenure of workers in the enterprise. Also, information was collected on training and education of owner managers and other employees in the enterprise between 1997 and 2001, and problems faced by entrepreneurs in operating their business.

To evaluate the entrepreneur's nAch level, the Mehrabian scale of achieving tendency was used. As mentioned earlier, this instrument measures nAch using a nine-point Likert-type scale.

To identify the location of the enterprise, sources of finance, legal status of the business, and the manufacturing activity to which the business belongs, questions were formulated in a nominal scale. In total, the questionnaire consisted of 30 questions that were in a nominal scale; another 60 questions in the ordinal scale, and the remaining 21 questions were in a ratio scale.

Questions on enterprise performance focused on sales, profit, access to markets, and number of employees for the period between 1997 and 2001. The questionnaire collected information concerning employment in the enterprise at the time of survey, at the start of the business, and for the period of 1997 and 2001. Questions on the conduct of business focused on access to finance from banks, number of business records kept, and employee education.

According to Bright (1991:51), there are two types of questions: forced response questions, and open-ended questions. Forced response questions are also termed closed questions, where the respondents are asked to select one statement that closely represents their views from two or more alternatives. Questions were set using three types of forced response: in some questions, items are checked, in some items are rated, and in other items are ranked. For open-ended questions, the respondent constructs the answer using his/her own words. Steyaert and Bouwen (1997:56) associate open-ended questions with story-telling interviews that allow interviewees to frame their own answers and experiences, and that could guarantee discovery of new things.

4.7.1 Pilot study

Prior to conducting the actual survey (during August 2002), a pilot study was conducted. This stage involved interviewing a total of 20 SMMV entrepreneurs in the Dar es Salaam and Iringa regions. Through this pilot study, and consultations with experts in the field of study the research instrument was pre-tested. The pre-testing involved implementation of the draft questionnaire on a small scale. The pilot study ensured that questionnaires to be administered were free from difficulty, confusion, or ambiguities, that is, phrasing and interpretation of the questions were tested to ensure the data collection instrument had a reliable base from which to draw conclusions.

A pilot study allows the researcher to assess questionnaire clarity, comprehensiveness, and acceptability (Rea and Parker, 1997:28; Saunders *et al*, 1997:269). This pre-test stage

revealed that about 45 minutes were required to administer one questionnaire (other things remaining the same).

4.9 Data analyses

The selection of statistical approach to be used is closely related to the objectives of the research and the measurement scale of the data. According to Leedy and Ormrod (2001:263), parametric statistical analysis is appropriate for normally distributed data that are in interval or ratio scales, and non-parametric tests are appropriate for the data that are not normally distributed, and are ordinal or nominal. As mentioned earlier (in section 4.7.1), the developed questionnaire contained ratio, ordinal, and nominal scales. As a result of this, the use of both parametric and non-parametric statistics was appropriate.

Upon completion of data collection, the completed questionnaires were edited, coded, and then captured onto computer. In this study, the Statistical Package for the Social Sciences (SPSS) was used for data analyses. In support of the use of SPSS, Currall (1991:4) asserts that SPSS has a lot of strength in survey data, as it can handle a range of univariate and multivariate techniques. The following is a description of the statistical tools used in this study.

4.9.1 Non-parametric tests

Non-parametric tests require data to be categorical (nominal or ordinal) or not normally distributed. SPSS's Shapiro-Wilk test was used to determine whether the test variables are normally distributed. Field (2000:51) argues that Shapiro-Wilk test is more accurate than the Kolmogorov-Smirnov test. Normality testing helped to determine which statistical technique was appropriate for testing of hypotheses. Usually, a significant value (whose p-value is less than 0.05) indicates a particular variable is significantly different from a normal distribution. In the case of data being different from a normal distribution and categorical (i.e. nominal or ordinal), non-parametric tests are appropriate

(Foster, 1998:7; Bryman and Cramer, 1999:116; Brace *et al*, 2000:81; Field, 2000:59; Lind *et al*, 2002:549).

In effect, some of the data collected was categorical and different from a normal distribution. For such data, non-parametric tests, such as the chi-square and Mann-Whitney U-test, were appropriate.

4.9.1.1 Chi-square test (X^2 -test)

The Chi-square (X^2 -test) was used to investigate associations among two test variables. The test was performed using the cross tabulation program of SPSS to determine if there was a statistically significant dependence between any two variables in the study.

The decision rule for the Chi-square test is: if the calculated chi-square value is greater than the table value at a certain level of significance for a given degree of freedom, the null hypothesis is rejected (Kothari, 2000:281). Put in a different way, if the p-value is less than 0.05, then the null hypothesis is rejected at the 5% significance level, thus making the test variables related or dependent at the 5% level of significance (Field, 2000:65). This study used the second approach. The Chi-square test was used in this study as an initial step for exploring propositions P_1 (page 121), SP_1 (page 137), and SP_2 (page 138).

4.9.1.2 Mann-Whitney U-test

The Mann-Whitney U-test investigates differences of rank means between two unrelated samples. In applying the Mann-Whitney U-test, no assumption is made regarding the shape of the population (Kothari: 2000:343; Lind *et al* 2002:549). According to Field (2000:49), the Mann-Whitney test is used for testing differences between means where there are two conditions and different subjects have been used in each condition. The decision rule for the Mann-Whitney U-test is the rejection of the null hypothesis if the p-

value is less than 0.05. The Mann-Whitney was used to test hypotheses (page 121), P_5 (page 135), SP_1 (page 137), SP_2 (page 138), and SP_3 (page 138).

4.9.2 Parametric tests

Parametric tests include correlation analysis, the t-test, the F-test, regression analysis, discriminant analysis, and ANOVA. These tests were appropriate for non-categorical data (these are in a form of interval and ratio data), with the assumption that the data is normally distributed.

4.9.2.1 Correlation analysis

The Chi-square analysis has certain limitations, in the sense that it determines if there is a statistically significant dependence or independence between any two variables. Williams (2003:143) argues that not all bivariate analyses report a contingency table and significance level. Since the aim of the study is to establish whether a functional relationship exists between a dependent variable and an independent variable, it was appropriate to use a correlation analysis as well.

The correlation coefficient is a useful measure of the strength and direction of association between two variables (Sharp and Howard, 1996:117; Bryman and Cramer, 1999:176). By reporting the strength and direction of associations, correlation analysis is considered to be more powerful than a non-parametric chi-square test (Metcalf, 1996:142).

Two often-used techniques for determining the degree of correlation between two variables are Spearman's coefficient and Pearson's coefficient of correlation. Spearman's coefficient is mainly used in cases of ordinal data, where ranks are given to different values. It is also a non-parametric technique. Pearson's correlation coefficient 'r' requires the data to be in an interval or ratio scale (Field, 2000:87; Bryman and Cramer, 1999:176).

Pearson's ' r '-value can range between -1.00 to 1.00 . A correlation of 1.00 signifies a perfect positive relationship, while a -1.00 shows a perfect negative relationship. The zero value of ' r ' indicates that there is no association between the two variables. However, Young (1994:316) cautions that the size of ' r ' is not the only consideration in the interpretation of the coefficient of correlation. Other correlation coefficients derived from the same kind of data should be considered as well. Further, correlation does not necessarily imply causation between the variables (Bobko, 1995:23; Young 1994:317).

In this study, the correlation analysis was initially used to investigate proposition P_1 (page 121), and H_9 (page 137). In testing hypothesis H_9 , the correlation analysis was used to test the relationship amongst the selected independent variables of a multiple regression model.

4.9.2.2 T-test for equality of means

The t-test for equality of means includes Levene's test for equality of variances. The Levene's test allows t-tests to be carried out even if assumption for equal variances is violated. The tests were used to compare performance means for SMMVs grouped into two independent samples of high and low nAch level, more and less educated, more and less trained, and more and less experienced. The technique was also used to compare the influence of employee and entrepreneur human capital development.

The decision rule is that a low significance value for the t-test, i.e. less than 0.05 indicates that there is a significant difference between the two group means (Field, 2002:239). The opposite is also true. In this study, t-tests for equality of means were used to investigate propositions P_3 (page 131), P_4 (page 134), (page 135), P_6 (page 136), P_7 (page 136), SP_1 (page 137), and SP_4 (page 138). Using a slightly different approach, t-tests were used to investigate the significance of coefficients of individual independent variables while fitting a regression model.

4.9.2.3 Multiple regression analyses

As SMMV performance is influenced by various human capital elements, a bivariate analysis was deemed not sufficient. Thus, the use of multiple regression analyses was considered appropriate for testing hypothesis H₉ (page 137).

In this study, output (proxied by sales) was presumed to be a function of physical capital and a set of human capital variables. For better understanding of the contributions of each variable, a backward elimination approach was used, in which physical capital, entrepreneur nAch, entrepreneur education, entrepreneur experience, entrepreneur training, employee education, employee training, and employee experience were initially entered into the model. One weak and insignificant predictor variable after another was removed, until all the remaining variables were found to have a significant contribution to the model. The model is expected to be of the general form:

$$Y = B_0 + B_1(\text{entrepreneur nAch}) + B_2(\text{entrepreneur education}) + B_3(\text{entrepreneur training}) + B_4(\text{entrepreneur experience}) + B_5(\text{employee education}) + B_6(\text{employee training}) + B_7(\text{employee experience}) + B_8(\text{physical capital}) + E$$

Where,

Y = dependent variable (sales/output)

B₀ = constant

B₁, B₂... B₈ = coefficients, and

E = Error term. It is assumed that coefficients of all the independent variables are positive.

4.9.2.4 Discriminant analysis

Discriminant analysis was used to test the equality of performance means when the sample is grouped into more than two independent samples. This approach was used to examine proposition P₂ (page 130).

4.9.2.5 One-Way Analysis of Variance (ANOVA)

Likewise, a one-way Analysis of Variance (ANOVA) that included the Tukey's test was used when the sample was grouped into more than two independent samples. The technique was used to test H₉ (page 137), SH₅ (page 138), and SH₆ (page 138). Table 4.3 presents a summary of the research approach for this study.

4.10 Validity and reliability of the measurement instrument

Researchers are often threatened with negative instances that can undermine their study. The English philosopher and politician Sir Francis Bacon (cited in Brenner, 1993) urges that to neglect negative instances is to be unreasonable, and that researchers should not turn a blind eye to those instances.

Table 4.3: Summary of the research approach used

Universe	Entrepreneurs in Small and Micro Manufacturing Ventures (SMMVs) with number of employees between 1 and 49
Data Collection	Personal interviews with entrepreneurs
Sampling procedure	Stratified proportion random sampling of entrepreneurs in 18 regions of Tanzania
Sample size	200 entrepreneurs
Level of confidence	95%
Date of fieldwork	Data was collected from September 2002 to December 2002
Geographical scope	Tanzania
Data analysis strategy	Reliability test, normality test, X ² -test, t-test, F-test, Correlation analysis, multiple regression analysis, Mann-Whitney U-test, Discriminant analysis, and Analysis of variances (ANOVA).

To overcome problems that stem from a study relying on a single theory, a single method, a single set of data, and a single investigator, triangulation is used. According to Bright (1991:76), the purpose of triangulation is to check internal consistency, reliability, and validity. To enhance quality of data research, assistants were used in 8 regions, while in other regions SIDO officials acted only as guides to the researcher. Triangulation (or multiple strategy approach) was used in data collection. Such an approach helps to minimise errors and maximise the evidence for the results of the study (Locke *et al*, 2000; Walker, 1998; Silverman, 1985). Remenyi (1998:116) strongly emphasises that “Triangulation should be a standard practice in Masters and Ph.D. degree projects”. The two following sections discuss the tests for reliability and validity.

4.10.1 Validity

A measurement instrument requires a validity test to be considered reliable. Validity refers to the extent to which the measurement instrument measures what it is supposed to measure (Heiman, 2001:62). There are a number of types of validity tests, such as construct validity, criterion validity, face validity, internal validity, and external validity.

4.10.1.1 Construct validity

Construct validity refers to the degree to which the instrument measures the intended construct, instead of an unintended construct (Welman and Kruger, 2000:139). To ensure construct validity, more than one question was used to measure the same construct. This practice is called Triangulation (Remenyi; 1998:116). For example respondents were asked “What is your highest level of education?” and “For how many years have you been attending your formal education?”. These questions were measuring the same thing, the respondents’ level of education. When the two were correlated, the results showed a positive and significant correlation coefficient ($r = 0.925$ at 0.01 level).

4.10.1.2 Criterion validity

The second aspect of validity assessment is criterion validity, also called 'predictive validity', which is used if the purpose is to measure to predictive power to events or behavior that is external to the instrument itself. Correspondence between the test and the criterion can be estimated by the size of the correlation (Carmines and Zeller; 1994:10). Time did not allow for a longitudinal study to be carried out for testing predictive validity of the model using correlation analysis.

4.10.1.3 Face validity

Face validity refers to a subjective judgment of whether the measure is appropriate. According to Welman and Kruger (2000: 146), face validity is the evidence provided by other experts or experienced researchers that the instrument apperar to represent all aspects to be measured.

To ensure face validity, the questionnaire for this study was checked and frequently reviewed by my supervisor, and by Mr. Godfrey Mkocha of the MIT- Tanzania, Prof. Francis Matambalya of the University of Dar es Salaam (UDSM), and Dr. Dominicus Kasilo of Mzumbe University. Mr. Aidan Semaganga of Tumaini University, as well as peer students reviewed the questionnaire. After receiving oral and written comments from various people, the questionnaire was refined for use in the survey. Furthermore, the questionnaire was first pre-tested on a small sample of 20 firms, and fine-tuned to further establish its face validity, before it was administered to the surveyed entrepreneurs.

4.10.1.4 External validity

External validity refers to the extent to which the findings of the study can be generalised or applied to other situations. An attempt was made to draw a sample that is representative of Tanzanian Small and Micro Manufacturing Ventures (SMMVs). Although the results of this study could not be generalised to all Tanzanian SMMVs, it

could be argued that the findings have some validity in manufacturing ventures in Tanzania. To be more objective, replication of this study is necessary. This could, in future, involve other enterprises and countries at a similar level of development. All these could strengthen the external validity of the present study, if the results do not differ significantly from the current ones.

4.10.2 Reliability test

Reliability refers to the extent to which an experiment or a measuring procedure yields the same results on repeated trials. It reflects the precision, accuracy, and stability of a measurement instrument over time (Lewis-Beck, 1994:3). There are several alternative procedures in reliability testing. The first is a ‘test re-test approach’, where the same test is administered to the same respondents at two different times. The second is a ‘split-half procedure’, where the test is given to the respondents and afterwards items are divided into two halves by splitting the odd from the even items. The two halves are then correlated.

The test re-test approach seems logical, given the definitional point of view of reliability (Bobko, 1995:72). The re-test approach has the disadvantage of previous experience influencing responses in the second testing (Carmines and Zelller; 1994:40). Also, a re-test approach could pose time and money constraints to the researcher.

Alternatively, the internal consistency (or Cronbach’s coefficient alpha approach) is appropriate for this study. This internal consistency method for estimating reliability does not require either splitting or repeating of items (Lewis-Beck, 1994:33). Since multiple items were used to measure human capital and performance, coefficient alpha is recommended for estimating reliability of the instrument, rather than the re-test method or split-halves approach, because Cronbach’s alpha:

- Indicates the measurement instrument’s homogeneity,
- Is easy to compute, and

- Is a good estimate of the expected correlation between one test and a hypothetical other containing the same number of items (Sekaran, 1992:174; Carmines and Zeller, 1994:38, 47).

Table 4.4 indicates the estimated Cronbach alpha for the instruments used in this study. The coefficients were estimated using SPSS reliability function. Test variables with reliability coefficients greater than or equal to 0.5 were included for data analyses, while those with coefficients less than 0.5 were excluded. The Cronbach alpha coefficient for included variables ranged between 50% and 66%. Therefore, the findings and conclusions of this study should be read in light of a relatively modest reliability coefficient.

Table 4.4: Reliabilities of the instrument

Description	Measure	Cronbach Alpha (%)
Mehrabian measure (Female)	Need achievement level	66
Mehrabian measure (Male)	Need achievement level	58
Business performance	Performance	50
Training	Training	66
Perceived SMMV constraints	Constraints	57

4.11 Summary

This chapter covered four main issues: research hypotheses, sampling design, measurement variables, data collection, and data analyses strategy. The research hypotheses were developed on the basis of the association between performance measures of SMMVs and a selected set of human capital elements; such as education, training, personality, and experience of the owner and workers. Performance measures in the form of profit, sales, and employment creation were identified as dependent variables, and the human capital as an explanatory variable.

This chapter proposes the use of descriptive, causal, and analytical approaches to investigate the impact of human capital on the performance of Tanzanian SMMVs. Relevant data was gathered by interviewing a random sample of 200 entrepreneurs, randomly drawn from a list provided by the MIT, or its agencies, and with aid of questionnaires. The last section of this chapter explains the data analyses strategy, and the plan for validity and reliability. Apart from the usual financial and time constraints faced by researchers, lack of sufficient, reliable, and up-to-date data was the main problem faced in this study. The following two chapters will describe and report the data analyses and findings.

CHAPTER 5

PROFILE OF TANZANIAN SMMVs

5.1 Introduction

This chapter analyses the characteristics of the surveyed Small and Micro-Manufacturing Ventures (SMMVs), entrepreneurs, and workers in their respective firms. SPSS was used for statistical analyses, including frequency distributions, cross tabulations, and graphs.

This chapter consists of seven main sections. The sections are structured as follows; Section 5.2 covers the characteristics of the surveyed ventures in terms of location, age, size, activities, mode of establishment, and source of funds for business start-up. Section 5.3 considers the characteristics of the surveyed entrepreneurs in terms of age, education, training and prior experience. Section 5.4 discusses the characteristics of employees in the surveyed ventures in terms of training and education. Section 5.5 provides descriptive statistics for some performance variables, like number of business records, sales increase, profit increase, jobs created, and target market. Section 5.6 looks at the cross-tabulations for selected pairs. The cross-tabulations include number of employees by activity, jobs created by location, jobs created by age of the enterprise, entrepreneur education by location, entrepreneur education by gender, and entrepreneur age by gender. Lastly is a conclusion

5.2 Characteristics of the surveyed ventures

The findings of the study are initially presented in the form of frequency tables, bar graphs, contingency tables, and cluster-bar graphs. These may assist Tanzanian policy makers and SMMV support service providers in better understanding the SMMV sector and in formulating effective support measures that enhance the development of this sector. The following section (5.2.1–5.2.3) explains the sample structure in terms of characteristics of ventures, entrepreneurs, and employees.

5.2.1 Zonal distribution

Table 5.1 below shows the distribution of the surveyed (200) firms across 5 zones; 28.5% were located in the Eastern zone, 21% in the Central, 19.5% in the Southern, 16% in the Northern, and 15% in the Lake zone. There was a slight concentration of enterprises in the Eastern zone, which includes Dar es Salaam, the capital of Tanzania.

Table 5.1: Zonal distribution of enterprises by gender

Zones	Men	Women	Total	Percentage
Southern	33	6	39	19.5
Lake	24	6	30	15.0
Northern	25	7	32	16.0
Eastern	51	6	57	28.5
Central	40	2	42	21.0
Total	173	27	200	100.0

5.2.2 Urban/Rural distribution

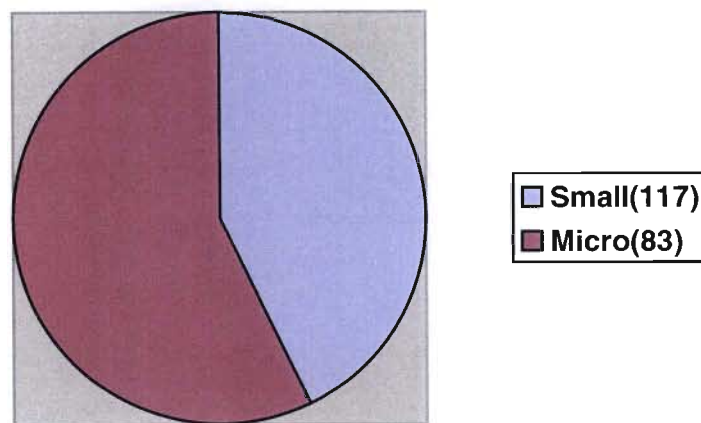
Like most developing countries, Tanzania displays elements of a dualistic economy, in which developed and underdeveloped structures co-exist (Thirlwall, 1999:176). In Tanzania the urban areas have economic and social characteristics that are more developed than in the rural areas. The Tanzanian urban areas provide an attractive environment for SMMVs. Electricity, running water, telephones, skilled labour, raw materials, financial institutions, good roads, and other basic infrastructure services are available in most of the cities, municipalities, and towns, whereas those are lacking in rural areas. Comparatively, in developed countries like the UK, there are not as many differences between rural and urban settings (Townroe and Mallalieu, 1989:17).

Of the 200 surveyed enterprises, 142 were located in urban and 58 in rural areas. However, the Tanzanian 1991 Informal Sector (NISS) depicted a different picture, the majority of Tanzanian informal enterprises were found to be based in rural areas.

5.2.3 Size of the enterprises

The Tanzanian SME Development Policy defined enterprises in terms of number of employees and capital (URT, 2003:5). However, for the purposes of this study, SMMVs were defined using only the number of employee criterion, as mentioned earlier (section 4.1.1, page 116). Of the 200 manufacturing ventures surveyed, 41.5% were micro, and 58.5% were small ventures (Figure 5.1). A micro enterprise is defined as one having between 1 and 4 employees, and a small firm is regarded as one with between 5 and 49 employees.

Figure 5.1: Distribution of Enterprises by Size



Key:

Small enterprises = 5 to 49 employees

Micro enterprises = 1 to 4 employees

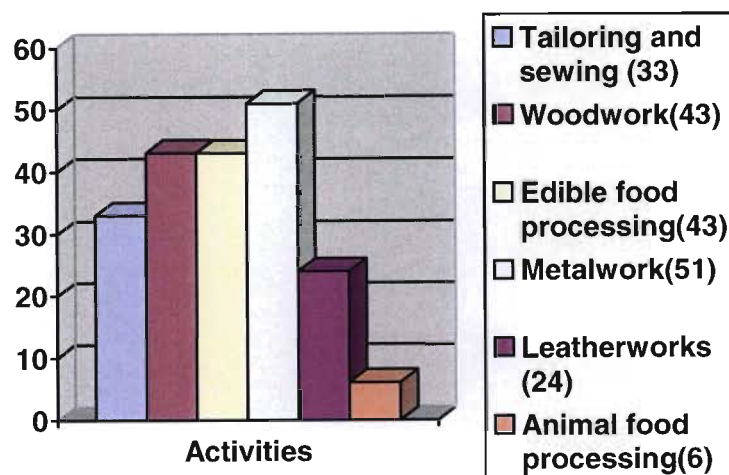
N = 200

5.2.4 Distribution of enterprises by activities

Figure 5.2 shows the distribution of the surveyed enterprises by activities: 51 were in metalwork, 43 in woodworking, 43 in edible food processing, 33 in tailoring and sewing, 24 in leatherwork, and only 6 in animal food processing.

Figure 5.2: Distribution of enterprises by activities

Enterprises



5.2.5 Distribution of enterprises by mode of establishment

Over four fifths of the surveyed firms were founded by the present entrepreneurs, while 4.5% were bought from previous businesspersons and 7.5% were taken over from close relatives (Table 5.2 page 172). It was interesting to note that of the enterprises started by present owners, 83 entrepreneurs were in the 35 to 44 years of age category at the time of the interview.

Table 5.2: Distribution of enterprises by mode of establishment

Mode of establishment	Frequency	Percent	Cumulative percent
Started by present owners	176	88.0	88.0
Bought from others	9	4.5	92.5
Taken over from close relatives	15	7.5	100.0
Total	200	100.0	

5.2.6 Distribution of enterprises by source of capital for business start-up

Availability of finance is an important factor in the development of any business. In this study, 73% of the entrepreneurs gained their initial capital from laboring and own savings, and about 6.5% managed to secure a loan from banks in the start-up stage (Table 5.3).

Table 5.3: Distribution of enterprises by source of capital for business start-up

Source of capital	Frequency	Percent	Cumulative percent
Borrowing from friends and relatives	17	8.5	8.5
Laboring and own savings	146	73.0	81.5
Borrowing from banks	13	6.5	88.0
Borrowing from the Government	7	3.5	91.5
Borrowing from NGOs	17	8.5	100.0
Total	200	100.0	

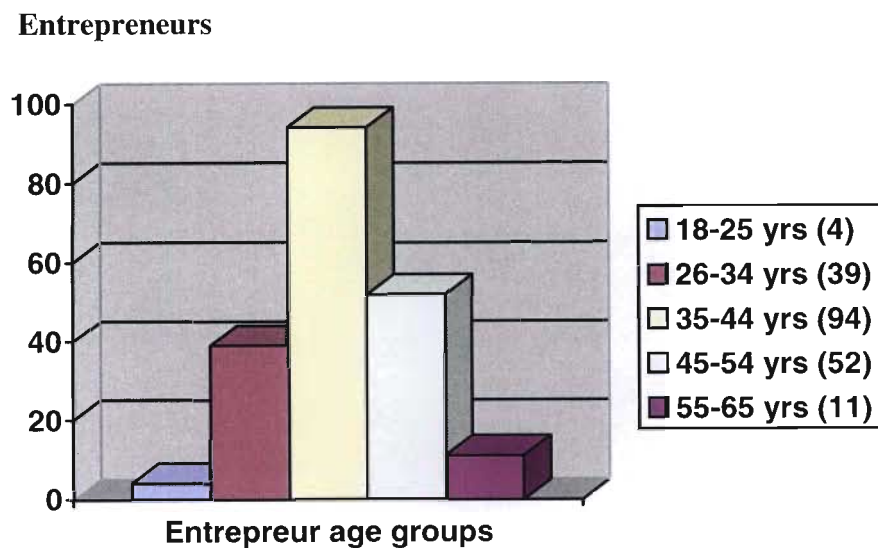
5.3 Characteristics of the entrepreneurs

The next section covers the characteristics of the surveyed entrepreneurs in terms of age, education, training, and prior experience.

5.3.1 Age distribution of entrepreneurs

The age of entrepreneurs ranged from 19 to 65 years. Of the surveyed entrepreneurs, 47%(94) were between 35-44 years, 5.5%(11) were above 55 years and 2%(4) were below 25 years-of-age (in figure 5.3). This might suggest that the modal age to own a business is the 35 to 44 years-of-age category. In the latter age group, one could assume that the entrepreneur has acquired enough experience and capital for a business start-up (Hough, 1982:67).

Figure 5.3: Age distribution of entrepreneurs



5.3.2 Distribution of entrepreneurs by education

Lack of education can be a major problem in the performance of the SMMV sector. A large number of the surveyed SMMV entrepreneurs have low levels of education. Two of the respondents never went to school, while 93 had primary level education, 65 had secondary level education, and 40 had a diploma or above. Overall, only 20% of the surveyed entrepreneurs had a post-secondary education (Table 5.4).

Table 5.4: Distribution of entrepreneurs by education

Education level	Frequency	Percent	Cumulative percent
Never went to school	2	1.0	1.0
Primary education	93	46.5	47.5
Secondary education	65	32.5	80.0
Diploma	28	14.0	94.0
Bachelor	11	5.5	99.5
Masters	1	.5	100.0
Total	200	100.0	

5.3.3 Distribution of entrepreneurs by training

Entrepreneurs were asked two different questions about their training: ‘After completing your formal education, ‘did you attend any long-term training of more than 12 months?’ and ‘Have you attended any off-the-job training of less than 12 months?’. As table 5.5 (page 175) shows, 58% of the surveyed entrepreneurs attended some kind of training. Of these, 57 attended only long-term training of more than 12 months, 21 attended only off-the-job training, and another 38 attended both long-term training and off-the-job training. Off-the-job training is of a shorter duration, ranging from a few days to few weeks.

Table 5.5: Distribution of entrepreneurs by training

Training	Frequency	Percent	Cumulative percent
Only long-term training	57	28.5	28.5
Long-term and off-the-job training	38	19.0	47.5
Only off-the-job training	21	10.5	58.0
No training	84	42.0	100.0
Total	200	100.0	

The duration of long-term training of the respondents varied from 12-36 months. Table 5.6 (page 176) shows that only 95 entrepreneurs had attended long-term training, while 71 attended 12-month training courses, 19 attended 24-month training courses, and 5 attended 36-month training courses. The nature of training also varied, ranging from commercial to technical aspects of training. Thirty-seven respondents had attended 12-month courses that were technical in nature, concentrating mainly on production and designing, 11 attended 12-month courses on creativity, and 13 on business management. The one and two year courses were structured programs of vocational training, offered by Vocational Training Centres (VTCs), and were directed toward trainees acquiring Trade Test Grade III, a nationally recognised qualification in Tanzania.

Table 5.6: Entrepreneurs by nature and duration of long-term training

Nature/Length of long-term training (months)	.00	12	24	36	Total
Book-keeping	0	1	0	0	1
Accountancy	0	7	1	0	8
Business management	0	13	8	0	21
Marketing management	0	2	0	0	2
Creativity	0	11	2	1	14
Technical	0	37	8	4	49
No long-term training	105	0	0	0	105
Total	105	71	19	5	200

5.3.4 Distribution of entrepreneurs by prior experience

Respondents were asked ‘What did you do before starting in this business?’. Their answers are summarised in table 5.7 (page 177) , which shows that 54% of the surveyed business-owners were previously in some kind of employment, 8.5% ran other businesses, 29.5% were unemployed, and 16.5% were full-time students. Therefore, 46% of the surveyed entrepreneurs had no prior occupational experience, either as ordinary employees, managers, or as owners of another business.

Table 5.7: Entrepreneur experience prior to starting the current business

Previous Experience	Frequency	Percent	Cumulative %
Ran a similar business	11	5.5	5.5
Employed in another business	63	31.5	37.0
Employed in public company	7	3.5	40.5
Government employee	21	10.5	51.0
Unemployed	59	29.5	80.5
Full time student	33	16.5	97.0
Ran a different business	6	3.0	100.0
Total	200	100.0	

5.4 Employee characteristics

The following two sections describe the employee human capital, specifically their training and education.

5.4.1 Employee training

Respondents were asked two questions regarding employee training. The first one was ‘How many employees have attended off-the-job training in the period 1997 to 2001?’ and ‘How many employees have attended on-the-job training in the period 1997 to 2001?’. There were 134 enterprises with employees who had attended some kind of training between 1997 and 2001. Of the 134 enterprises, 83 had employees who had participated in only on-the-job training (including apprenticeships), 10 had workers who had attended only off-the-job training, and 41 had employees who had attended both off-the-job and on-the-job training. The pattern tends to suggest that the surveyed SMMVs have a greater preference for on-the-job training (including apprenticeship) than off-the-job training.

5.4.2 Employee education

Owner-managers were asked about the number of employees and their respective years of schooling, from which average years of schooling were established in each enterprise. The statistics revealed that employees had an average of 8.2 years, a median of 8.1, and a mode of 7 years of education for the sample of 200 enterprises.

5.5 Descriptive statistics for performance and conduct of business variables

This section explains performance variables as well as variables regarding conduct of business, such as the number of business records kept, access to finance from banks, and owning another business.

5.5.1 Number of business records

Entrepreneurs were asked ‘How many business records do you keep in your firm? Please list them’. Table 5.8 shows the distribution of the number of records kept by the surveyed entrepreneurs. 36.5% kept two records, 35.5% kept three records, 19.5% kept more than four records, and another 8.5% kept only one record. The mean for the sample was 2.79 records. Business records kept by entrepreneurs were sales, purchases, credits, payroll, expenses, and profit.

Table 5.8: Number of business records kept

Records	Frequency	Percent	Cumulative percent
One	17	8.5	8.5
Two	73	36.5	45.0
Three	71	35.5	80.5
Four	26	13.0	93.5
Six	13	6.5	100.0
Total	200	100.0	

5.5.2 Sales increase

Sales increase was calculated as the difference between highest year sales and the lowest year sales. To eliminate the inflationary effect sales figures were deflated using the appropriate deflators (in table 6.68 on page 250). The median and modal sales were Tzs 150,000.00 and Tzs 200,000.00 respectively.

5.5.3 Profit increase

Like sales increase, profit increase was computed from the answers to the question 'Please indicate the annual income, before tax, for the enterprise for the years 1997 to 2001'. The effect of price changes on sales and profit was eliminated using appropriate annual deflator (table 6.68 on page 250). The modal and median profit was Tzs. 50,000.00, while the average profit was about Tzs 130, 000.00.

5.5.4 Jobs created

Respondents were asked 'How many employees were present in your business as of the years 1997-2001?' The jobs created were computed as number of workers in the year with highest value minus number of workers in the year with the lowest value. The results showed that 790 jobs were created during the period. On average, each enterprise created about 4 jobs during the period (table 5.9). However 11 enterprises retrenched 12, employees, and 73 enterprises did not expand their workforce.

Table 5.9: Jobs created (2001-1997)

N	200
Mean	3.950
Median	1.000
Range	54.00
Maximum	49.00
Sum	790.00

5.5.5 Target markets

Entrepreneurs were asked ‘Where do your customers come from?’ Sixty-two percent of the respondents considered their target market to be within their business locations, 35% considered the whole country of Tanzania, and another 6% considered the domestic and foreign market to be their target market. For entrepreneurs to expand their markets from local to foreign ones, possession of relevant skills is paramount (Matambalya and Wolf, 2001:14).

5.6 Cross-tabulations

Cross tabulation is one of the basic techniques for studying relationships. The method is commonly used to analyse two variables at a time. Cross-tabulations serve as a basis for a statistical approach like chi-square (Aaker *et al*, 2001:431). The following section presents a bivariate analysis for a selected set of variables.

5.6.1 Distribution of the number of employees by activity

Table 5.10 (page 181) presents a summary of the number of employees by activity of the surveyed firms. A total of 1,711 individuals were employed at the time of the survey in 2001; 306 were employed in micro-firms, and 1,405 in small manufacturing enterprises. The number of employees varied from one industrial activity to another. In absolute terms, more workers were employed by edible food processing enterprise (562), and the lowest labour employing activity was animal food processing (34). Table 5.10 shows that in terms of the average number of workers, the edible food-processing sub-sector had a greater mean (about 13 jobs), while tailoring and sewing had a lower figure (about 4 jobs).

Table 5.10: Distribution of employees by activity

Activities	Sum	Mean	N	Std. Deviation
Woodworking	359.00	8.3488	43	6.86219
Tailoring and sewing	147.00	4.4545	33	2.15190
Edible food processing	562.00	13.0698	43	15.80747
Animal food processing	34.00	5.6667	6	3.66970
Metalworks	357.00	7.0000	51	4.77912
Leatherworks	252.00	10.5000	24	14.64359
Total	1711.00	8.5550	200	10.13958

5.6.2 Distribution of jobs created (1997-2001) by enterprise location

By 1997, the surveyed firms employed 921 workers, and in 2001 the number of employees had reached 1,711. Overall, the contribution to employment was 790 jobs. Table 5.11 (page 182) shows that surveyed rural enterprises created a total of 194 jobs, while urban ones created 596 jobs. A comparison of means shows that on average urban-based enterprises created more jobs (mean = about 4 jobs) than the rural ones (mean = about 3 jobs).

In the UK, rural enterprises were found to be creating more jobs than urban-based ones. In a study of 126 and 80 firms in London and Northern rural area of London respectively, Smallbone *et al* (1989:90) found that rural SMEs are more active in job generation than enterprises in London. Net employment increased by 51% in the rural area compared to 6.7% in London. Keeble (1993: 64) further found that the median employment growth in SMEs between 1987 and 1990 was lowest in urban (22.5%), and highest in rural areas (33.3%).

Table 5.11: Comparison of means of jobs created by venture location

Location	Sum	Mean	N	Std. Deviation
Urban	596.00	4.1972	142	10.13962
Rural	194.00	3.3448	58	5.42752
Total	790.00	3.9500	200	9.02412

5.6.3 Distribution of jobs created (1997-2001) by age of the enterprise

Table 5.12 shows that (younger) firm in the 1-5 year age group created more jobs (697) during the period 1997 to 2001 than the older ones (93). The average number of jobs created was 3.95 for the surveyed enterprises. Firms in the 1-5 year age group had an average of 8.01 jobs created per enterprise, while those in the 6-10 year age group had created an average of 0.8627 jobs, and those of 11-32 year age group had an average of 0.7903. Consistent with these findings, in his study of Small Business Enterprises (SBEs) in Scotland, Reid (1993:193) found that younger SBEs accounted for most of the new jobs created.

Table 5.12: Jobs created (1997-2001) by enterprises' age

Enterprise age	Sum	Mean	N	Std. Deviation
1-5 years of age	697.00	8.0115	87	12.32646
6-10 years of age	44.00	.8627	51	1.49692
11-32 years of age	49.00	.7903	62	2.82342
Total	790.00	3.9500	200	9.02412

5.6.4 Entrepreneur education by location

Entrepreneur education was categorised into a high (over 8 years of schooling) and low (1-7 years) education level. Of the 105 entrepreneurs with a higher education level, 85 were urban-based, and of the 95 entrepreneurs with lower education level, 57 were urban-based (Table 5.13). A statistically significant association was found between entrepreneurs' location and their level of education (Chi-square = 10.634, df = 1, p = 0.001). Entrepreneurs in urban locations tend to have a higher level of education than their rural counterparts. Similarly, in a study that was carried out in 1995 and 1996 in the state of Kerala, India, it was found that the majority of rural entrepreneurs have a low education level relative to those in urban areas (Nair *et al*, 1998:81).

Table 5.13: Entrepreneur education by location

Education Level	Urban	Rural	Total
Lower education	57	38	95
Higher education	85	20	105
Total	142	58	200

Chi-square = 10.634, df = 1, p = 0.001

5.6.5 Entrepreneur education by gender

The level of education of the surveyed entrepreneurs varied quite considerably. While the male education ranged from no formal education to a master's degree, that of females ranged from primary education to a bachelor's degree (table 5.14, page 184).

Table 5.14: Entrepreneur education by gender

Education/ Gender	Male	Female	Total	%
Never went to school	2	0	2	1.0
Primary education	82	11	93	46.5
Secondary education	57	8	65	32.5
Diploma	22	6	28	14.0
Bachelor	9	2	11	5.5
Masters	1	0	1	0.5
Total	173	27	200	100

Table 5.15 shows that, on average, female entrepreneurs had greater exposure to schooling (11.25 years) than male entrepreneurs (10.6 years). Rutashobya (2001:28) argues that most Tanzanian female entrepreneurs are first generation entrepreneurs.

Table 5.15: Comparison of means of years of schooling by entrepreneurs' gender

Gender	Mean	N	Std. deviation	Sum
Male	10.6069	173	4.07293	1835.00
Female	11.2593	27	4.31983	304.00
Total	10.6950	200	4.10196	2139.00

5.6.6 Entrepreneurs' age by gender

Table 5.16 (page 185) shows the entrepreneurs' age distribution by gender. Of the surveyed female entrepreneurs, 92.5% (25) were below 45 years of age. Comparatively, 64.6% (112) of the males were below 45 years. Of the total sample, 137 (68.5%) owners were below 45 years. The sample mean age was 40 years. The average age of male entrepreneurs was 41, while that of females was 37.

Table 5.16: Entrepreneurs' Age by gender

Gender/Age	15- 24	25-34	35-44	45-54	55-65	Total
Male	4	30	78	51	10	173
Female	0	9	16	1	1	27
Total	4	39	94	52	11	200
Within Male (%)	2.3	17.3	45	29.4	6	100%
Within Female (%)	0	33.3	59.2	3.75	3.75	100%
Total (%)	2.0	19.5	47.0	26.0	5.5	100%

5.6.7 Entrepreneurs' gender by activity

Table 5.17 shows that in almost all the surveyed manufacturing activities male entrepreneurs dominated. Both woodworking and animal food processing had only one female entrepreneur, and female entrepreneurs were not found in metalwork or in leatherwork. Of the remaining female entrepreneurs, 15 were in tailoring/sewing, and another 10 in edible food processing. Consistent with these results, Harper (1985:14) claimed that “certain manufacturing activities, such as sewing, simple knitting, food preparation, and many types of handicrafts provide more opportunities for employment of women who traditionally have been confined to farming and domestic (activities)”.

Table 5.17: Entrepreneurs' gender by activity

Activity	Male	Female	Total
Woodworking	42	1	43
Tailoring and sewing	18	15	33
Edible food processing	33	10	43
Animal food processing	5	1	6
Metalwork	51	0	51
Leatherwork	24	0	24
Total	173	27	200

5.6.8 Entrepreneurs' gender by form of business ownership

Table 5.18 presents the entrepreneurs in terms of gender and form of business ownership. Of the women-owned enterprises, 20 were sole proprietors, 3 partnerships, and 4 were cooperatives. The survey shows that very few women respondents were involved in the formal manufacturing activities, reflecting that women are disadvantaged with regard to involvement in the formal business activities. Rutashobya (2001:26) claims that although participation of Tanzanian women entrepreneurs in income generating activities has increased since the 1980s, most of these activities are informal, and the few that are formal experience problems with survival.

Table 5.18: Entrepreneurs' gender by form of business ownership

Form of ownership	Male	Female	Total
Sole proprietorship	116	20	136
Partnership	35	3	38
Limited liability company	8	0	8
Co-operative	14	4	18
Total	173	27	200

5.6.9 Entrepreneur need achievement level by gender

The need achievement level (nAch) of the entrepreneurs for the whole sample ranged between 20 and 68 units on the Mehrabian (1975) scale. However, for female entrepreneurs it ranged between 29 and 68, and for males between 20 and 66. Table 5.19 (page 187) shows the comparison of means between male and female nAch level. Female entrepreneurs are seen to have a slightly higher average nAch level (48.07) than male (47.96). However, the nAch for the whole sample is 47.98. From these results, one cannot conclude that the difference between the two group means was significant.

Table 5.19: Entrepreneur need achievement level by gender

Gender	Mean	N	Std. Deviation	Sum
Male	47.9653	173	9.27230	8298.00
Female	48.0741	27	8.67324	1298.00
Total	47.9800	200	9.17280	9596.00

5.6.10 Enterprises' size by activity

Table 5.20 presents a distribution of the surveyed enterprises in terms of activity and size. To reiterate, a micro enterprise is defined as one with 1 to 4 employees, and a small firm as one with between 5 and 49 employees. Small enterprises were predominantly in metalwork while micro enterprises were mainly in tailoring and sewing. The number of firms in edible food processing, animal food processing, and leatherwork was more or less evenly distributed between micro and small enterprises.

Table 5.20: Enterprises' size by activity

Activity/Size	Micro enterprises	Small enterprises	Total
Woodworking	14	29	43
Tailoring and sewing	21	12	33
Edible food processing	21	22	43
Animal food processing	3	3	6
Metalwork	13	38	51
Leatherwork	11	13	24
Total	83	117	200

5.7 Conclusion

This chapter described the socio-economic profile of the surveyed small and micro-manufacturing entrepreneurs in Tanzania. Various salient issues can be drawn from the initial results of this study. Firstly, most of the surveyed SMMVs are located in urban areas, suggesting that the Tanzanian urban environment is more conducive for establishing SMMVs than the rural areas.

Secondly, it was found that 73 % of the surveyed enterprises got their start-up capital through laboring and their own savings. The results seem to suggest that financial institutions in Tanzania are not playing an important role in making start-up capital available for SMMVs. One could assume that either loan capital is inadequate, or conditions for getting loans are very stringent, or that entrepreneurs themselves are not capable of justifying the viability of their activities through business plans.

Thirdly, 48.5 % of the surveyed entrepreneurs have low education levels. Entrepreneurs with greater number of years of schooling might keep more business records, create more jobs, and have more sales and profit than those with lower years of schooling. Further statistical analyses of the relationship between education and performance as well as conduct of business will be presented in the next chapter.

Fourthly, it was found that 105 of the surveyed entrepreneurs had not attended any training of between 12 and 36 months. 116 were found to have attended training courses of less than 12 months (off-the-job training). 84 entrepreneurs attended neither long-term training nor off-the-job training. Regarding training of employees, 134 enterprises had employees who had attended some kind of training between 1997 and 2001. Of the 134 enterprises, 83 had employees who had attended on-the-job training (including apprenticeships), suggesting that on-the-job training and apprenticeship is the preferred type of training.

Fifthly, 118 entrepreneurs had some previous occupational experience, either as employees, managers, or owner of another business. The next chapter covers research findings, data analyses, and hypotheses testing.

CHAPTER 6

DATA ANALYSES AND RESEARCH FINDINGS

6.1 Introduction

In order for SMMVs to be successful, their entrepreneurs need to have adequate training, education, experience, and motivation. Further, to improve business performance, entrepreneurs need to empower their employees with relevant training, education, experience, and incentives. These human capital elements pave the way to testing of the hypotheses that differences in SMMV performance could be due to differences in human capital development among entrepreneurs and employees.

This chapter focuses on the data analyses for hypotheses testing. Both parametric and non-parametric tests were used to examine the hypotheses. SPSS was used for statistical analyses, including normality tests, chi-square tests, correlation analysis, Mann Whitney U –test, T-tests, F-test, ANOVA, and discriminant and multiple regression analyses.

Section 6.2 of the chapter examines the associations between human capital and selected venture performance variables, while section 6.3 investigates the impact of nAch level on the performance of the surveyed enterprises. Section 6.4 investigates the impact of entrepreneur education, and sections 6.5 and 6.6 examine the impact of entrepreneur training and entrepreneur prior occupational experience on venture performance. Section 6.7 examines impact of employee experience, section 6.8 explores the impact of employee education, and section 6.9 looks at the impact of employees training on the performance of the surveyed enterprises.

Section 6.10 and 6.11 tested the secondary hypotheses (SH), and productivity respectively. In section 6.12, an attempt is made to fit multiple regression models. The section covers parsimonious multiple regression models, problems of multiple regression models, coefficients of determination, adequacy of the model, and significance of the coefficients. The last section provides a summary of the chapter, including conclusions regarding the hypotheses. This chapter must be read with certain

limitations in mind, as the surveyed sample, which included only the formal SMMVs in Tanzania, was relatively small. The reliability test of the measurement instrument, as reflected by the Cronbach's alpha, was reasonably good.

6.2 Proposition 1 (P₁): Association between need achievement and SMMV performance (page 121)

Prior to investigating whether differences in SMMV performance are due to differences in human capital development and whether human capital have any predictive power on SMMV performance, an analysis was conducted to examine the association between human capital and performance variables.

Chi-square and correlation tests were carried out for specific hypotheses related to the proposition stated above. The following section explains the associations between SMMV performance and entrepreneur nAch, education, training, and experience. It also explains the association between SMMV performance and employee education, training, and experience.

6.2.1 Associations between entrepreneur need achievement level and performance (Correlation analysis)

For correlation analysis to be carried out, a null hypothesis could be formulated as follows: 'There is no correlation between the entrepreneur nAch level and performance of the surveyed SMMVs'. Welman and Kruger (2002: 198) argue that such kinds of null hypotheses play the role of devil's advocate for the alternative hypotheses.

6.2.1.1 Correlation between entrepreneur need achievement and jobs created

Table 6.1 (on page 192) shows that there was a positive correlation between entrepreneur nAch level and the jobs created for 1997 to 2001 ($r = 0.025$, $p = 0.535$), but that this relationship was relatively weak and not statistically significant at the 0.05 level.

6.2.1.2 Correlation between entrepreneur need achievement and profit increase

There was a weak and negative correlation between nAch and profit increase for the period 1997 to 2001 ($r = -0.047$, $p = 0.537$). This relationship was also not statistically significant at the 0.05 level (table 6.1).

Table 6.1: Correlation matrix for entrepreneur, need achievement level, and performance

	Correlation(r) and p-value(p)	nAch level	Jobs created	Profit increase	Sales	Profit
nAch level	r	1	.025	-.047	-.003	-.030
	p	.	.535	.537	.962	.676
Jobs created	r		1	.219*	-.039	-.060
	p			.012	.357	.269
Profit increase	r			1	.283**	.465**
	p				.000	.000
Sales	r				1	.924**
	p				.	.000
Profit	r					1

* Correlation is significant at the 0.05 level (2-tailed).

** Correlation is significant at the 0.01 level (2-tailed).

6.2.1.3 Correlation between entrepreneur need achievement and sales

A weak and negative correlation was found between nAch and sales for 1997-2001 ($r = -0.003$, $p = 0.962$). The association was not statistically significant at the 5% level (table 6.1).

6.2.1.4 Correlation between entrepreneur need achievement and profit

Likewise, table 6.1(on page 192) shows a negative and weak correlation between entrepreneur nAch and profits for 1997 to 2001 ($r = -0.030$, $p = 0.676$). The results above suggested that entrepreneur nAch levels were not statistically correlated to performance measures like jobs created, profit increase, sales, and profit. With the correlation results stated above, one can conclude that the entrepreneur need achievement level does not seem to play an important role in the performance of the surveyed Tanzanian businesses.

6.2.2 Association between entrepreneur education and SMMV performance

The chi-square tests and correlation analysis were used to identify whether there is any significant association between entrepreneur education and performance. Specifically, the analyses investigated the association between:

- Entrepreneur education and access to target markets
- Entrepreneur education and sales
- Entrepreneur education and jobs created.

6.2.2.1 Association between entrepreneur education and target markets

Table 6.2 (on page 194) shows that entrepreneurs with a low education level tend to serve the local market, i.e. markets that are within or close to the business location. Of 124 entrepreneurs who consider their target market to be within the business location, 56.4% were entrepreneurs with a low education level. Of 70 entrepreneurs who consider their target market to be all Tanzania, 67.1% had a high education level. The chi-square test results suggest that the entrepreneur's ability to identify and take advantage of market opportunities is associated with the level of education ($X^2 = 10.486$, $df = 2$, $p = 0.005$). Thus, the size or scope of market coverage seems to be related to the entrepreneur's level of education.

Table 6.2: Distribution of entrepreneur education and target markets

Market	Description	Lower education	Higher education	Total
Local	Count (%)	70 (56.4)	54 (43.6)	124 (100)
Domestic	Count (%)	23 (32.9)	47 (67.1)	70 (100)
Domestic and foreign	Count (%)	2 (33.3)	4 (66.7)	6 (100)
Total	Count (%)	95 (47.5)	105 (52.5)	200 (100)

$$X^2 = 10.486, df = 2, p = 0.005$$

6.2.2.2 Association between the entrepreneur education and sales

Table 6.3 indicates that a positive and significant correlation exists between entrepreneur education and sales ($r = 0.271$, $p = 0.000$). This correlation seems to suggest that more educated entrepreneurs are likely to have more sales than their less educated counterparts.

Table 6.3: Pearson correlation matrix for entrepreneur education and performance

	Correlation(r) and p-value (p)	Entrepreneur education	Sales	Jobs created
Entrepreneur education	r	1	.271**	.220**
	p		.000	.002
Sales	r		1	.039
	p			.586
Jobs created	r			1
	N	200	200	200

** Correlation is significant at the 0.01 level (2-tailed).

6.2.2.3 Association between the entrepreneur education and jobs created

Similarly, table 6.3 (page 194) shows a positive and significant correlation between entrepreneur education and jobs created ($r = 0.22$, $p = 0.002$). The correlation between entrepreneur education and jobs created seems to suggest that more educated entrepreneurs are likely to create more jobs than their less educated counterparts. One could reason that educated businesspersons are more capable of managing a bigger labour-force than less educated individuals.

6.2.3 Association between entrepreneur training and performance (Correlation)

A correlation analysis was done to identify the direction and strength of association between entrepreneur training and sales as a performance variable. Pearson's correlation coefficient for this pair is presented in the following section:

6.2.3.1 Association between entrepreneur training and sales

Table 6.4 shows that there was a positive and significant correlation between entrepreneur duration of training and their sales ($r = 0.293$, $p = 0.000$). From the correlation results, one could suggest that entrepreneurs with a greater duration of training are likely to attain more sales than their untrained counterparts

Table 6.4: Correlation matrix for entrepreneur training and sales.

	Correlation(r) and p-value(p)	Entrepreneur training	Sales
Entrepreneur training	r	1	.293**
	p		.000
Sales	r		1
	N	200	200

** Correlation is significant at the 0.01 level (2-tailed).

6.2.4 Association between entrepreneur experience and target markets (Chi-square Test)

Entrepreneurs' previous occupational experience was measured in terms of number of years of managerial experience before establishing the surveyed enterprise, number of years of business ownership before establishing the current business, and years of working experience in firms producing the same or different products. Lee and Tsang (2001:590) argue that the above experiences are useful measures of occupational experience. As shown earlier (in table 5.7 on page 177), 92 entrepreneurs had no prior occupational experience, and this group consisted of school leavers and the unemployed. 108 entrepreneurs had prior business experience. The association of entrepreneurs' previous business experience and access to target markets, as an indicator of performance, was examined.

Entrepreneurs were equally distributed with regard to access to local markets. 57 % (40) of those who considered their market to be within Tanzania had prior business experience, and all those who considered their target market to include foreign markets had prior business experience (Table 6.5 page 197). The chi-square test results indicate that there was a significant association between the entrepreneurs' prior business experience and choice of target market ($X^2 = 6.188$, $df = 2$, $p = 0.045$). This seems to suggest that entrepreneurs with prior business experience are more likely to access or service domestic and foreign markets than less experienced counterparts. Previous business experience can provide useful information about the existence of market opportunities.

Table 6.5: Entrepreneur experience and target market

Target markets	No previous experience	With previous experience	Total
Local	62	62	124
Domestic	30	40	70
Domestic and foreign		6	6
Total	92	108	200

$$X^2 = 6.188, df = 2, p = 0.045$$

6.2.5 Associations between employee experience and SMMV performance (Correlation Analysis)

Statistical analyses of associations were carried out for two pairs of test variables:

- Employee experience in the current firm and sales, and
- Employee experience in the current firm and profit.

Below is the discussion for each pair.

6.2.5.1 Association between employee experience in the current firm and sales

Table 6.6 (page 198) shows that there was a positive and moderate correlation between workers' occupational experience in the same firm and sales ($r = 0.231$, $p = 0.001$). It can thus be concluded that enterprises with more worker experience in the same firm are likely to generate significantly more sales, relative to those with little or no experience.

Table 6.6: Pearson's correlation matrix for employee experience, sales, and profit

	Correlation (r) and p-value (p)	Employee experience	Sales	Profit
Employee experience	r	1	.231**	.244**
	p		.001	.000
Sales	r		1	.924**
	p			.000
Profit	r			1
	N	200	200	200

** Correlation is significant at the 0.01 level (2-tailed).

6.2.5.2 Association between employee experience in the current firm and profit

Table 6.6 shows that there was a positive and moderate correlation between workers' occupational experience in the same firm and profit ($r = 0.244$, $p = 0.000$). This correlation coefficient was, however, significant at 0.01 level. It can be concluded that ventures with more worker experience in the same firm are likely to experience more profit than those with less. The evidence in table 6.6 seems to suggest that worker experience in the enterprise does impact on improving sales and profit in the surveyed SMMVs.

6.2.6 Association between employee education and SMMV performance (Correlation analysis)

Pearson's correlation coefficient was used to examine the association between the employee schooling and enterprise performance. In this case, the selected performance variables were sales and profit. The correlation results are summarised in table 6.7 (page 199).

6.2.6.1 Association between employee education and sales

A positive correlation is found between employee education and sales (table 6.7). The association is found to be significant ($r = 0.32$, $p = 0.000$). It can be suggested that ventures with educated employees are likely to attain more sales than their counterparts with less educated workers.

Table 6.7: Pearson's correlation matrix for employee education, sales, and profit

	Correlation(r) and p-value (p)	Employee education	Sales	Profit
Employee education	r	1	.320**	.293**
	p		.000	.000
Sales	r		1	.924**
	p			.000
Profit	r			1
	N	200	200	200

** Correlation is significant at the 0.01 level (2-tailed).

6.2.6.2 Association between employee education and profit

The correlation results in table 6.7 also show a significant and positive correlation between employee education and profit ($r = 0.293$, $p = 0.000$). This indicates that ventures with educated employees are likely to gain more profit than those with poorly educated employees.

6.2.7 Association between employee training and performance

Pearson's correlation coefficient was used to examine the association between employee training and enterprise performance. In this case, the selected performance variables were sales and profit. The correlation results are summarised in table 6.8 (page 200).

6.2.7.1 Association between employee training and profit

A positive and significant correlation is found to exist between employee training and profit ($r = 0.361$, $p = 0.000$) (table 6.8). The correlation results indicate that ventures with a larger number of trained employees are likely to earn more profit than those with a smaller number of trained employees.

Table 6.8: Correlation matrix for employee training, profit, and sales

	Correlation(r) and p-value (p)	Profit	Employee training	Sales
Profit	r	1	.361**	.924**
	p	.	.000	.000
Employee training	r		1	.342**
	p			.000
Sales	r			1
	p			
	N	200	200	200

** Correlation is significant at the 0.01 level (2-tailed).

6.2.7.2 Association between employee training and sales

A positive and significant correlation is also found between employee training and sales (table 6.8). Such a correlation result ($r = 0.342$, $p = 0.000$) suggests that enterprises with a larger number of trained employees are likely to have more sales than their counterparts with a small number of trained workers.

6.3 The influence of entrepreneur need achievement on SMMV performance: P₂ (page 130)

To test the influence of entrepreneur nAch on venture performance, nAch scores were sorted in ascending order. The sample was then split into two independent groups. Entrepreneurs with scores between 20 and 44 were placed in the low nAch group (79), while those with scores between 45 and 68 were placed in the high nAch group (121). The ranking of the data into ascending order, and dividing the sample into two independent groups was necessary to test the assumption that if the samples are from the same population and nothing else influenced the sample differently, the means of the sample would be similar or the same.

In this case, differences of performance were examined using discriminant analysis. According to Aaker *et al* (2001:534), discriminant analysis is an appropriate technique for testing the hypotheses that group means of two or more groups are equal. In this research, only two groups were categorised for purpose comparison of means and testing of hypothesis. SPSS's discriminant analysis assumes equal variances between nAch groups; the standard deviations and means are not expected to vary across groups. Explanations of group means and standard deviations for each performance variable are provided below.

6.3.1 Hypothesis testing of hypothesis H_{2.1} (discriminant analysis)

To test the influence of entrepreneur nAch on jobs created (hypothesis H_{2.1}), the following null and alternative hypotheses were formulated:

- H₀: Entrepreneurs with higher nAch create, on average, the same number of jobs as those with lower nAch levels.
- H_{2.1}: Entrepreneurs with higher nAch create more jobs than their counterparts with lower nAch levels.

Table 6.9 shows that there was no significant difference between mean jobs created by entrepreneurs classified in terms of nAch level (Wilk's Lambda = 0.997, df = 1, p = 0.462). H_0 was accepted, and a conclusion can be made that entrepreneurs with high nAch statistically do not seem to have created, on average, a greater number of jobs (mean = about 4.3 jobs) than those with low nAch (mean = about 3.3 jobs).

Table 6.9: Discriminant analysis for hypothesis H_{2.1}

nAch	Performance	Mean	Std. deviation
Low	Jobs created 2001-1997	3.3671	7.70644
High	Jobs created 2001-1997	4.3306	9.80169
Total	Jobs created 2001-1997	3.9500	9.02412

Wilks' Lambda

Test of Function(s)	Wilks' Lambda	Chi-square	df	P
1	.997	.541	1	.462

6.3.2 Hypothesis testing of hypothesis H_{2.2} (discriminant analysis)

To test the impact of entrepreneur nAch on sales performance (hypothesis H_{2.2}), the following hypotheses were developed:

- H_0 : The sales-means for entrepreneurs with higher nAch are not different from those with lower nAch.
- $H_{2.2}$: Entrepreneurs with higher nAch have more sales than their counterparts with lower nAch.

Table 6.10 (page 203) shows that, on average, there was no significant difference in sales between entrepreneurs with high nAch levels and those with low (Wilk's Lambda = 1.000, df = 1, p = 0.478). H_0 was accepted, and the conclusion can be made that

entrepreneurs with high nAch seem to have the same average sales (mean = about Tzs 61,100.00) as those with low nAch (mean = about Tzs 61,900).

Table 6.10: Discriminant analysis for hypothesis 2.2 (H_{2.2})

nAch level	Performance	Mean	Std. deviation
Low	Sales	61906.8415	92868.60357
High	Sales	61179.9097	94845.25197
Total	Sales	61467.0478	93835.54850

Wilks' Lambda

Test of Function(s)	Wilks' Lambda	Chi-square	df	P
1	1.000	.003	1	.957

6.3.3 Hypothesis testing of hypothesis H_{2.3} (discriminant analysis)

To test influence of entrepreneur nAch on profit performance (hypothesis H_{2.3}), the null and alternative hypotheses were stated as follows:

- H₀: The profit means are equal for entrepreneurs with higher nAch and those with lower nAch.
- H_{2.3}: Entrepreneurs with higher nAch levels earn greater profit than their counterparts with low nAch.

Likewise, table 6.11 (page 204) shows no significant difference in mean profits between entrepreneurs with high nAch level and that of those with low (Wilk's Lambda = 0.998, df = 1, p = 0.559). H₀ was accepted, and a conclusion can be made that the average profit earned by entrepreneurs with high nAch (mean = about Tzs 19,000.00) do not seem to be significantly different from those with low nAch (mean = about Tzs 21,600.00).

Table 6.11: Discriminant analysis for hypothesis 2.3 (H_{2.3})

nAch level	Performance	Mean	Std. deviation
Low	Profit	21618.6953	32462.38974
High	Profit	18994.2493	29969.45085
Total	Profit	20030.9055	30924.31049

Wilks' Lambda

Test of Function(s)	Wilks' Lambda	Chi-square	df	P
1	.998	.342	1	.559

It was surprising to find that performance was not significantly different when entrepreneurs were grouped in terms of nAch levels. Entrepreneurs seem not to be homogeneous (Boshoff and Scholtz; 1995:8). One would have expected some sort of differences in performances between entrepreneurs in low and in high nAch groups. At this point, one would surmise that this surprising result might arise because the sample size of 200 entrepreneurs was relatively small, or because the Mehrabian measurement instrument is not sufficiently suited for use in the Tanzanian circumstances.

Lee and Tsang (2001:597) found that personality traits (including nAch level) in general are important factors affecting venture growth. McClelland (1965:7) cautioned that it is often individuals with low nAch who are obsessively driven by profit, and not individuals with high nAch. However, in his study on effective entrepreneurship at the small firm level in the Eastern Cape, South Africa, Mahadea (1993:29, 1994) found that nAch level is significantly associated with an individual's desire for entrepreneurship, and success in that role.

6.4 The influence of entrepreneur education on SMMV performance: Proposition 3 (page 131)

To test the effect of entrepreneur education on venture performance, entrepreneurs were sorted into two independent groups. Those with seven or less years of schooling were considered as having a lower education level (also considered uneducated), while those with above seven years of schooling were categorised as having a higher education level (also considered educated). Of the surveyed entrepreneurs, 47.5% were categorised as lowly educated (uneducated), and the other 52.5% highly educated (educated).

To test the impact of entrepreneur education, the parametric t-test for equality of means of two independent samples was used. Parametric tests are considered to be appropriate when the data are interval or ratio scales, and equality of variances as well as normality is assumed. However, SPSS carries out independent sample t-tests even when variances are not equal (Brace *et al*, 2000:76), implying that, the t-test for equality of means can be carried out even if the data is not normally distributed.

6.4.1 T-test for equality of sales means by entrepreneur education: hypothesis 3.1 (H_{3.1})

The following null and alternative hypotheses were formulated to test the influence of entrepreneur education on sales performance:

- H₀: The average level of sales between highly and poorly educated entrepreneurs is not different.
- H_{3.1}: Entrepreneurs with a higher education level have, on average, more sales than those who have a lower education level.

Table 6.12 (page 206) shows that the average annual sale for the educated group is about Tzs 80,000.00, whereas that of the poorly educated group is about Tzs 40,000.00.

This shows that the average sales of educated entrepreneurs are almost twice that of their less educated counterparts.

Table 6.12: Comparison of sales-means between educated and uneducated entrepreneurs

Performance	Entrepreneur education	N	Mean	Std. deviation	Std. error mean
Sales	Uneducated	95	40177.36	65774.01	6748.271
	Educated	105	80729.14	110224.2	10756.78

Table 6.13 shows two tests - Levene's test and the t-test. Levene's test is used to test whether variances in the low and high education groups are equal or not. The decision rule for Levene's test is that if the p-value is less than 0.05, the group variances are significantly different, and if the p-value is greater than 0.05, the variances are roughly equal (Field, 2002:238). For the data used to test hypothesis $H_{3.1}$, equality of variances was not assumed, since Levene's test was not significant, as the p-value was found to be less than 0.05 ($p = 0.000$).

Table 6.13: T-test for hypothesis $H_{3.1}$

Performance	Assumption	Levene's Test for equality of variances		t-test for equality of means		
		F	p-value	t	df	p-value
Sales	No equal variances	25.422	0.000	3.193	172.42	.002

Grouping variable: Entrepreneur education

The right hand side of table 6.13 shows the results of a t-test for equality of means, while not assuming equality of means. The table (6.13) shows a significant difference in sales between entrepreneurs of different education levels ($t = 3.193$, $p = 0.002$).

The null hypothesis for $H_{3,1}$ was rejected. A conclusion can be drawn that educated entrepreneurs are likely to achieve more sales than their less educated counterparts.

6.4.2 T-test for hypothesis $H_{3,2}$ (Jobs created)

To test the influence of entrepreneur education on job created, the following hypotheses were developed:

H_0 : The average number of jobs created by the highly and poorly educated entrepreneurs is the same.

$H_{3,2}$: Entrepreneurs with a higher education level create more jobs than those who have a lower education level.

Table 6.14 shows that educated entrepreneurs created more jobs (mean = 5.809 jobs) than uneducated entrepreneurs (mean = 1.89 jobs).

Table 6.14: Comparison of jobs created-means by entrepreneur education

Performance	Entrepreneur education	N	Mean	Std. deviation	Std. error mean
Jobs created	Uneducated	95	1.8947	3.47169	.35619
	Educated	105	5.8095	11.7294	1.14467

Results of the t-test (table 6.15 page 208) show a significant difference in jobs created by entrepreneurs with different education levels ($t = 3.266$, $p = 0.001$). In this case, since Levene's test indicated a p-value that is less than 0.05 ($p = 0.001$), equal variances were not assumed. The null hypothesis for $H_{3,2}$ was rejected. A conclusion can be made that educated entrepreneurs are likely to create more jobs (mean = 5.8 jobs) than less educated ones (mean = 1.8 jobs).

Table 6.15: T-test for hypothesis H_{3.2}

Performance	Assumption	Levene's test for equality of variances		t-test for equality of means		
		F	p-value	t	df	p-value
Jobs created	No equal variances	16.275	0.000	3.266	123.831	.001

Grouping variable: Entrepreneur education

6.5 The influence of entrepreneur training on SMMV performance: Proposition 4 (page 134)

To investigate the impact of entrepreneur training on performance of SMMVs, the sample was classified into two groups: those who had attended training and those who had not, hereinafter called trained and untrained entrepreneurs. As mentioned earlier, only 95 entrepreneurs attended training. Using the t-test for comparing group means, it was found that performance of entrepreneurs who have attended long-term training and performance of those who have not attended training is significantly different. The performance variables tested were sales, profit, and job creation. Also, a significant difference was found with regard to entrepreneurs' conduct of business, and this is covered later (in section 6.10).

6.5.1 T-test for equality of sales-means by entrepreneur training: Hypothesis 4.1

To investigate the impact of entrepreneur training on sales performance the following hypotheses were formulated:

- H_0 : The average sales for trained entrepreneurs and untrained entrepreneurs are equal
- $H_{4.1}$: Trained entrepreneurs have, on average, more sales than their untrained counterparts

Table 6.16 shows that the average sales for trained entrepreneurs are about Tzs 89,000.00 whereas, that of untrained entrepreneurs was about Tzs 36,000.00. This shows that average sales of trained entrepreneurs are more than twice that of their untrained counterparts.

Table 6.16: Comparison of sales-means between trained and untrained entrepreneurs

Performance	Entrepreneur training	N	Mean	Std. deviation	Std. error mean
Sales	Trained	95	89502.93	114977.24	11796.41
	Untrained	105	36101.24	59430.66	5799.83

Table 6.17 shows two tests - Levene's test and the t-test. For the data used to test hypothesis $H_{4.1}$, equality of variances was not assumed, as the p-value from Levene's test was found to be less than 0.05 ($p = 0.000$).

Table 6.17: T-test for hypothesis $H_{4.1}$

Performance	Assumption	Levene's test for equality of variances		t-test for equality of means		
		F	p-value	t	df	p-value
Sales	No equal variances	38.298	.000	4.062	136.66	.000

Grouping variable: Entrepreneur training

The right hand side of table 6.17 shows the results of a t-test for equality of means, while not assuming equality of variances. The table (6.17) shows a significant difference in average sales between entrepreneurs who have attended training and those who have not ($t = 4.062$, $p = 0.000$). The null hypothesis for $H_{4.1}$ is rejected.

The conclusion can be drawn that trained entrepreneurs are likely to have significantly more sales than their untrained counterparts.

6.5.2 T-test for equality of profit means by entrepreneur training: Hypothesis 4.2 (H_{4.2})

The following null and alternative hypotheses were formulated to test the influence of entrepreneur training on sales performance:

- H₀: Trained entrepreneurs and untrained entrepreneurs earn the same amount of profit.
- H_{4.2}: Trained entrepreneurs earn on average more profit than their untrained counterparts.

Table 6.18 shows that trained entrepreneurs earned on average more profit (about Tzs 30,000.00) than their counterparts who did not attend training (about Tzs 11,200.00).

Table 6.18: Comparison of profit means by entrepreneur training

Performance	Entrepreneur training	N	Mean	Std. Deviation	Std. error mean
Profit	Trained	95	29799.449	38877.46	3988.74
	Untrained	105	11192.7	17254.32	1683.85

The results of the t-test (table 6.19 page 211) show a significant difference in profit means between trained and untrained entrepreneurs ($t = 4.298$, $p = 0.000$). In this test, equal variances were not assumed since the p-value from Levene's test was less than 0.05 ($p = 0.000$). With these results (in table 6.18 and 6.19), the null hypothesis for H_{4.2} is rejected. The conclusion can be made that trained entrepreneurs are likely to earn significantly more profit than untrained entrepreneurs.

Table 6.19: T-test for hypothesis H_{4.2}

Performance	Assumption	Levene's test for equality of variances		t-test for equality of means		
		F	p	t	Df	p(2-tailed)
Profit	Unequal variances	47.873	.000	4.298	126.848	.000

Grouping variable: Entrepreneur training

6.5.3 T-test for equality of job created-means by entrepreneur training: Hypothesis 4.3 (H_{4.3})

To test the impact of entrepreneur training on job creation the following hypotheses were formulated:

- H₀: The number of jobs created by trained and untrained entrepreneurs is the same.
- H_{4.3}: Trained entrepreneurs create more jobs than those who have not attended training.

Table 6.20 comparison of job created-means by entrepreneur training

Performance	Entrepreneur training	N	Mean	Std. deviation	Std. error Mean
Jobs created	Attended training	95	3.4526	7.80585	.80086
	No training	105	4.4000	10.01595	.97746

Table 6.20 shows that trained entrepreneurs created slightly less jobs (about 3.4 jobs) than those without training (about 4.4 jobs). In testing for equality of means, equal variances were assumed, as the p-value from Levene's test was greater than 0.05 ($p = 0.391$). It was found that there is no significant difference in jobs created by trained and untrained entrepreneurs ($t = 0.741$, $p = 0.460$). Trained and untrained entrepreneurs were creating nearly the same average number of jobs (Table 6.21 on page 212).

Table 6.21 T-test for hypothesis H_{4.3}

Performance	Assumption	Levene's test for equality of variances		t-test for equality of means		
		F	p	t	Df	p(2-tailed)
Jobs created	Equal variances	0.763	0.391	0.741	198	.460

6.6 The influence of entrepreneur experience on SMMV performance: Proposition 5 (page 135)

To test the impact of entrepreneur's prior experience, performance of entrepreneurs with prior experience (108) was compared with that of those without (92). Apart from data being categorical, the decision with regard to the type of statistical technique to be used was based on the results of the normality test.

6.6.1 Normality test

As stated earlier, if the data are not normally distributed and are ordinal or nominal, a non-parametric test is appropriate (Foster, 1998:7, Bryman and Cramer, 1999:116, Brace *et al*, 2000:81). In this study, SPSS's Shapiro-Wilks test was used to determine whether the test variables are normally distributed or not. According to Field (2000:51), if a p-value is less than 0.05, it indicates that the data is significantly different from a normal distribution.

The Shapiro-Wilks test results (Table 6.22 page 213) show that the two variables, no prior occupational experience and with prior occupational experience, have p-values that are less than 0.05 ($p = 0.000$, $p = 0.000$ respectively). The results indicate that the data for entrepreneur experience are significantly different from normal distribution.

The data being categorical and different from a normal distribution made it appropriate to carry out a Mann-Whitney U-test for hypothesis H_5 (Foster, 1998:7; Brace *et al* 2000:81).

Table 6.22: Shapiro-Wilk's normality test

Performance	Entrepreneur experience	Statistic	Df	P
Target markets	No previous experience	.591	92	.000
	With previous experience	.705	108	.000

6.6.2 Mann-Whitney U-test for equality of target markets served by entrepreneur experience: Hypothesis 5 (H_5)

Proposition P_5 (in section 4.2.5 page 137) can be restated as follows:

- H_0 : The target market for entrepreneurs with prior occupational experience is the same as for those without.
- H_5 : The target market for entrepreneurs' with prior occupational experience is broader than those without.

Table 6.23 (page 214) shows that the mean score of target markets was slightly greater for entrepreneurs' with prior occupational experience (105.93), than those without prior occupational experience (94.13). Since entrepreneurs response to the question 'Where do most of your customers come from?' were either local only, or local and domestic only, or domestic and foreign markets were coded 1, 2, and 3 respectively (in the questionnaire), the results suggest that entrepreneurs with prior business experience serve a broader target market than those with less experience.

Table 6.23: Mean score for target markets by entrepreneur experience

Performance	Entrepreneur experience	N	Mean score	Sum of scores
Target markets	No previous experience	92	94.13	8660.00
	With previous experience	108	105.93	11440.00

Table 6.24 shows the Mann-Whitney U test results for hypothesis H₅. Contrary to expectations and results in table 6.22, p-values for product market when entrepreneurs were grouped by prior occupational experience was greater than 0.05 (Mann-Whitney = 4382, p = 0.09). The null hypothesis was accepted, and the conclusion can be made that the results (in table 6.22) do not indicate a significant difference, in terms of the target markets served, between entrepreneurs with prior occupational experience and those without prior business experience, at the usual 5% level of significance. A difference may exist at 10% level of significance.

Table 6.24: Mann-Whitney U-test for hypothesis H₅

Description	Target Markets
Mann-Whitney U	4382.000
Wilcoxon W	8660.000
Z	1.694
P – value, 2-tailed	.090

Grouping variable: Entrepreneur experience

6.7 Impact of employee experience on SMMV performance: Proposition 6 (page 136)

So far, the analyses of SMMV performance have focused mainly on the human capital elements of one key person - the entrepreneur. It should be appreciated, however, that other persons are also involved in the venture performance of manufacturing enterprises

of the kind surveyed. In particular, the role of employees is paramount in labour-intensive SMMVs, but the contribution of physical capital is certainly not to be overlooked. The next sub-section will examine the contribution of employees to the performance of the surveyed enterprises. It specifically investigates the impact of employee experience, education, and training on the performance of the surveyed SMMVs. Employee nAch levels could not be explored, due to time and financial limitations.

To carry out the tests for the impact of workers' experience on sales and profit performance, the sample was split into two different groups - one with inexperienced employee (1-6.25 years), and the other with experience employees (6.30-30 years). The low worker experience group had 101 firms, and the high worker experience group had 99 firms.

6.7.1 T-test for equality of sales means by employee experience: Hypothesis 6.1 (H_{6,1})

Proposition P₆ (in section 4.2.6 page 139) can be restated in the following null and alternative hypotheses:

- H₀: Ventures with greater worker experience and those with low worker experience in the current firms have the same average sales.
- H_{6,1}: Ventures with greater worker experience in the current firm have, on average, more sales than those with less.

Table 6.25 (page 216) shows that enterprises with more experienced workers in the firm have greater average sales (about Tzs 91,800.00) than those with less experienced employees (about Tzs 31,700.00).

Table 6.25: Comparison of sales-means for ventures grouped by employee experience in the firm

Performance	Employee experience	N	Mean	Std. deviation	Std. error mean
Sales	Less	101	31708.81	53837.8214	5357.06345
	Greater	99	91826.45	114360.570	11493.66982

Table 6.26 shows the t-test results for equality of sales-means of ventures grouped by workers' occupation experience in the surveyed firm. It shows that the p-value for Levene's test was less than 0.05 ($p = 0.000$), and unequal group variances were assumed. The p-value for the t-test was less than 0.05 ($p = 0.000$), indicating that there was a significant difference in average sales between ventures with greater worker experience in the current firm and those with less. It could be suggested that ventures with more experienced workers are likely to attain significantly more sales than firms with a less experienced labour force.

Table 6.26: The t-test for equality of sales-means by employee experience

Performance	Assumption	Levene's test for equality of variances		t-test for equality of means		
		F	p-value	t	df	p-value
Sales	No equal variances	45.476	0.000	4.471	138.785	.000

Grouping variable: Employee experience

6.7.2 T-test for equality of profit means by employee experience: Hypothesis 6.2 (H_{6.2})

To investigate the influence of employee experience on profit, the following hypotheses were developed:

- H₀: Ventures with greater worker experience in the current firm and those with lower worker experience in the current firm earn, on average, the same profit.
- H_{6.2}: Ventures with greater worker experience in the current firm earn on average more profit than those with less.

The comparison of profit means between enterprises grouped by workers' occupational experience (in table 6.27) shows that enterprises with more experienced workers in the firm have greater average profit (Tzs 29,506.35) than enterprises with less experienced workers (Tzs 10,743.09).

Table 6.27: Comparison of profit means for enterprises grouped by employee experience

Performance	Employee experience	N	Mean	Std. deviation	Std. error mean
Profit	Less	101	10743.0924	21238.86292	2113.34585
	Greater	99	29506.3512	36083.25399	3626.50348

Table 6.28 (page 218) shows the t-test for equality of profit means of enterprises grouped by worker experience in the surveyed firms. It shows that the p-value for Levene's test was less than 0.05 ($p = 0.000$). The t-test therefore assumed group variances are not equal. The table also indicates that there was a significant difference in average profit between enterprises with more experienced employees in the same firm and those with less ($t = 4.470$, $p = 0.000$). It could be suggested that enterprises with more experienced

workers are likely to gain a greater amount of profit than those with less worker experience.

Table 6.28: T-test for equality of profit means by employee experience

Performance	Assumption	Levene's test for equality of variances		t-test for equality of means		
		F	p-value	t	df	p-value
Profit	No equal variances	32.5	0.000	4.470	158.005	.000

Grouping variable: Employee experience

6.8 Proposition 7: The influence of employee education on venture performance (page 136)

Owner-managers were asked about the number of employees and their respective years of schooling. As earlier stated (section 5.4.2, page 178), the surveyed employees had, on average, 8.2 years of education.

Since primary education in Tanzania takes 7 years, and primary school leavers are considered to have inadequate knowledge and skills to be engage in the SMME sector, the research established a cut-off point of 7.00 years. Therefore enterprises with employee average years of schooling laying between 1.0 and 7.0 years were considered to have poorly-educated employees, while those with an average schooling of between 7.1 and 14 years were considered to have fairly well-educated employees. This classification resulted in 49.5% of the sample being identified as having uneducated employees, and 50.5% having well educated employees.

Since the data for employee education, sales, and profit were in interval and ratio scales, the t-test for equality of means was used. Bryman and Crammer (1999:136) strongly emphasise the use of this technique to compare the difference between two groups when

data are in interval or ratio scales. The next subsection discusses the test of equality of means for sales and profit.

6.8.1 T-test for equality of sales means by employee education: Hypothesis 7.1 ($H_{7.1}$)

To examine the influence of employee education on sales, the following null and alternative hypotheses were formulated:

- H_0 : Ventures with well-educated and those with poorly educated employees have equal average sales.
- $H_{7.1}$: Ventures with well-educated employees have greater sales-means than those with poorly educated employees.

Table 6.29 shows a greater sales-mean (Tzs 86,864.26) for ventures with educated employees, and a smaller sales mean (Tzs 35,556.75) for ventures with poorly educated employees.

Table 6.29: Comparison of group sales-means by employee education

Performance	Employee education	N	Mean	Std. deviation	Std. error mean
Sales	Poorly educated	99	35556.75	47269.86	4750.799
	Well-educated	101	86864.26	118390.5	11780.29

Table 6.30 (page 220) shows a significant difference in average sales between ventures with well educated and with poorly educated employees ($t = 4.039$, $p = 0.000$). In this test, equality of variances was not assumed, since the p-value from Levene's test was less than 0.05 ($p = 0.000$). The results suggest that ventures with well-educated employees are likely to have, on average, more sales than those with poorly educated employees.

Table 6.30: T-test for equality of sales-means by employee education

Performance	Assumption	Levene's test for equality of variances		T-test for equality of means		
		F	p-value	t	df	p-value
Sales	No equal variances	52.129	0.000	4.039	131.620	.000

Grouping variable: Employee education

6.8.2 T-test for equality of profit means by employee education: Hypothesis 7.2 (H_{7.2})

To explore on the influence of employee education on profits, Proposition 7 (P₇) (in section 4.2.6, page 139) can be restated as follows:

- H₀: Ventures, regardless of employee education, have, on average, equal profits.
- H_{7.2}: Ventures with well educated employees earn on average greater profit than those with poorly educated employees

Ventures with well-educated employees were found to have a greater average profit (about Tzs 28,000.00) than those with poorly educated employees (about Tzs 12,000.00) (in table 6.31).

Table 6.31: Comparison of group profit means by employee education

Performance	Employee education	N	Mean	Std. deviation	Std. error mean
Profit	Poorly-educated	99	11915.90	17096.59	1718.2726
	Well-educated	101	27985.21	38568.33	3837.6928

The t-test for equality of means (table 6.32, page 221) revealed a significant difference in the average profit between the firms with different levels of employee education.

Table 6.32 shows the results of the t-test for equality of profit means, in which the p-value was less than 0.05 ($t = 3.822$, $p = 0.000$), hence, the null hypothesis was rejected. With these results, one can conclude that firms with more educated employees are likely to have, on average, more profit. Since the p-value from Levene's test was less than 0.05 ($p\text{-value} = 0.000$), the t-test assumed inequality of variances.

Table 6.32: T-test for equality of profit-means by employee education.

Performance	Assumption	Levene's test for equality of variances		t-test for equality of means		
		F	p-value	t	df	p-value
Profit	No equal variances	41.705	0.000	3.822	138.435	.000

Grouping variable: Employee education

6.9 The influence of employee training on venture performance: Proposition 8 (page 137)

Entrepreneurs were asked how many employees attended training during the period 1997 to 2001. The results show that on average, two employees from the surveyed ventures had attended training. However, in 80 ventures no employee had attended training between 1997 and 2001, which means that 120 ventures have at least one employee who attended training between 1997 and 2001.

To investigate the impact of employee training on the performance in the surveyed firms, the sample was classified into two parts - ventures without an employee who attended training were considered 'ventures with untrained employees', while, those with at least one employee who attended training were considered as having 'trained employees'.

A test for equality of performance means was undertaken between ventures with trained employees and ventures with untrained workers, with respect to sales and profit.

6.9.1 T-test for equality of sales-means by employee training: Hypothesis 8.1 ($H_{8.1}$).

Proposition P_8 (in section 4.2.6, page 140) can be restated in terms of the following null and alternative hypotheses:

- H_0 : Ventures with trained employees and those with untrained employees have equal sales.
- $H_{8.1}$: Ventures with trained employees have greater sales than ventures with untrained employees

Table 6.33 shows the initial comparison of sales-means between ventures that were grouped by employee training. It shows that firms with trained employees have greater average sales (about Tzs 75,500.00) than firms with untrained workers (about Tzs 40,000.00).

Table 6.33: Comparison of sales-means by employee training.

Performance	Employee training	N	Mean	Std. deviation	Std. error mean
Sales	Untrained	80	40418.99	64672.34	7230.58
	Trained	120	75499.08	107011.70	9768.78

Table 6.34 (page 223) shows the t-test for equality of sales-means. Prior to carrying out a t-test for equality of means, an assumption must be made regarding the equality of variances. In this case, variances were assumed not equal, because the p-value from Levene's test was less than 0.05 ($p = 0.000$).

Table 6.34: T-test for equality of sales-means by employee training

Performance	Assumption	Levene's test for equality of variances		t-test for equality of means		
		F	p-value	t	df	p-value
Sales	No equal variances	174.42	0.000	2.886	196.33	0.004

Grouping variable: Employee training

The table (6.34) also indicates that there was a significant difference in average sales between ventures with trained employees and that of their counterparts with untrained employees ($t = 2.886$, $p = 0.004$). With the results in tables 6.33 and 6.34, it can be concluded that ventures with trained employees are likely to have more sales than those with untrained workers.

6.9.2 T-test for equality of profit means by employee training: Hypothesis 8.2 ($H_{8.2}$).

Proposition P_8 (in section 4.2.6, page 140) can be restated in terms of the following presumptions:

- H_0 : Ventures with trained employees and those with untrained employees have equal profit figures.
- $H_{8.2}$: Ventures with trained employees have greater average profit than those with untrained employees.

Table 6.35 (page 224) shows the comparison of profit means between ventures with trained workers and ventures with untrained employees. The table indicates that, on average, ventures with trained employees earn more profit (about Tzs 25,000.00) than those with untrained employees (about Tzs 12,000.00).

Table 6.35: Comparison of profit means by employee training.

Performance	Employee training	N	Mean	Std. deviation	Std. error mean
Profit	Untrained	80	12031.8	18584.40	2077.79
	Trained	120	25363.6	36031.02	3289.16

Table 6.36 shows a significant difference in profit means between ventures with trained workers and their counterparts with untrained employees ($t = 3.427$, $p = 0.001$). It also indicates that the p-value equals 0.000 (from Levene's test). As a result, variances were assumed not equal in the t-test. The comparison of means (in table 6.35) and the t-test results (in table 6.36) suggest that ventures with trained employees are likely to earn significantly more profit than their counterparts with untrained employees.

Table 6.36: T-test for equality of group means by employee training

Performance	Assumption	Levene's test for equality of variances		t-test for equality of means		
		F	P	t	Df	P (2-tailed)
Profit	Unequal variances	22.987	0.000	3.427	187.86	0.001

Grouping variable: Employee training

6.10 Secondary propositions (Human capital and conduct of business)

Although the study seeks to examine whether human capital influences enterprise performance, some human capital elements were found to be associated with some kind of '**conduct of business**'. By **conduct of business** the study refers to recruitment practices, entrepreneur attending of training, employee exposure to training, keeping of business records, owning of another business, and access to finance from banks. In an attempt to answer the secondary question, the following propositions were examined.

6.10.1 The influence of entrepreneur education on conduct of business: Secondary proposition 1 (page 137).

In the attempt to answer the first secondary research question (Is there a distinctive difference between the conduct of business of educated entrepreneurs and that of their less educated counterparts?), the following examinations were carried out.

6.10.1.1 The influence of entrepreneur education on attending of off-the-job training: Secondary hypothesis 1.1 (SP_{1.1})

To investigate the influence of entrepreneur education on attending of off-the-job training, the following hypotheses were formulated:

- H_0 : Educated and uneducated entrepreneurs are equally likely to attend off-the-job training.
- $SH_{1.1}$: Entrepreneurs with more education are more likely to attend off-the-job training programs than less educated entrepreneurs.

An initial investigation was carried out to test the association between entrepreneur education and their attending of off-the-job training. Table 6.37 (page 226) shows that most of educated entrepreneurs had attended off-the-job training, as opposed to their uneducated counterparts. About 71% of the entrepreneurs who had attended off-the-job training had a higher education. Of the 141 who had not attended off-the-job training, 55% were uneducated. The chi-square test results show that there is a significant association between entrepreneur education and attending of off-the-job training ($X^2 = 11.718$, $df = 1$, $p = 0.001$). Findings in a study of owners of small-sized retail outlets in Northern Spain showed that entrepreneurs with secondary level education and above are more likely to attend training programs, relative to those with primary level education (Barcala *et al*, 1999:350).

Table 6.37: Distribution of entrepreneur education by attending of off-the-job training

Off-the-job training	Description	Lower education	Higher education	Total
Attended	Count (%)	17 (28.8)	42 (71.2)	59 (100)
Not attended	Count (%)	78 (55.3)	63 (44.7)	141 (100)
Total	Count (%)	95 (47.5)	105 (52.5)	200 (100)

$$X^2 = 11.718, df = 1, p = 0.001$$

Prior to carrying out the hypothesis test for $SH_{1,1}$, a normality test was carried out to help in choosing the appropriate technique to use.

6.10.1.1(i) Normality test

Table 6.38 shows the normality test results for the Shapiro Wilk's normality test. The data on entrepreneur education and entrepreneur attending of off-the-job training are found to be different from a normal distribution (p -values < 0.05). As such, the non-parametric Mann-Whitney U-test was considered to be more appropriate for testing this secondary hypothesis.

Table 6.38: Shapiro-Wilk's normality test

Variable	Group	Statistic	df.	P
Entrepreneur education	Lower	.841	95	.000
	Higher	.957	105	.002
Off-the-job training	Not attended	.465	95	.000
	Attended	.622	105	.000

Table 6.39 (page 227) shows that the average score for attending off-the-job training for educated entrepreneurs is 90, while the uneducated group had an average score of about 112, which is greater than that of their educated counterparts. In the survey questionnaire, answers of respondents who have attended off-the-job training were coded one (1),

and those who did not attend any off-the-job training were coded two (2). Therefore, a smaller mean score implies that most of educated entrepreneurs have attended off-the-job training compared to uneducated entrepreneurs.

Table 6.39: Comparison of rank means for attending of off-the-job training by entrepreneur education

Entrepreneur education	N	Mean score	Sum of scores
Uneducated	95	112.11	10650.00
Educated	105	90.00	9450.00
Total	200		

Results of the Mann-Whitney U test (in table 6.40) showed the calculated p-value for attending or not attending of off-the-job training to be 0.001, with a z-statistic of 3.415. Therefore, the null hypothesis above is rejected. It can thus be argued that educated entrepreneurs are more likely to attend off-the-job training than their uneducated counterparts.

Table 6.40: Mann-Whitney U test for attending of off-the-job training

Description	Attending of off-the-job training
Mann-Whitney U	3885.00
Wilcoxon W	9450.00
Z	3.415
p-value, (2-tailed)	0.001

Grouping variable: Entrepreneur education

6.10.1.2 The influence of entrepreneur education on hiring of employees

Seven years are equivalent to primary level education in Tanzania. Ventures whose employee average years of schooling were between 1.0 and 7.0 years were considered to have uneducated employees, while those with average years of schooling between 7.1

and 14 were considered to have educated employees. This classification resulted in 49.5% of the sample being identified as having uneducated employees and 50.5 % having educated employees.

- H_0 : Educated entrepreneurs and uneducated entrepreneurs recruit equally qualified personnel.
- $SH_{1,2}$: Educated entrepreneurs are more likely to hire more educated employees than their uneducated counterparts.

Table 6.41 shows that 72.7% of uneducated employees worked with uneducated entrepreneurs, while 77.2% of educated employees worked with educated entrepreneurs. The chi-square test results show a significant association between entrepreneur education and quality of human capital they hired ($X^2 = 50.030$, $df = 1$, $p = 0.000$). Educated entrepreneurs tend to employ workers that are educated, while uneducated entrepreneurs employ uneducated workers.

Table 6.41: Distribution of employee education by entrepreneur education

Employee education	Description	Uneducated entrepreneurs	Educated entrepreneurs	Total
Uneducated	Count (%)	72(72.7)	27(27.3)	99(100)
Educated	Count (%)	23(22.8)	78(77.2)	101(100)
Total	Count (%)	95(47.5)	105(52.5)	200(100)

$$X^2 = 50.030, df = 1, p = 0.000$$

Table 6.42 (page 229) shows that the mean score employee education for educated entrepreneurs is about 124. Uneducated entrepreneurs had an average of about 74, which is much less than that of their educated counterparts. Since employee education was categorised into uneducated (1) and educated (2), the greater mean rank suggests that ventures run by educated entrepreneurs had educated workers.

Table 6.42: Comparison of employee education rank means by entrepreneur education

Entrepreneur education	N	Mean score	Sum of scores
Uneducated	95	74.21	7050.00
Educated	105	124.29	13050.00
Total	200		

Table 6.43 shows the results of the Mann-Whitney U test for comparison of employee education by entrepreneur education. Since the calculated p-value is less than 0.05 ($p = 0.000$, $Z\text{-statistic} = 7.055$), the null hypothesis for $SH_{1,2}$ is rejected. It can therefore be argued that the differences in employee education mean scores between educated and uneducated entrepreneurs were statistically significant at the 0.05 level. It can be concluded that educated entrepreneurs tend to be selective in hiring; they are likely to hire more educated workers.

Table 6.43: Mann-Whitney U test for $SH_{1,2}$

Description	Employee education
Mann-Whitney U	2490.00
Wilcoxon W	7050.00
Z	7.055
p-value, (2-tailed)	0.000

Grouping variable: Entrepreneur education

6.10.1.3 T-test for equality of number of record-means by entrepreneur education: Secondary hypothesis 1.3.

The underlying presumption is that an educated entrepreneur understands the importance of keeping records, and thus has the ability to keep a greater set of business records than his uneducated counterparts. Keeping records is also a tool of financial management that should assist the entrepreneur in keeping track of venture performance in terms of sales,

profit, and investment. As sales and profit increase, one might have more scope to employ additional labour, while the opposite could demand corrective measures. To answer the first secondary research question, the null and alternative hypotheses for SP₁ (in section 4.2.7 page 137) were stated as follows:

- H₀: Educated and uneducated entrepreneurs both keep an equal number of business records.
- SH_{1,3}: Educated entrepreneurs keep more business records than uneducated entrepreneurs.

Some differences were found between the number of business records kept by entrepreneurs with a low education and those with a high education. The more educated entrepreneurs, on average, tend to keep more business records (mean = 3.2 records) than their less educated counterparts (mean = 2.2 records) (in table 6.44). The records commonly kept by entrepreneurs were on sales, purchases, credit, payroll, expenses, and profit.

Table 6.44: Comparison of mean number of records kept by entrepreneur education

Conduct	Education	N	Mean	Std. deviation	Std. error mean
Number of Records	Uneducated	95	2.2947	.78379	.08042
	Educated	105	3.2381	1.28993	.12588

Table 6.45 (page 231) shows the t-test for equality of performance means of the two independent groups mentioned above. For the data used in this study, equal variances were not assumed, since the p-value from Levene's test was found to be less than 0.05 (p = 0.001).

Table 6.45: T-test for equality of number of records kept-means by entrepreneur education

Conduct	Assumption	Levene's test		t-test for equality of means		
		F	p	t	df	p(2-tailed)
Number of records kept	Unequal variances	11.622	.001	6.315	174.118	0.000

Grouping variable: Entrepreneur education

The right side of table 6.45 shows the t-test for equality of means, assuming variances are not equal. Since the p-value for the t-test is less than 0.05 ($t = 6.315$, $p = 0.000$), one can conclude that educated entrepreneurs are likely to keep more business records than their uneducated counterparts.

6.10.2 The influence of entrepreneur training on conduct of business: Secondary proposition 2 (page 138)

The second secondary research question is 'Is there a significant difference in the conduct of business between entrepreneurs who have attended long-term training and that of those who have not?'. To examine the impact of entrepreneur training on the conduct of business, the following tests were carried out.

6.10.2.1 The influence of entrepreneur training on owning another business (SH_{2.1})

- H_0 : Entrepreneurs who have attended training and those who have not are equally likely to own another business.
- SH_{2.1}: Entrepreneurs who have attended training are more likely to own another business than are their counterparts who have not attended training.

Table 6.46 (page 232) shows that of the 95 who have attended training, 30 entrepreneurs owned more than one business. Another 15 also owned another business, though they never attended any training. The chi-square indicates that a significant association exists

between entrepreneur training and owning more than one business ($\chi^2 = 8.554$, $df = 1$, $p = 0.003$). From these results, one can conclude that trained entrepreneurs are more likely to own another business than their untrained counterparts.

Table 6.46: Entrepreneur training by owning another business

	Own another business		Total
	Yes	No	
Entrepreneur training			
Attended	30	65	95
Not attended	15	90	105
Total	45	155	200

$$\chi^2 = 8.554, df = 1, p = 0.003$$

Prior to testing of hypothesis $H_{2.1}$ above, a normality test was carried out to determine the appropriate technique to be used.

6.10.2.1(i) Normality test

Table 6.47 shows the Shapiro–Wilk test of normality for the entrepreneurs’ attending training and owning another business. The p – values for each variable were found to be less than 0.05, showing that the test variables do not follow a normal distribution. In this case, the Mann-Whitney U-test was appropriate for testing hypothesis $SH_{2.1}$.

Table 6.47: Shapiro-Wilk’s normality test for attending training and owning another business

Conduct	Entrepreneur training	Statistic	df	p-value
Own another business	Attended	.585	95	.000
	Not attended	.416	105	.000

6.10.2.1(ii) Mann-Whitney U-test for secondary hypothesis SH_{2.1}

Table 6.48 shows that the average score for owning another business was about 91 for entrepreneurs who have attended training, and about 108 for those who have not. In the questionnaire, owning another business was coded 'one' (1), and not owning 'two' (2). The greater mean score (108.71) suggests that entrepreneurs who have not attended training are less likely to own another business.

Table 6.48: Comparison of scores for owning another business by entrepreneur training

Conduct	Entrepreneur training	N	Mean score	Sum of scores
Own another business	Attended	95	91.42	8685.00
	Not attended	105	108.71	11415.0

Results of the test (in table 6.49) were not significant (Mann-Whitney = 4125, $p = 0.004$), and the null hypothesis above was rejected. It can be concluded that entrepreneurs who have attended training are more likely to own more than one business. Of the surveyed entrepreneurs, only 45 owned another business, and of this group, 66% have attended training. This also reflects that trained entrepreneurs tend to display more entrepreneurial tendencies relative to their untrained counterparts, other things remaining equal.

Table 6.49: Mann-Whitney U-test for secondary hypothesis SH_{2.1}

Description	Own another business
Mann-Whitney U	4125.000
Wilcoxon W	8685.000
Z	2.917
p-value	0.004

Grouping variable: Entrepreneur training

6.10.2.2 The influence of entrepreneur training on hiring employees (SH_{2.2})

Table 6.50 shows that 64 entrepreneurs who have attended training have educated employees, and 68 who have not attended training have uneducated employees. Chi-square results indicate that there is a significant association between entrepreneur attending training and the education of recruited workers ($X^2 = 20.598$, $df = 1$, $p = 0.000$). Accordingly, entrepreneurs who have been exposed to training tend to hire more educated workers compared to their untrained counterparts.

Table 6.50: Entrepreneur training by employee education

	Employee education		Total
	Uneducated	Educated	
Entrepreneur training			
Attended	31	64	95
Not attended	68	37	105
Total	99	101	200

$$X^2 = 20.598, df = 1, p = 0.000$$

6.10.2.3 T-test for number of business records kept means by Entrepreneur training (SH_{2.3})

To examine the impact of entrepreneur training on the number of business records kept, the following hypotheses can be formulated:

- H_0 : There is no significant difference in the business records kept between entrepreneurs who have attended training and those who have not.
- SH_{2.3}: Entrepreneurs who have attended training keep more business records than those who have not.

Table 6.51 shows the group means for number of records kept between entrepreneurs who have attended training and those who have not. Those who have attended training have a slightly greater group mean (mean = 3.00 records) than those who have not (mean = 2.5 records).

Table 6.51: Number of business record kept means by entrepreneur training

Conduct	Entrepreneur training	N	Mean	Std. Deviation
Number of Records	Attended	95	3.0737	1.20497
	Not attended	105	2.5333	1.09252

Table 6.52 shows the t-test results for number of business records kept by entrepreneurs' grouped by attending of training. It shows that the p-value for Levene's test was greater than 0.05. Therefore, the t-test assumed equality of group variances. The p-value for the t-test of the two groups was less than 0.05 ($t = 3.326$, $p = 0.001$), indicating that there was a significant difference in the number of business records kept by entrepreneurs who attended training and those who had not. It could be argued that entrepreneurs who have attended training are more likely to keep more business records than those who have not. This might reflect that trained entrepreneurs are perhaps more familiar with book-keeping as a tool of financial management than their less educated counterparts.

Table 6.52: T-test for hypothesis SH_{2.3} (number of records)

Conduct	Assumption	Levene's test for equality of variances		t-test for equality of means		
		F	p-value	t	Df	p-value
Number of Record	Equal variances	.105	.746	3.326	198	0.001

Grouping variable: Entrepreneur training

6. 10.3 The influence of employee training on conduct of business: Secondary proposition 3 (page 135).

The third secondary research question was 'Is there a significant difference in the conduct of business between SMMVs with trained employees and that of those with untrained employees?' The following tests were carried out.

6.10.3.1 The influence of employee training on frequency of access to finance from banks (SH_{3.1})

The business conduct variable in this case was the frequency of access to finance from banks.

- H₀: Ventures with trained employees and those with untrained employees have the same frequency of access to finance from banks.
- SH_{3.1}: SMMVs with trained employees have greater frequency of access to finance from banks than ventures with untrained employees.

Table 6.53 (page 237) shows that of the entrepreneurs who “frequently” have access to bank loans (22), 59% have trained employees, and of those who “sometimes” have access to finance from banks (93), almost 70% have trained employees. Conversely, of the entrepreneurs who have “never” accessed a bank loan (85), about 51% have untrained employees. The chi-square test indicates that there is a significant association between employee training and frequency of access to finance from banks ($X^2 = 7.77$, $df = 2$, $p = 0.021$).

Table 6.53: Cross-tabulation between employee training and frequency of access to finance from banks

Access to Finance		Employee training		Total
		Untrained	Trained	
Frequently	Count (%)	9 (40.9%)	13 (59.1%)	22 (100%)
Sometimes	Count (%)	28 (30.1%)	65 (69.9%)	93 (100%)
Never	Count (%)	43 (50.6%)	42 (49.4%)	85 (100%)
Total	Count (%)	80 (40%)	120 (60%)	200 (100%)

$$X^2 = 7.77, df = 2, p = 0.021$$

6.10.3.1(i) Shapiro-Wilk's Normality test

A normality test was carried out to justify the use of the Mann-Whitney test. Table 6.54 shows that employee training and entrepreneur access to finance from banks were significantly different from a normal distribution ($p = 0.000$), and since the data was also categorical, it was appropriate to use the Mann-Whitney test.

Table 6.54: Shapiro-Wilk's normality test

Conduct	Employee training	Statistic	df	p-value
Access to finance from banks	Untrained	.737	80	.000
	Trained	.774	120	.000

6.10.3.1(ii) Mann-Whitney U-test (Access to finance from banks)

Table 6.55 (page 238) shows that ventures with untrained employees have a greater mean score (110.37) than ventures with trained employees (93.92). Answers to the question 'How well have you been able to access to finance from banks for business expansion?' were coded 'one' (1) for 'always', 'two' (2) for 'frequently', and 'three' (3) for 'never'. A smaller mean score (93.92) implies more ventures with trained employees always have access to finance from banks relative to those with untrained employees.

Table 6.55: Comparison of mean scores of frequency of access to bank loans by employee training

Conduct	Employee training	N	Mean score	Sum of scores
Access to loans	Untrained	80	110.37	8829.50
	Trained	120	93.92	11270.50

The Mann-Whitney U-test for equality of mean scores was carried out. Table 6.56 presents a significant difference in access to finance from banks between ventures with trained employees and those with untrained employees (Mann-Whitney = 4010, $p = 0.03$). With these results, one can conclude that firms with trained employees are likely to access finance from banks more frequently than their counterparts with untrained staff. It can be argued that SMMVs with trained workers have in-house capabilities to decipher information, and to disseminate relevant information to financial institutions.

Table 6.56: Mann-Whitney U-test for hypothesis SH_{3,1} (access to finance from banks)

Description	Access to finance from bank
Mann-Whitney U	4010.500
Wilcoxon W	11270.500
Z	2.172
p (2-tailed)	.030

Grouping variable: Employee training

6.10.3.2 Employee training and number of business records kept (SH_{3,2})

To compare the number of business records kept in SMMVs that are grouped by employee training, the null and alternative hypotheses for SP₃ (in section 4.2.7 page 138) can be formulated as follows:

- H_0 : The group means for number of records kept between ventures with trained and those with untrained employee are equal.
- $SH_{3,2}$: SMMVs with trained employees have a larger mean number of records kept than ventures with untrained employees.

Table 6.57 shows that the mean number of records for ventures with trained employees was greater (2.9) than that of those with untrained employees (2.5).

Table 6.57: Comparison of means number of records kept by employee training

Conduct	Employee training	N	Mean	Std. deviation	Std. error mean
Number of records Kept	Untrained	80	2.537	1.07849	.12058
	Trained	120	2.958	1.21196	.11064

Table 6.58 shows the t-test for equality of group means. It revealed that the difference of group means was significant ($t = 2.512$, $p = 0.013$). Therefore, the null hypothesis above is rejected, and one can conclude that ventures with trained workers are likely to keep a larger number of records. The reverse is also true. In this test, equal variances were assumed, since the p-value in Levene's test for equality of variances was greater than 0.05 ($p = 0.929$). As stated earlier, the commonly kept business records are sales, purchases, credit, payroll, expenses, and profit.

Table 6.58: T-Test for equality of mean number of records kept in ventures grouped by employee training

Conduct of business	Assumption	Levene's test for equality of variances		t-test for equality of means		
		F	p-value	t	df	p-value
Number of records kept	Equal variance	.008	0.929	2.512	198	.013

Grouping variable: Employee training

6.10.4 The impact of employee education on conduct of business: Secondary proposition 4 (page 135).

To answer the fourth secondary research question (Is there a significant difference in the conduct of business between SMMVs with more educated employees and those with poorly educated employees?), a t-test was carried out for the number of business records the surveyed ventures kept.

6.10.4.1 T-test for equality of number of business records kept means by employee education: Secondary hypothesis 4 (SH₄)

In relation to SP₄ (page 138), the following null and alternative hypotheses were formulated to test the influence of employee education on the number of records a business keeps:

- H₀: Ventures with educated employees and those with uneducated employees keep the same number of business records.
- SH₄: SMMVs with educated employees keep more business records than those with uneducated employees.

The comparison of group means (in table 6.59) shows that ventures with educated employees keep more business records (3.07) than their less educated counterparts who kept an average of about 2.5 records.

Table 6.59: Comparison of group mean number of records by employee education

Conduct of business	Employee education	N	Mean	Std. deviation	Std. error mean
Number of records kept	Uneducated	99	2.494	1.02394	.10291
	Educated	101	3.079	1.24646	.12403

Table 6.60 displays a p-value for Levene's test that is greater than 0.05 ($p = 0.425$), therefore the test for equality of means assumed equality of group variances. Table 6.59 also shows that there was a significant difference between the group-number of record kept means ($t = 3.618$, $p = 0.000$). It can be suggested that ventures with educated employees and entrepreneurs are likely to keep more business records than those with less educated employees or entrepreneurs.

Table 6.60: T-test for equality of mean number of records by employee education

Conduct of business	Assumption	Levene's test for equality of variances		t-test for equality of means		
		F	p-value	t	df	p-value
Number of records kept	Equal variance	.638	0.425	3.618	198	.000

Grouping variable: Employee education

6.10.5 Jobs created by activity (ANOVA): Secondary hypothesis 5 (SH₅ page 138)

As stated earlier, the surveyed entrepreneurs were categorised into six activities: woodworking, tailoring and sewing, edible food processing, animal food processing, metalwork, and leatherwork. It is interesting to compare performance by activity, and in this respect, the parametric analysis of variance (ANOVA) was used to make a comparison of jobs created among the five activities. In attempt to answer the fifth secondary research question, the following hypotheses were formulated for testing:

- H_0 : The average number of jobs created by entrepreneurs in each group of activity is equal.
- SH_5 : The average number of jobs created by entrepreneurs in each group of activity is significantly different.

Table 6.61 shows the mean number jobs created (from 1997 to 2001) for each activity. Edible food processing created an average of about 8 jobs, leatherwork about 6, animal food processing about 3, woodworking about 3, tailoring and sewing about 2, and metalwork 0.7647. The sample mean was 3.95 jobs. The edible food-processing sector is the greatest job-creator relative to others.

Table 6.61: Mean jobs created 1997 to 2001 by activity

Activity	N	Mean	Std. deviation	Std. error
Woodworking	43	3.3419	3.27547	.49950
Tailoring/sewing	33	2.0606	3.29715	.57396
Edible food processing	43	8.4884	15.10971	2.30421
Animal food processing	6	3.6667	4.80278	1.96073
Metalwork	51	0.7647	2.00587	.28088
Leatherwork	24	6.1667	12.94022	2.64141
Total	200	3.9300	9.02844	0.63841

6.10.5.1(i) Multiple comparisons of job created-means (Tukey's test)

Table 6.62 (page 243) presents Tukey's test for multiple comparisons of jobs created by each group of activity. Tukey's test indicates that there is a significant difference in the average number of jobs created between:

- Tailoring/sewing and edible food processing ($X_{ij} = 6.4278$; $p = 0.019$) and,
- Metalwork and edible food processing ($X_{ij} = 7.7237$; $p = 0.000$).

The difference between all other pairs, such as animal food processing and all other activities, leatherwork and other activities, and woodworking and all other activities was not significant at the 0.05 level.

Table 6.62: Multiple comparisons of job created-means (2001 to 1997) by activity

Activities (i)	Activities (j)	Mean difference (i-j)	Std. error	p-value
Tailoring/sewing	Edible food processing	6.4278	2.00534	.019*
Metalwork	Edible food processing	7.7237	1.79398	.000*

* The mean difference is significant at the .05 level.

6.10.5.1(ii) Test for equality of jobs created by activity (One-way ANOVA)

Table 6.63 displays the ANOVA results of the test for equality of means in respect of jobs created by SMMVs grouped by activity. There was a significant difference in jobs created between activities [$F_{(194,5)} = 4.400$, $p = 0.001$]. Since the p-value is less than 0.05 ($p = 0.001$), the null hypothesis for SH_5 (in 6.10.5 page 138) was rejected and one can firmly conclude that the number of jobs created by the six activities (woodworking, tailoring and sewing, edible food processing, animal food processing, metalwork, and leatherwork) are significantly different.

Table 6.63: Test for equality of jobs created (2001 to 1997) by activity (ANOVA)

Description	Sum of squares	df	Mean square	F	p
Between Groups	1650.429	5	330.086	4.400	.001
Within Groups	14555.071	194	75.026		
Total	16205.500	199			

6.10.6 Jobs created by SMMV zonal location: Secondary hypothesis 6 (SH_6 page 138)

As stated earlier, the surveyed ventures were categorised into five zones, namely the Southern, Lake, Northern, Eastern, and Central zones. To test equality of jobs created by the zones, a one-way ANOVA was used. In order to carry out the test, the following hypotheses were formulated:

- H_0 : The average number of jobs created by SMMVs in each zonal location is equal.
- SH_6 : The average number of jobs created by SMMVs in each zonal location is significantly different.

Table 6.64 shows that ventures in the Lake zone, on average, have created more jobs (mean = about 5 jobs) than other zones. The Lake zone is followed by the Southern zone (mean = about 4 jobs), Northern zone (mean = about 4 jobs), and Eastern zone (mean = about 4 jobs). The Central zone had the smallest number of jobs created (mean = 1.881), with the lowest standard deviation (2.661).

Table 6.64: Jobs created (2001 to 1997) by zonal location

Zones	N	Mean	Std. deviation	Std. Error
Southern	39	5.0769	11.08433	1.77491
Lake	30	5.1333	10.76948	1.96623
Northern	32	4.0625	8.94765	1.58174
Eastern	57	4.0175	9.57021	1.26761
Central	42	1.8810	2.66140	.41066
Total	200	3.9500	9.02412	.63810

Applying Tukey's test for multiple comparisons of means, however, there appears to be no significant difference in the average number of jobs created between zones, taken two at a time.

Similarly, the ANOVA test result (in table 6.65 page 245) shows a p-value that is greater than 0.05, indicating that the zonal differences in number of jobs created are not significant [$F_{(195,4)} = 0.832$, $p = 0.506$]. Hence, the null hypothesis for SH_6 was accepted, and one can conclude that statistically, there seems to be no significant differences in the

mean number of jobs created by SMMVs grouped by zonal locations, although such a difference appears to exist in case of the firms grouped by activities.

Table 6.65: One-way ANOVA (Jobs created 2001-1997)

Description	Sum of squares	df	Mean square	F	p-value
Between Groups	272.002	4	68.00	.832	.506
Within Groups	15933.498	195	81.710		
Total	16205.500	199			

6.11 Venture productivity

Table 6.66 (page 246) shows that human capital can have some influence on venture productivity. In this case, productivity was calculated as the ratio between Output and Labour. Output is proxied by the value of sales, while labour is the number of employees for calendar year 2001. As mentioned earlier (on page 120), labour productivity of a firm reflects efficiency in its utilisation of labour.

Productivity (output/labour) was investigated as ventures were grouped in terms of the following human capital element: entrepreneur education, entrepreneur training, employee education, and by employee experience. These indicated a statistically significant difference in productivity between ventures (appendix 6.1, page 360). Table 6.66 (page 243) shows that ventures with more educated and trained entrepreneurs were found to be more productive (mean = Tzs 11,914.816 and Tzs 13,033.814 respectively) than their counterparts with less education and training (mean = Tzs 6,955.4872 and Tzs 6,415.3767 respectively). Similarly, ventures with more educated and experienced employees (mean = Tzs 12,813.617 and Tzs 13,589.96 respectively) were found to be more productive than those with less educated and experienced employees (mean = Tzs 6238.9051 and 5608.1278 respectively). These productivity differences were found to be statistically significant (appendix 6.1 pages 360).

Table 6.66: Summary of labour productivity by human capital

Grouping variable	N	Mean	Std. Deviation	Std. Error mean
Trained entrepreneur	95	13033.814	19921.91940	2043.9458
Entrepreneurs without training	105	6415.3767	9242.61304	901.98667
More educated employees	101	12813.617	19703.93655	1960.6150
Less educated employees	99	6238.9051	8683.99673	872.77451
More experienced employees	101	5608.1278	9107.82825	906.26278
Less experienced employees	99	13589.96	19403.23361	1950.0984
More educated entrepreneurs	105	11914.816	18607.20658	1815.8774
Less educated entrepreneurs	95	6955.4872	10887.03840	1116.9866

In this study, the impact of various measures of human capital on SMMV performance and conduct of business has been examined in the preceding sections, using mainly bivariate analyses. These look at one performance or one conduct variable and one human capital element at a time. It is necessary to go beyond the bivariate analysis, as this does not adequately explain causality. Hence, the multiple regression analysis technique is also used to determine whether human capital can predict performance. This technique looks at the relationship between two or more variables in a statistical model simultaneously, in which there is one dependent variable and the rest are independent or explanatory factors.

6.12 Fitting the multiple regression model

A model can be defined as a simplified representation of a phenomenon for a particular purpose, as seen from a given perspective. It could be a representation of reality or a set of generalisations and assumptions about the world. Kebede (2002:72) argues that models do not reflect a phenomenon in its entirety, they only use selected aspects of a phenomenon in their representation.

6.12.1 Parsimonious multiple regression model

To start with, the assumption is made that human capital can predict the performance of the enterprise. In this case, only one independent variable is selected for testing: 'Sales'. Therefore, sales were expected to be dependent on human capital factors such as entrepreneur nAch, education, training, and experience, and employee training, education, and experience. In this study, physical capital was also included, due to its relevance to businesses and significance in economic theory.

To answer the ninth research question, the following null and alternative hypotheses were formulated:

- H_0 : There is no functional relationship between human capital factors and sales/output.
- H_9 : There is a functional relationship between human capital and sales/output.

SPSS's backward linear regression approach was used to arrive at a model that 'best' explains enterprise performance. The method entails entering all the independent variables in the initial model (as set out on page 161), and then removing the 'weaker' ones in subsequent stages, according to certain criteria. The basic criterion is to retain the independent variable that has a high explanatory influence, and this is usually shown by a t-value that is statistically significant. Koop (2000: 88) argues that it a common practice to initially use as many explanatory variables as possible, and then discard those that are not statistically significant.

Table 6.67 (page 245) shows a summary of variables excluded in the process of selecting a regression that 'best' fits the model. Conversely, appendix 6.2 (page 361) shows the independent variables retained at each stage of model selection. Also, appendix 6.2 (page 361) shows that in the first model, p-values for the following variables were found not significant (greater than 0.05): entrepreneur education ($p = 0.416$), entrepreneur experience ($p = 0.870$), entrepreneur nAch ($p = 0.966$), and entrepreneur training ($p = 0.230$), while the remaining were found to be significant. In particular, physical capital (p

= 0.000), employee experience ($p = 0.000$), and employee education ($p = 0.003$) were found to be highly significant in the prediction of sales performance.

In the second model, the variable making the least contribution to sales and with the greatest p-value was excluded, [that was, entrepreneur nAch ($p = 0.966$, table 6.67)]. On the basis of the p-value, nAch was the weakest in terms of contribution to the model. In this second round, entrepreneur education ($p = 0.423$), entrepreneur experience ($p = 0.874$), and entrepreneur training ($p = 0.228$) were not significant (see appendix 6.2 page 361). Appendix 6.2 also shows the respective R-square, and adjusted R-square for each stage in the model selection.

Table 6.67: Summary of excluded variables in regression models

		Beta In	t	p	Collinearity Statistics
Model	Excluded variables				Tolerance
2	Entrepreneurs nAch	.003	.042	.966	.955
3	Entrepreneurs nAch	.003	.045	.964	.956
	Entrepreneur experience	.010	.159	.874	.896
4	Entrepreneur nAch	.001	.013	.989	.957
	Entrepreneurs experience	.002	.036	.971	.918
	Entrepreneur education	.060	.791	.430	.593
5	Entrepreneurs nAch	.007	.122	.903	.968
	Entrepreneur experience	.016	.270	.787	.949
	Entrepreneur education	.064	.846	.399	.594
	Entrepreneur training	.084	1.302	.194	.812

- Predictors in Model 2: (Constant), Entrepreneur training, Employee experience, Entrepreneur experience, Capital, Entrepreneur education, Employee training, Employee education.
- Predictors in Model 3: (Constant), Entrepreneur training, Employee experience, Capital, Entrepreneur education, Employee training, Employee education.

- Predictors in Model 4: (Constant), Entrepreneur training, Employee experience, Capital, Employee training, Employee education.
- Predictors in Model 5: (Constant), Employee experience, Capital, Employee training, Employee education.

Dependent Variable: Sales.

Entrepreneur experience was excluded in the third model. In this third round, entrepreneur education ($p = 0.43$), and entrepreneur training ($p = 0.194$) were not significant (see appendix 6.2 on page 361). However, physical capital ($p = 0.000$), employee education ($p = 0.002$), and employee experience ($p = 0.000$) were significantly contributing to sales performance. Employee training ($p = 0.057$ page 354) was almost significant.

Entrepreneur education ($p = 0.43$) and training ($p = 0.194$) were excluded in the fourth and fifth model respectively (page 354). On the basis of the significant contribution of the remaining independent variables, the fifth model was selected. Four variables were then found to be significant, namely: Capital, employee education, employee experience, and employee training. A summary of the parsimonious regression model, arrived at by using the backward elimination process, is presented on page 253. This best model has an adjusted R-square of .329 and an R-square of .343. This set of variables that constitute the parsimonious model is described in the following sections.

6.12.2 Description of the regression variables

In regression analyses, dependent and independent variables have to be appropriately defined and measured. This is considered in the following section. The key variables used in the regression models in this study are: sales, capital, employee education, employee experience in the current enterprise, and employee training. These variables are described below.

6.12.2.1 Sales

In the selected multiple regression model, sales is a dependent variable. The variable ‘sales’ is based on the response from the sample of 200 entrepreneurs to the question ‘Please indicate the annual sales of the enterprise as of the years 1997 to 2001’. Sales for each enterprise were added together for the 5-year period. To minimise the inflationary effect, actual sales values were deflated using appropriate deflators (in table 6.68) provided by the Bank of Tanzania (BoT). Hence, sales figures used in this study were at constant 1992 prices. The survey results show that average **real** sales were Tzs 61,467.50 and median **real** sales value was Tzs 21,400.88.

Table 6.68: GDP Deflators 1995-2001

Year	Deflator
1995	207.9
1996	246.3
1997	295.6
1999	340.4
1999	379.0
2000	402.8
2001	423.5

Source: Bank of Tanzania (2003)

6.12.2.2 Capital

Capital was considered one of the independent variables. Although physical capital is not strictly a human factor, the variable was included in the study due to its importance. Capital is a critical factor of production. Entrepreneurs provided the information in response to the question ‘When you started this business, how much capital investment did you start with (in Tzs)?’ As table 6.69 (page 251) shows, the mean amount of start-up

capital among the sampled SMMVs was Tzs 1,336,500.00, while of the surveyed ventures, 31 had a capital of Tzs 1,000,000.00.

Table 6.70 (on page 252) shows that there is a positive and significant correlation between sales for the period 1997 to 2001 and capital invested in the sampled SMMVs ($r = 0.421$ at 0.01 level). The results suggest that amount of start-up capital invested in ventures is positively correlated to the amount of sales, indicating that SMMVs with a larger amount of start-up capital are likely to experience higher sales.

Table 6.69: Central tendency statistics for independent variables

Description	Capital (in Tzs)	Employee education (yrs)	Employee experience in the firm (yrs)	Employee training (number)
N	200	200	200	200
Mean	1336500.0	8.2156	7.0326	2.3600
Median	2000000.0	8.1000	6.2500	2.0000
Mode	1000000.0	7.00	2.00	.00
Range	79950000.	12.90	29.00	19.00
Minimum	50000.00	1.10	1.00	.00
Maximum	80000000.	14.00	30.00	19.00

6.12.2.3 Employee education

Respondents were asked ‘What is the education level of the employees in the enterprise?’. From this information, years of schooling were estimated, and employee average years of schooling were calculated. Results in table 6.69 (page 251) shows that, the average years of employee schooling for the surveyed enterprises was 8.21. Table 6.70 (on page 252) shows a statistically significant correlation between sales for the period 1997 to 2001 and employee education at the time of interview ($r = 0.320$ at the

0.01 level). The correlation results suggest that enterprises with employees who have more years of schooling are likely to experience more sales than their uneducated counterparts.

Table 6.70: Pearson's Correlation matrix for sales and the independent variables

	Sales	Capital	Employee education	Employee training	Employee experience
Sales	1	.421**	.320**	.342**	.231**
P		.000	.000	.000	.001
Capital (in Tzs)		1	.206**	.450**	-.052
P			.003	.000	.464
Employee education			1	.129	-.178*
P				.070	.012
Employee training				1	.042
P					.557
Employee experience					1
N	200	200	200	200	200

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

6.12.2.4 Employee experience

Interviewees were asked 'For how long have the employees been working in this enterprise?'. From their answers, the employee average work experience in the present firm was calculated. As table 6.69 (on page 251) shows, the mean work experience of employees in the surveyed enterprises were 7.03 years. Table 6.70 shows that there was a statistically significant correlation between sales for the period 1997 to 2001 and employee experience in the present firm ($r = 0.231$ at the 0.01 level). The correlation

results suggest that enterprises with employees who have greater work experience in the firm are likely to experience more sales than their less experienced counterparts.

6.12.2.5 Employee training

Entrepreneurs were asked how many employees had attended off-the-job training or on-the-job training for the period 1997 to 2001. The numbers of employees who had attended off-the-job training and on-the-job training were added together to get the number of employees trained during the period of study. Results in table 6.69 (on page 251) show that on average, 2.36 employees were trained. However, in 66 enterprises no one had attended any kind of training. The highest number of trained employees was 19. Moreover, table 6.70 (on page 252) shows a positive and significant correlation between sales and the number of trained employees ($r = 0.342$, $p = 0.000$).

Applying the backward elimination procedure, four independent variables were found to significantly influence sales. These are capital, employee education, employee experience, and employee training. A multiple regression model to be fitted can be presented as follows:

$$\text{Sales} = B_0 + B_1 (\text{Capital}) + B_2 (\text{Employee education}) + B_3 (\text{Employee experience}) + B_4 (\text{Employee training}) + \text{Error term}$$

Where

B_0 is a constant

B_1 , B_2 , B_3 , and B_4 are coefficients. At this point, it is confirmed that the coefficients of each variable are positive (a summary of results on page 257).

The error term is referred to as the residual amount that the regression model has not been able to explain (Aaker *et al*, 2001:514).

6.12.3 Problems of multiple regression models

There are two major factors that tend to undermine the usefulness of a multiple regression model - multicollinearity and the interaction effect. Multicollinearity is the undesirable situation where some or all of the independent variables are strongly correlated and inter-dependent. Multicollinearity implies that the independent variables convey essentially the same information, i.e. the independent variables are mutually dependent, presenting some kind of overlap or redundancy among variables. When individual R-squared values for independent variables are high, then the tolerance ($1-R^2$) is small, and the Variance Inflation Factor (VIF) is high. The VIF is referred to as the reciprocal of the tolerance ($1/1 - R^2$). When this happens, the independent variables are said to be collinear, and the results display a multicollinearity problem. If multicollinearity exists in a model, then coefficients of the predictor variables may be unstable and may even have the wrong signs, even though R^2 may be high (Kennedy, 1994).

6.12.3.1 Test for multicollinearity

Multicollinearity can make interpreting the contribution of variables more difficult and cause a loss in power of the regression model. There are several techniques for testing multicollinearity, and one of them is inter-correlation between independent variables. The decision rule is to eliminate variables that have correlation coefficients greater than 0.9, or those which don't correlate with any other variable (Field, 2000:444).

Table 6.70 (on page 252) shows the correlation matrix for the independent variables. A positive correlation is found between employee education and employee training ($r = 0.129$), but this association is not significant. Further, no two independent variables had correlation coefficients that are greater than 0.9. A tentative conclusion can be made that there are no elements of collinearity amongst the independent variables.

Moreover, the Variance Inflation Factor (VIF) for the independent variables in the parsimonious model ranges between 1.0 and 1.29 (Table 6.73 on page 260). This also

indicates that multicollinearity is not a problem in the selected model. The decision rule is to assume the existence of collinearity if the VIF is, at most, 10 (Yu Chong-ho: 2003, Motulsky; 2002: 1).

6.12.3.2 Interaction effect

Multiple regression models are usually subject to the interaction effect of variables. Interactive terms could not be used, as the inclusion of interactive effects has a tendency to reduce the magnitude of the coefficients to insignificant levels. Moreover, the sample size used in this study was relatively small, and Bobko (1995:225) argues that a large sample size is required when using interactive terms. Similarly, increasing the sample size can reduce the impact of multicollinearity. Other ways of correcting multicollinearity are combining the variables, or dropping the less important variable (Motulsky; 2002: 1, Doran; 1989:106). This study did not examine any interaction effect. The selected model is evaluated in the following sections.

6.12.4 Coefficient of determination and residual analysis

The coefficient of multiple-determination (R-square) is a useful index in explaining the goodness of fit of the model. The coefficient of determination (R-square) shows the proportion of the dependent variable that is explained by the regression model (Doran, 1989:92; Edwards; 1985:44). It measures the variation explained by the model. Hence, an R-square value that is close to one represents a very good fit to the data, and the closer the value is to one, the better the model is.

Table 6.71 (page 256) shows an R-square value of 0.343, and an adjusted R-square value of 0.329 for the selected model. In the view of the researcher, the R-square was moderate. Doran (1989:86) argues that it is often difficult to get an R-square value greater than 30% from survey data on the behavior of economic units. He further argues that the size of R-square is not the only criterion for choosing a model.

Table 6.71: Model Summary (Multiple regression model)

Model	R	R-square	Adjusted R-square	Std. error of the estimate
1	.585	.343	.329	76821.79183

Predictors: (Constant), Employee experience, Capital (in Tzs), Employee education, and Employee training.

In choosing a model, signs of the estimated coefficients and the logic of the underlying assumptions are important as well. Therefore, the model was chosen, although it is able to explain only 32.9% of the variation in sales. The R-square value can further be tested for its significance.

Fleming and Nellis 1996:205) argue that testing for statistical significance of R-square involves a test of whether or not the coefficients of the predictors in the multiple regression model equal zero. Section 6.11.5 will cover the test for the coefficients of the model, and table 6.72 (on page 258) also shows the calculation of the F-statistic.

6.12.4.1 Residual variance

Related to R-square is the residual variance. The smaller the variability of the residual values around the regression line to the overall variability, the better is the prediction. 1 minus R-square is the variability of the residual value. Therefore, the variability of sales around the regression line is $(1.0 - 0.329)$, or 0.671. The model is reasonably good, since its four independent regressors jointly explain about 33% of the variability of sales (in terms of the adjusted R). About 67 % of variability of sales could not be explained. The smaller regression sum of squares and the larger residual sum of squares (in Table 6.72 page 258) also support the explanation above.

Also related to R-square is R, the square root of R-square. R shows the multiple correlation coefficient. The multiple correlation coefficient for the developed model is 58.5%, showing a positive association between sales and the independent variables.

6.12.5 Adequacy of the model

The analysis of variance was used to assess the adequacy of the selected model. ANOVA has two sources of variation: One is due to regression corresponding to the fitting of the four independent variables; employee experience, capital (in Tzs), employee education, and employees training ($df = 5$). The other is due to error with the sample size [$df = N - (k + 1) = 200 - (5 + 1) = 194$], where;

N = sample size

k = number of independent variables fitted in the model

The adequacy of the model is tested using the above four independent variables, each with their respective beta coefficients. To test the adequacy of the model, the following null hypothesis is formulated with respect to the coefficients (the selected independent variables):

$H_0: B_1 = B_2 = B_3 = B_4 = 0$ (under this null hypothesis 'at least one of the coefficients in the model equals to zero'; in other words, sales are presumed not to be linearly related to the independent variables). The alternative hypothesis for the above null hypothesis is;

$H_a: B_i \neq 0$ for one or more of the coefficients, $i = 1, 2, 3, \text{ or } 4$

The objective of testing the above hypothesis can be achieved by using the F-statistic. At a significance level of 5 %, the F-statistic is compared with the F-table value with 5 numerator and 194 denominator degrees of freedom. H_0 is rejected if F-statistic is greater than F-table value $(_{5,194})$ (van den Honert, 1997:137).

As table 6.72 (page 258) shows, the calculated F-statistic was greater (25.415) than the F-table value $(_{5,194})$ (2.26), and the table also shows that the p-value is less than 0.05 ($p = 0.000$). With these results, the null hypothesis (that at least one or all coefficients equals

zero) is rejected. On basis of the initial R-square, the adjusted R-square, and the F-statistic, one can conclude that the selected model above as a whole is significant, and that the four selected independent variables can adequately predict sales.

Table 6.72: ANOVA for the selected model

Model		Sum of squares	df	Mean square	F	p-value.
1	Regression	6.00E + 11	5	1.4999E + 11	25.415	.000
	Residual	1.15E + 12	194	5901587700		
	Total	1.75E + 12	199			

Predictors: (Constant), Employee experience, Capital, Employee education, and Employee training

Dependent variable: Sales

Individual coefficients may not be statistically significant, and it is therefore appropriate to test the significance of each of the individual explanatory variables. Draper and Smith (1985:26) argue that although F and t-tests usually give similar results if only one independent variable is used, it is not the case for more than one variable. The t-test should be used to test the individual coefficients when there are two or more regression coefficients.

Doran (1989:103) argues that apart from the theoretical suggestions on the importance of an independent variable, there are three other basic criteria that are useful in determining the relevance of independent variables. The criteria are: inclusion of the variable must be associated with a rise in the value of R-square, the t-test must show that the coefficient has a statistical significance, and the addition of the variable must be associated with changes in the estimated coefficients. The significance of each of the selected independent variables was tested as follows.

6.12.6 Test for significance of individual coefficients

The t-test was used to test the significance for individual partial regression coefficients.

To test the individual coefficients, it can be hypothesised that:

- $H_0: B_1 = 0, H_0: B_2 = 0, H_0: B_3 = 0, H_0: B_4 = 0$, against the alternative hypothesis;
- $H_a: B_i \neq 0$, where $i = 1, 2, 3, 4$.

Using a rule of thumb, H_0 is rejected if t-statistic is greater than t-table value_(5,194).

Alternatively, Lind *et al* (2002:522) argue that H_0 could be rejected if the computed t-value is to the left of -2.12 or to the right of 2.12 on the number line, at 5% level of significance.

6.12.6.1 Test for the coefficient of capital

Table 6.73 (on page 260) shows that t-statistic for the coefficient of capital is greater than 2.12 ($t = 4.661$), and the p-value ($p = 0.000$). H_0 for the coefficient of capital was rejected. One can thus conclude that capital, as an independent variable, is a significant predictor of performance.

6.12.6.2 Test for the coefficient of employee education

Table 6.73 (on page 260) shows the t-statistic is greater than 2.12 ($t = 4.802$) for the coefficient of employee education. Also, the p-value is less than 0.05 ($p = 0.000$). The null hypothesis that the coefficient of employee education equals zero was rejected, and a conclusion can be made that employee education is a significant predictor of sales.

6.12.6.3 Test for the coefficient of employee experience

Employee experience was found to be a significant predictor of sales, at the 5% level of significance (in table 6.73 page 260). The beta coefficient for employees experience has a t-statistic of 4.93, which is greater than 2.12, also the p-value of 0.000 is less than 0.05.

6.12.6.4 Test of the coefficient of employee training

Table 6.73 shows that, the t-statistic for the coefficient of employee training was greater (2.36) than 2.12, with a p-value that is less than 0.05 ($p = 0.019$). The null hypothesis (that the beta coefficient of employee training is equal to zero) was rejected. Employee training is thus found to be a significant predictor of sales.

With the findings in sections 6.11.4, 6.11.5, and 6.11.6, the null hypothesis (in 6.12.1, page 244), that “there is no functional relationship between sales and human capital elements” can be rejected. The conclusion is made that there is a functional relationship between sales and capital, employee education, employee experience, and employee training.

Table 6.73: Summary of the parsimonious regression model

Variables	Un-standardised coefficients		Standardised coefficients	t	p	Collinearity statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	-120857.2	26607.7		4.542	.000		
Capital	2.524E-03	.001	.308	4.661	.000	.773	1.293
Employee education	13835.607	2881.46	.290	4.802	.000	.927	1.079
Employee experience	5852.021	1187.02	.292	4.930	.000	.962	1.040
Employee training	4901.778	2076.82	.154	2.360	.019	.791	1.264

Dependent Variable: Sales

Therefore, the fitted regression model can be presented algebraically as follows:

$$\text{Sales} = -120857.2 + 0.02524(\text{Capital})_{t=4.661} + 13835.607(\text{Employee education})_{t=4.802} + 5852.021(\text{Employee experience})_{t=4.93} + 4901.778(\text{employee training})_{t=2.36}$$

R-square = 0.343

Adjusted R-square = 0.329

Number of observations = 200

t = t-value, statistically significant at the 5 % level of significance

The model developed is, however, not exhaustive. It did not consider all elements that influence sales. Sales could be subject to other conditions like consumer income, advertising, price, and change of consumer preferences. More specifically, the vital influence of a key decision-maker in the structure, conduct, and performance of SMMVs was not captured in the above regression model. To overcome this limitation, an alternative and preferred regression model was developed.

6.12.7 The preferred model

The role of the entrepreneur is critical to the formation and performance of any firm. The parsimonious regression model fitted in sections 6.11.2 through 6.11.6, does not reflect the importance of an essential role player in the performance of SMMVs: 'the entrepreneur'. The parsimonious model only shows the influence of employee human capital and physical capital as significant predictors of venture performance. The regression model failed to capture the essential role of entrepreneurs in decision-making and venture performance that was shown in the earlier results presented in sections 6.9 and 6.10. The absence of the significance of entrepreneurs in a model is tantamount to 'Hamlet without the Prince of Denmark' (Bloom, 1999:388).

Parametric methods, like the multiple regression analyses assume that the sample is drawn from a population where values have a normal distribution. One of the indicators that the fitted parsimonious multiple regression model did not satisfy all the Ordinary Least Square (OLS) assumptions is the shape of the histogram of residuals. To indicate that assumptions were not compromised, a histogram of residuals should show roughly a normal curve, implying that the error terms are normally distributed. The histogram of residuals for the fitted multiple regression model (appendix 6.4 page 369) seems to be

slightly skewed to the left. This could be an indicator that the normality assumption could not be met. Another key assumption of OLS is that error terms have equal variances throughout the sample, also called ‘homoskedasticity’. The skewedness of the error terms stated above suggests violation of the ‘homoskedasticity’ assumption, implying that the error variance is not constant also called ‘heteroskedasticity’.

In research involving cross-sectional data, as in the present study, variance of error term of the independent variables may not be constant. Micceri (1989:160) points out that true normality is exceedingly rare in psychology, education, and economic research. The presence of heteroskedasticity may bias the p-value by causing either the p-value to be too small or too large. However, the parameter estimates could still be unbiased and consistent (Salvatore, 1992; Petrochilos, 2004:120).

To overcome the technical inadequacy or the above heteroskedastic limitation, an alternative regression model was developed to predict venture performance. In this model, the set of data relating to the dependent and independent variables, as used in the earlier model, was transformed logarithmically. Accordingly, the dependent variable (output proxied by sales) and all the original independent variables (entrepreneur nAch, entrepreneur education, entrepreneur training, entrepreneur experience, employee education, employee training, employee experience, number of employees, and physical capital) were transformed logarithmically. Residuals of the predictors after transforming the data logarithmically were also plotted. The preferred model gave a better fit, which seems not to violate the ‘homoskedasticity’ assumption (appendix 6.5, pages 370). Using OLS method, the double-logarithmic transformation of the original specification (in section 4.9.2.3, page 161) takes the form below:

$$\text{Log } Y = \alpha + \beta_1 \log(X_1) + \beta_2 \log(X_2) + \beta_3 \log(X_3) + \dots + \beta_n \log(X_n) + e, \text{ where}$$

Y = Output

α = Intercept

$\beta_1, \beta_2, \dots, \beta_n$ = elasticities of output with respect to independent variables

$X_1, X_2, X_3, \dots, X_n$ = independent variables, and
 e = error term

The above model could be viewed as a multiplicative relationship between sales and the selected variables. Considering sales of the surveyed manufacturing ventures as a proxy of output, the above logarithmic function could be converted into a power function often referred as standard Cobb-Douglas production function. This type of function, shown below, has been extensively used in empirical studies (Pappas and Hirschey; 1990:322).

$$Q = aX_1^{\beta_1}X_2^{\beta_2}\dots X_n^{\beta_n} \text{ where}$$

Q = Total output (value of sales)

X_1, X_2, \dots, X_n = Independent variables

$\beta_1, \beta_2, \dots, \beta_n$ = Output elasticities of X_i

Appendix 6.3 (page 363) shows SPSS's output of backward method of eliminating the independent variables. To arrive at an alternative model that explains venture performance, all independent variables are initially entered, and then sequentially, a weaker variable is excluded until all the remaining predictors are found to have statistically a significant contribution to the model. In this case, entrepreneur nAch, entrepreneur experience, employee education, and number of employees were found to be not significantly contributing to the model, and were thus excluded in stages until 'the best model' was reached.

The results (in appendix 6.3, page 363) indicate that the fifth model is the most preferred one, in which output is found to be influenced by physical capital, entrepreneur education, entrepreneur training, employee experience, and employee training. A summary of the preferred model is presented in table 6.74 (page 265).

Table 6.74 (page 265) shows that this alternative and 'best' preferred model has the following strength:

- The model explains more than 50% of the variation of sales (R square = .511, adjusted R square = .498).
- Overall, the model is statistically highly significant (F = 40.495, p = .000).
- The elasticities of almost all variables are significant at 5% level: Elasticity of physical capital (t = 7.36, p = .000), entrepreneur education (t = 2.843, p = .005), employee experience (t = 9.464, p = .000), employee training (t = 1.881, p = .062), and entrepreneur training (t = 2.252, p = .025).
- The histogram of residuals (appendix 6.5, page 370) shows a normal curve, implying that the technique used and OLS assumptions for multiple regression analyses were satisfied.
- More importantly, the model captured two human capital elements of the entrepreneur and two of the employees, and physical capital all found to be significant predictors of SMMV performance.
- The model can be converted into a power function, allowing marginal production of a given predictor to depend on all other variables in the model, a condition that usually holds in real life situations (Pappas and Hirschey; 1990:322). Overall the results accord with and support the human capital theory.

The preferred model can be written as follows:

$$\begin{aligned} \text{Log(Output)} = & .243 + .481\log(\text{capital})_{(t = 7.409)} + .571\log(\text{entrepreneur education})_{(t = 2.851)} + \\ & 1.039\log(\text{employee experience})_{(t = 9.551)} + .221\log(\text{employee training})_{(t = 1.929)} \\ & + .135\log(\text{entrepreneur training})_{(t = 2.189)} + \text{error term} \\ & \text{R-squared} = 0.511 \\ & \text{Adjusted R-squared} = 0.499 \\ & \text{N} = 200 \end{aligned}$$

This new model conforms to the one developed by Black and Lynch (1996) as mentioned earlier in section 3.4 (page 88). From the above model, the following deductions can be made:

- Output is likely to increase by almost 5% for a 10% change in capital

- Output is likely to change by about 6% for a 10% change in entrepreneur education

Table 6.74: Summary of the preferred model (Cobb-Douglas production function)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.715	.511	.498	.47742

ANOVA of the preferred model (Cobb-Douglas production function)

Model		Sum of Squares	df	Mean Square	F	p
1	Regression	46.150	5	9.230	40.495	.000
	Residual	44.218	194	.228		
	Total	90.369	199			

Coefficients of the preferred model (Cobb-Douglas production function)

	Unstandardised coefficients		Standardised Coefficients	t	p	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	.214	.424		.506	.614		
Log(capital)	.481	.065	.412	7.360	.000	.806	1.240
Log(entrepreneur education)	.571	.201	.159	2.843	.005	.811	1.233
Log(entrepreneur training)	.135	.060	.119	2.252	.025	.899	1.113
Log(employee training)	.221	.118	.101	1.881	.062	.879	1.138
Log(employee experience)	1.039	.110	.497	9.464	.000	.916	1.092

Predictors: (Constant), Log(employee experience), Log(entrepreneur training), Log(employee training), Log(entrepreneur education), Log(Capital).
Dependent Variable: Log(Output)

- Output is likely to increase by just over 10% for every 10% increase in employee experience
- Output is likely to increase by about 2.2% for every 10% change in employee training and
- Output is likely to change by about 1.3% for every 10% change in training of the entrepreneur.

The estimated coefficients 0.481, 0.571, 1.039, 0.221, and 0.135 refer, respectively to output elasticities of capital, entrepreneur education, employee experience, employee training, and entrepreneur training. Since, the sum of elasticities ($0.481 + 0.571 + 1.039 + 0.221 + 0.135 = 2.447$), is greater than 1, there is increasing returns to scale in the SMMV sector. Implying that an increase in capital, entrepreneur education, employee experience, employee training, and entrepreneur training by 10% is likely to cause output to increase by a greater amount, almost 25%.

The presence of physical capital is necessary but not sufficient for the development of manufacturing firms. What is critical is the knowledgeable, skilled, and experience human factor. Entrepreneurs and workers operating jointly in a production function with capital can propel the Tanzanian manufacturing venture into a virtuous spiral of sustainability and success, so long as they competitively meet the need of the market.

6.13 Conclusion

Parametric and non-parametric tests were used to analyse data collected for this study. The choice of an appropriate statistical technique was based on the scale of measurement and whether data is normally distributed or not. The following results came out of the hypotheses tested:

(i) The first research question was investigated, using chi-square and correlation analyses.

The results are summarised in table 6.75 (page 267):

- A significant association is found between entrepreneur education and number of jobs created, profit, and target market.
- A significant association is found between entrepreneurs' attending of long-term training and sales, as well as access to target markets.
- A significant association is found between worker experience in the current firm and sales, as well as profit performance.
- A significant association is found between workers' training and sales, as well as profit performance.

Table 6.75: Summary of associations between human capital and performance

Variables	nAch	E/education	E/ training	E/experience	W/experience	W/education	W/training
Jobs created	N(6.2.1.1)	S(6.2.2.3)	n.a	n.a	n.a	n.a	n.a
Profit increase	N(6.2.1.2)	n.a	n.a	n.a	n.a	n.a	n.a
Sales	N(6.2.1.3)	S(6.2.2.2)	S(6.2.3.1)	n.a	S(6.2.5.1)	S(6.2.6.1)	S(6.2.7.2)
Profit	N(6.2.1.4)	n.a	n.a	n.a	S(6.2.5.2)	S(6.2.6.2)	S(6.2.7.1)
Target markets	n.a	S(6.2.2.1)	n.a	S(6.2.4.1)	n.a	n.a	n.a

Key: N = There was no significant association between the test variables, n.a = not applicable, S = There was a significant association between the test variables, nAch = entrepreneur nAch, E/education = entrepreneur education, E/training = entrepreneur training, E/experience = entrepreneur experience, W/experience = employee experience, W/education = employee education, and W/training = employees training. In bracket is a section in which the analysis is carried out.

- (ii) Hypotheses $H_{2.1}$, $H_{2.2}$, and $H_{2.3}$ were used to examine the second research question. The null hypothesis for $H_{2.1}$ was accepted, and a conclusion was made that entrepreneurs with high nAch created nearly the same number of jobs as those with low nAch. The null hypotheses for $H_{2.2}$ and $H_{2.3}$ were also accepted, and a conclusion was made that statistically, entrepreneurs with high nAch do not seem to have, on average, greater sales or profit performance than their counterparts with low nAch.
- (iii) Hypotheses $H_{3.1}$ and $H_{3.2}$ were used to investigate the third research question. The null hypotheses for $H_{3.1}$ and $H_{3.2}$ were rejected. With this result, one can conclude that more educated entrepreneurs are likely to achieve more sales than less educated entrepreneurs. Further, more educated entrepreneurs are likely to create more jobs than their counterparts with less education.
- (iv) Hypotheses $H_{4.1}$, $H_{4.2}$, and $H_{4.3}$ were used to investigate the fourth research question relating to entrepreneur training. The null hypothesis for $H_{4.1}$ was

rejected. The conclusion that trained entrepreneurs are likely to have more sales than their untrained counterparts was drawn. The null hypothesis for $H_{4.2}$ was also rejected. One can conclude that trained entrepreneurs are likely to earn more profit than untrained ones. However, data could not support hypothesis $H_{4.3}$, as on average, the number of jobs created by trained and untrained entrepreneurs was not significantly different.

- (v) Hypothesis H_5 was used to examine the fifth research question. The null hypothesis for H_5 was accepted, indicating that more and less experienced entrepreneurs were serving almost the same target markets.
- (vi) Hypotheses $H_{6.1}$ and $H_{6.2}$ were used to investigate the sixth research question. The null hypothesis for research hypothesis $H_{6.1}$ was rejected, suggesting that enterprises with more experienced workers are likely to have more sales than firms with a less experienced labour force. The null hypothesis for research hypothesis $H_{6.2}$ was also rejected, suggesting that enterprises with more experienced workers are likely to earn, on average, a greater amount of profit relative to those with less experience.
- (vii) Hypotheses $H_{7.1}$ and $H_{7.2}$ examined the seventh research question. The null hypotheses for $H_{7.1}$ and $H_{7.2}$ were rejected, suggesting that SMMVs with educated employees are likely to have more sales and earn greater profit relative to those with poorly educated employees. This could also imply that in executing their tasks, educated employees add value to the firm, making the venture cost effective.
- (viii) The research hypotheses $H_{8.1}$, and $H_{8.2}$ investigated the 8th research question. The null hypotheses for $H_{8.1}$ and $H_{8.2}$ were rejected, and the conclusion was made that SMMVs with trained employees are likely to generate greater average sales and earn more profits than those with untrained employees.

(ix) Six **secondary** hypotheses were also examined in this study. The first one examined whether there was a distinction in the **conduct** of business between educated entrepreneurs and uneducated entrepreneurs. To answer the question, six hypotheses were formulated. Below is a summary of the results.

- For subsidiary hypothesis SH_{1.1}, it was initially found that there is a significant association between entrepreneurs' education and their attending of off-the-job training. Further examination of secondary hypothesis SH_{1.1} indicates that more educated entrepreneurs are more likely to attend off-the-job training than their counterparts with less education.
- There is a significant association between entrepreneur education and quality of employee hired. Further examination of secondary hypothesis SH_{1.2}, suggests that educated entrepreneurs are likely to recruit workers who are educated, while poorly educated entrepreneurs tend to employ poorly educated workers.
- For subsidiary hypothesis SH_{1.3}, it was found that more educated entrepreneurs are likely to keep more business records than their less educated counterparts.

(x) Secondary hypotheses SH_{2.1}, and SH_{2.2}, were used to examine the second secondary research question 'Is there a significant difference in the conduct of business between entrepreneurs who have attended training and those who have not?'. Below is a summary of the results.

- For SH_{2.1}, there is a significant association between entrepreneur attending training and owning of another business. Further examination of secondary hypothesis SH_{2.1} suggests that entrepreneurs who have attended training are more likely to own another business than their untrained counterparts.
- For SH_{2.2}, it was found that trained entrepreneurs are more likely to hire educated workers than their untrained counterparts.
- For SH_{2.3}, it was found that trained entrepreneurs are likely to keep more business records than their untrained counterparts.

(xi) Secondary hypotheses SH_{3.1}, and SH_{3.2}, examined the third secondary research question ‘Is there a significant difference in the conduct of business between enterprises with trained employees and those with untrained employees?’. Below is a summary of results.

- For SH_{3.1} it was initially found that there is a significant association between employee training and access to finance from banks. Further examination of secondary hypothesis SH_{3.1}, suggests that SMMVs with trained employees are more likely to access finance from banks frequently than those with untrained staff.
- For SH_{3.2}, it was found that SMMVs with trained employees are more likely to keep a higher number of business records than their untrained counterparts.

(xii) Secondary hypothesis SH_{4.1} examined the fourth secondary research question. It was found that enterprises with more-educated employees are likely to keep more business records than those with poorly educated workers.

(xiii) Secondary hypothesis SH₅ examined the fifth secondary research question. It was found that there is a significant difference in number of jobs created by different manufacturing activities. On average, entrepreneurs engaged in edible food processing were found to be creating more jobs (8.4884), while those in metalwork were creating the least (0.7647).

(xiv) Secondary hypothesis SH₆ examined the sixth research question. On average, SMMVs in each zone were creating nearly the same number of jobs. The Lake zone created, on average, about 5.1 jobs, the Southern about 5 jobs, the Eastern about 4.0 jobs, Northern about 4.0 jobs, and the Central zone created the least (1.8881 jobs).

(xv) Hypothesis H₉ examined the ninth research question, which examined the functional relationship between human capital and SMMV performance. In the process of examining the contribution of each variable more parsimonious linear regression model

was adopted. The adopted model shows that capital, employee experience in the current enterprise, education of employees, and employee training could predict sales.

Since the parsimonious linear regression model could not capture the influence of entrepreneurs' human capital on sales performance, an alternative model was developed on the basis of logarithmic transformation of the data pertaining to the set of independent variables and the dependent variable. A standard Cobb-Douglas production function was developed, showing that physical capital, entrepreneur education, entrepreneur training, employee experience in the current firm, and employees training are significant predictors of output performance. The alternative and preferred model explains over 50% of sales/output performance. Further, it renders evidence of support for increasing return to scale.

This preferred alternative model also seems to strongly accord with the fundamentals of the human capital theory. The new model convincingly shows that SMMVs performance in Tanzania is dependent on physical capital, and human capital of entrepreneur and employees. Generally, one can conclude that this preferred model shows the applicability of human capital theory in the Tanzanian perspective, of SMMVs. The next chapter will discuss the conclusions, recommendations, and limitations of this study.

CHAPTER 7

DISCUSSION, SUMMARY, AND RECOMMENDATIONS

7.1 Introduction

The primary purpose of this study was to investigate the impact of human capital on the performance of Small and Micro Manufacturing Ventures (SMMVs) in Tanzania. As a secondary objective, the study examined the impact of human capital on the conduct of business.

This final chapter concludes with a summary of the major findings of this study. It discusses the results in relation to the research questions (in chapter 1), objectives (in chapter 1), and hypotheses (in chapter 4) that were initially formulated. Some policy recommendations relating to human capital development and performance of SMMVs in Tanzania are presented. The chapter ends with some limitations of the current study and offers some recommendations for future research.

7.2 Background

The data collection exercise for this study began in September 2002, and was completed in December 2002. 218 respondents were interviewed, using a structured questionnaire (appendix 4:5, page 337). Eighteen questionnaires were excluded as they contained outliers, which were identified by SPSS's outlier identification function. According to Heiman (2001:172), outlier cases display extreme values that have a tendency of pulling away the mean of variables and the coefficient of correlation, hence undermining the usefulness of such data for meaningful conclusions.

The effective sample was then reduced to 200 entrepreneurs. The sampled enterprises were randomly selected from the registered list of operating SMMVs provided by the Small Industries Development Organisation's (SIDO) and Tanzania Chamber of Commerce, Industry, and Agriculture (TCCIA) regional extension officers in 18 of the 20 regions of mainland Tanzania.

Two regions, Kagera and Mbeya, were not included in the study, due lack of funds and time constraints (appendix 6.6 page 371). The number of entrepreneurs surveyed appears to be evenly distributed across Tanzania. Although a stratified-proportional random sampling method was used, the number of respondents in the covered regions ranged from 4 to 20. On average, eleven entrepreneurs were interviewed from each region.

In this study, SMMVs were operationally defined as Tanzanian manufacturing ventures, employing between 1 and 49 workers, and producing tangible goods for sale (chapter 4). In chapter 3, human capital was conceptualised as nAch, education, training, and experience. To carry out hypotheses testing, surveyed entrepreneurs were categorised into educated and uneducated, trained and untrained, more experienced and less experienced, and high nAch and low nAch. Also, workers were grouped into educated and uneducated, trained and untrained, experienced and inexperienced. The following is a discussion of the main findings.

7.3 Discussion of main findings

This section presents a discussion of the main findings of the study. These findings are linked to the research questions (in chapter 1), objectives (in chapter 2), and hypotheses (in chapter 4). Essentially, these cover on the results from examining the impact of human capital on venture performance.

7.3.1 Entrepreneur need achievement level

Research hypotheses H_1 and H_2 examined the association between nAch and business performance. As nAch is not found to be significantly correlated with sales, profit, and job creation, there is no support for research hypotheses $H_{2.1}$, $H_{2.2}$, and $H_{2.3}$ (in sections 6.3.1 to 6.3.3). However, nAch levels of entrepreneurs are positively correlated to the number of jobs created in the surveyed firms, but the relationship is not statistically significant. This result is at variance with those of Lee and Tsang (2001:583), who found that an entrepreneur's nAch level is significantly associated with venture performance.

The non-existence of any association between entrepreneur nAch level and business performance, and the lack of significant difference in venture performance between entrepreneurs with low nAch and high nAch, was also confirmed by regression analyses. In the process of arriving at the 'best' multiple regression model, the predictor variable 'entrepreneur nAch' was excluded first as it did not have a significant contribution to the model [p-value = 0.966, (section 6.11, page 248)].

Entrepreneurs are a very heterogeneous group. Each of the entrepreneurs has a different motivation for establishing a business, and not all are motivated to same degree by profit, sales maximisation, or job creation. This study perhaps partially confirms the assertion by McClelland (1965:7) that money is not usually the primary incentive to an entrepreneur with high nAch.

7.3.2 Entrepreneur education

The second problem to be investigated was whether there was a significant performance difference between educated entrepreneurs and their uneducated counterparts. The results (in section 6.2.2.1 to 6.2.2.5) show a positive and significant correlation between entrepreneur education and sales ($r = 0.271$, $p = 0.000$), as well as between entrepreneur education and job creation ($r = 0.221$, $p = 0.002$).

A significant association is also found between entrepreneur education and access to target markets ($X^2 = 10.486$, $df = 2$, $p = 0.005$), with the more educated entrepreneurs tending to secure broader target markets than their less educated ones. Overall, there is a significant difference in performance between educated and uneducated entrepreneurs. Educated entrepreneurs are likely to have more sales and create more jobs, relative to uneducated entrepreneurs.

One could argue that entrepreneur education improves managerial or entrepreneurial effectiveness, which includes the ability to hire and manage a larger number of people.

This study lends support to the work of Daniels and Mead (1998:63), who also found that entrepreneur education has a positive impact on venture performance.

Educated entrepreneurs are also found to be hiring more educated workers than their uneducated counterparts. The difference in the average education level of employees in the surveyed SMMVs is found to be significant (Mann-Whitney U-test = 2490, $p = 0.000$). With these results, one can conclude that more educated entrepreneurs seem to have better human resource management skills, in that they are able to hire and manage a large and better educated workforce than their less educated counterparts.

Entrepreneurs with more education are more likely to attend further training than those with less education. Differences in attending of off-the-job training are found to be significant (Mann-Whitney U-test = 3885, $p = 0.001$). Thus, one may conclude that educated entrepreneurs are more likely to recognise their weaknesses in capability, and are more willing to undertake remedial measures through further training. It can be further implied that educated entrepreneurs are more aware of the significance of training in venture performance than the uneducated. As described earlier in section 6.10.1.1, this result provides a confirmation for the work of Barcala *et al* (1999:349).

Education, as an integral element of human capital, is relevant not only to the performance of a firm, but also to how it operates, particularly with regard to record keeping. There is a significant difference in the number of records kept between educated and uneducated entrepreneurs. Educated entrepreneurs are found to keep, on average, a larger number of business records (3.2) than their uneducated counterparts (2.2). It can be inferred that the conduct of business by educated entrepreneurs, as partly reflected by keeping of their business records, is superior to that of their uneducated counterparts.

7.3.3 Entrepreneur training

The other problem investigated was whether there were performance differences between entrepreneurs who have attended long-term training relative to the performance of

entrepreneurs who have not. Initial results, in section 6.2.3.1, show some association between entrepreneur training and sales.

Entrepreneurs who had attended training were found to have significantly more sales and earn greater profits than their untrained counterparts. Accordingly, one can suggest that, like exposure to education, training provides entrepreneurs with knowledge and skills that enhance their capacity to sell more and better manage their business, relative to untrained entrepreneurs. This result tends to accord with the work of Saini (1996:167), who also found that sales are significantly higher in ventures managed by trained entrepreneurs (section 4.2.4).

It was further found that entrepreneurs who had attended training were more likely to own another business than those without training. One could argue that by attending long-term training, entrepreneurs can acquire knowledge, and build confidence and positive attitudes for the running of another business. Similar to the impact of entrepreneur education, attending training can enhance the entrepreneur's confidence, and the capacity to hire and manage an educated workforce. There seem to be many similarities between the impact of entrepreneur attending of training and the impact of entrepreneur education. Training, like education, impacts positively on the number of records kept by entrepreneurs and on their recruitment practice. Educated and trained entrepreneurs tend to hire educated employees.

7.3.4 Entrepreneur prior working experience

The fourth issue investigated in this study was whether there is a significant association between the performance of entrepreneurs that had greater previous work experience as salaried employees prior to establishing the current venture and their less experienced counterparts. The results in section 6.2.4.1 reveal a significant association between entrepreneur prior working experience and target markets ($X^2 = 6.188$, $df = 2$, $p = 0.045$). Prior working experience is believed to increase the ability of the entrepreneur to exploit market opportunities, establish business contacts, and networks. This result is consistent

with those of Dyke *et al* (1992:79) and of Stuart and Abbetti (1990), who found a significant association between former working experience and venture performance.

7.3.5 Employee experience

A positive and significant correlation was found between employee experience and sales, as well as between employee experience and profits (section 6.2.5.1 and 6.2.5.2). The result (in section 6.7) shows support for hypotheses $H_{6.1}$ and $H_{6.2}$. SMMVs with more experienced workers, on average, have larger sales (Tzs 91,826.00) than those with less experience (Tzs 31,708.00). The sales difference is significant ($t = 4.741$, $p = 0.000$), implying that having more experience in the same firm improves production, and can also result in more sales.

Similarly, there is support for hypothesis $H_{6.2}$. SMMVs with more experienced workers in the current firm, on average, have greater profits (Tzs 29,506.00) than those with less experienced workers (Tzs 10,743.00). Profit differences were found to be significant ($t = 4.740$, $p = 0.000$). The results provide confirmation (for $H_{6.1}$) that more experience in the current firm improves production and sales, and that this also reduces expense that may contribute to more profit. Employee experience with a current manufacturing firm appears to generate a learning curve effect that impacts positively on venture and individual performance.

7.3.6 Employee education

This study shows that there is a positive and significant correlation between employee education and sales, and also between employee education and profit (section 6.2.6). The result in section 6.8 shows that, on average, SMMVs with educated employees have larger sales (mean sales = Tzs 86,864.00) than those with an uneducated workforce (mean sales = Tzs 35,556.00). The differences in average sales were found to be significant ($t = 4.039$, $p = 0.000$). A more educated workforce tends to be more productive in generating sales and output in a firm than an uneducated one.

Further, SMMVs with an educated workforce are found to earn, on average, greater profit (mean profit = Tzs 27,985.00) than firms with a poorly educated workforce (mean profit = Tzs 11,915.00). As mean profit differences are found to be significant ($t = 3.822$, $p = 0.000$), one can conclude that an educated workforce tends to enhance labour productivity, which in turn contributes to more profits.

Additionally, employee education is also found to have a bearing on the conduct of a business. SMMVs with an educated workforce are found to keep more business records (3) than those with an uneducated labour force (about 2).

7.3.7 Employee training

A positive and significant correlation is found between employee training and sales, as well as profits (in section 6.2.7.1 through 6.2.7.2). As reported earlier (in section 6.9), there is support for hypotheses $H_{8.1}$, and $H_{8.2}$. SMMVs with trained employees, on average, have more sales (about Tzs 75,000.00) and earn greater profits (about 25,000.00) than SMMVs with untrained employees (sales, about Tzs 40,000.00; profits = about Tzs 12,000.00). With these results, one could argue that employee education and employee training can have a complementary effect on venture performance.

Further, ventures with trained workers are found to access finance from banks more frequently, and keep more business records, than firms with untrained employees. One can argue that SMMVs with trained employees could have acquired capabilities to decipher information and disseminate relevant information to financial institutions. It seems that (when seeking loans) human capital development in a firm may have an indirect influence on access to bank loans. Also, employee training can provide workers with skills and knowledge that can enhance their attitudes and abilities with regard to proper record keeping.

7.3.8 Job creation by SMMVs activities

The SMME sector is the focus of policy interest in Tanzania, as in most other countries, because of its proven ability to generate employment in the economy. Therefore, this study investigated whether firms in the SMMV sector have the same capacity to generate jobs. In this study firms engaged in edible food processing created, on average, more jobs than those involved in leatherwork, animal food processing, woodworks, tailoring and sewing, and metalwork. A significant difference is found in the number of jobs created between edible food processing and tailoring ($X_{ij} = 6.4278$, $p = 0.019$), between edible food processing and metalwork ($X_{ij} = 7.7237$, $p = 0.000$), and also between the six activities [woodworking, tailoring/sewing, edible food processing, animal food processing, metalwork, and leatherwork, ($F = 4.4$, $p = 0.001$)].

With these results, one can conclude that if the objective of public policy is job creation, then different policies should be formulated for SMMVs in different activities. In this case, SMMVs engaged in edible food processing might be the most favorably placed for policy interventions that support employment creation.

7.3.9 Job creation by SMMV zonal distribution

The study also examined whether there is a significant difference in jobs created by SMMVs distributed by zonal location. The results reported in section 6.10.6 show no support for secondary hypothesis SH_6 . The firms in each zone created nearly the same number of jobs. The Lake zone created, on average, about 5.1 jobs, the Southern zone about 5 jobs, the Eastern zone about 4.0 jobs, the Northern zone about 4.0 jobs, but the Central zone created the least (1.8881 jobs).

On basis of Tukey's test, there is no evidence of a significant difference in jobs created between any of the groups, taken two zones at a time. Similarly, the one-way ANOVA test for equality of jobs-created-means was not significant [$F_{(4,195)} = 0.804$, $p = 0.524$]. Accordingly, if the public policy objective is job creation, the SMME policy may be similar for some zones. Although the differences in jobs created-means among zones are not statistically significant, one may perhaps argue that a closer look at central zone, that

has the lowest mean-job created (1.8881 jobs), is necessary to boost employment opportunities in that specific zone.

7.4 Recommendations

This thesis conclusively shows that, the human capital development of both entrepreneurs and workers in a venture positively impacts on the performance of Tanzanian SMMVs, and also on their conduct of business. Furthermore, a functional relationship is found between SMMV output performance and predictors, such as the amount of capital available, entrepreneur education, employee experience, employee training, and entrepreneur training. The following sections provide some recommendations for policy makers and entrepreneurs on the basis of evidence from both the literature search and the findings of this study.

7.4.1 Recommendations for policy makers

Two reasons for providing policy recommendations were considered, firstly, entrepreneurs do not operate in a vacuum, they carry out their activities in a real economy. Actions of entrepreneurs play an important role in the socio-economic development of any economy. Entrepreneurs create jobs, produce goods and services, invent, and innovate. Successful entrepreneurs contribute positively to a country's growth and the living standards of its people. The importance of entrepreneurs and human capital development in a national economy raises the need for policy recommendations. The second reason for policy recommendations is that, not all human capital can be provided by entrepreneurs alone. Given the societal benefits of education and training, there is a need for policy interventions. Thomas *et al* (1998:301) cautioned that policy makers tend to restrict and demarcate debates in ways that fit their preferred policy options. However, Stiglitz (2002:218) argues that policy makers must have a role in making any economy function efficiently and effectively. Below is a presentation of policy recommendations.

(i) Over 70% of the surveyed enterprises were based in urban areas, and there are more businesses in urban than rural areas in Tanzania. The relatively few enterprises in rural

locations indicate that the potential benefits of SMMEs in these areas have not yet been maximised in the Tanzanian setting. This study has found that firms in each of the five zones created nearly the same number of jobs, implying that, if the policy objective is job creation, SMMV policy may be similar for all the zones. However, it is desirable to have a balanced distribution of manufacturing and other enterprises between the rural and urban locations. Accordingly, Tanzanian policy makers should perhaps consider encouraging the establishment of more SMMVs in rural areas by creating an enabling environment that is conducive for rural entrepreneurship.

(ii) Only a few (13.5%) of the surveyed SMMVs were owned and managed by female entrepreneurs. Female entrepreneurs contribute a larger portion of their business returns to maintenance of the household (Singh *et al* 2001:174). Similarly, edible food processing is found to be creating more jobs than ventures in leatherwork, animal food processing, woodworks, tailoring and sewing, and metalwork. Decision makers in Tanzania should establish policies for SMMVs that are gender and activity differentiated. Such policies should enhance women's entry into entrepreneurship through small ventures, relevant to the needs and resources of the country. A single and all-inclusive SMME policy may not be appropriate, given the sensitivity of gender and activities entrepreneurs are engaged in. Enterprises and entrepreneurs are heterogeneous. Entrepreneurs have different opportunities, needs, and constraints. Policies need to be tailor-made to reflect such differences.

(iii) It was found in the study that educated are more likely to earn more sales, earn more profits, and create more job opportunities than their uneducated and untrained counterparts. For SMMVs to effectively combat the growing unemployment problem in Tanzania, the government should encourage education institutions to review their curricula to prepare graduates for self-employment. As the Hon. Ng'wandu (Minister of Science, Technology, and Higher Education) put it, the education provided in Tanzania seems to prepare students for job seeking rather than risk-taking (PST correspondent, 2004). This has to be rectified through appropriate educational policies.

The findings of this study indicate that less educated entrepreneurs, that is, those with between 1 and 7 years of schooling have smaller sales, create a smaller number of jobs, keep a smaller number of business records, are less likely to attend off-the-job training, and tend to hire uneducated employees.

The results also show that SMMV entrepreneurs with at most 7 years of schooling lack technical and managerial capabilities, implying that 1 to 7 years of schooling is not sufficient for entrepreneurs to cope with business challenges that are influenced by *inter alia*, globalisation, competition, and technological changes. Seven years of schooling is compulsory in Tanzania, but this level of education seems to contribute to the poor performance of many entrepreneurs in this study. In support, Stiglitz (2002:241) emphasised that economic success cannot come from only promoting primary education but also from establishing a strong technical base, which include support for advanced training and education. It can thus be argued that compulsory education should be increased from 7 year to 12 years, that is, from Universal Primary Education (UPE) that was established in 1974, to the Universal Secondary Education (USE). By so doing, Tanzania hopefully will be able to boost its economic growth, broaden the economic base, and empower individuals venturing into small businesses.

In Tanzania the legal age of majority is 18 years [Tanganyika Age of Majority Ordinance Cap. 431(revised laws)]. A primary school leaver of 14 years of age is a minor. Such a person cannot enter into contract, meaning that s/he cannot apply and secure a loan from financial institutions or from any other person who is conversant with the Law due to the age limitation. The envisaged additional four years of universal education will take a person to 18 years of age, enabling that person to enter into contract.

According to this study, entrepreneurs with 11 or more years of school had acquired the knowledge and skills to run a business, and had attained the age of majority to enter into any contract. However, in comparison to other countries with similar levels of development, the UPE in Tanzania at a moment, 7 years of schooling, is rather low and inadequate. Hence, there is a need for capacity building: extending training and education

in Tanzania, aiming in the long run to a degree level, resource permitting. This might help to secure a firm base for the SMME sector and other sectors in Tanzania. The second set of recommendations is addressed to the entrepreneur.

7.4.2 Recommendations for entrepreneurs (owner-managers)

(i) Human and physical capital

SMMVs with more developed human capital are found to perform better than their counterparts with less developed human capital. With further results of physical and human capital in a Cobb-Douglas production function showing increasing returns to scale, a small percentage change in human and physical capital can lead to a much larger percentage change in output. Accordingly, there is a persuasive case for entrepreneurs in manufacturing enterprises to focus on enhancing the quality of their human and physical capital in their firms. Investment in physical capital should augment their productive capacity, possibly making their firms more competitive too, in the rapidly changing technological and global environment.

(ii) Entrepreneur education

To operate and manage physical capital, a firm needs a skilled entrepreneur and skilled labourforce. Both the parametric and non-parametric tests clearly highlight the significance of entrepreneur education to venture performance and the conduct of business. Educated entrepreneurs achieve, on average, more sales (about Tzs 80,000.00), and create more jobs (about 3), whilst poorly educated entrepreneurs experience less sales (about Tzs 40,000.00) and generate fewer jobs (about 2 jobs). More educated entrepreneurs are more likely to attend off-the-job training, hire educated workers, and keep more business records than their less educated counterparts. More educated entrepreneurs are less likely to fail in their businesses.

Although the context of their study was different from Tanzanian setting, Borjas and Bronars (1989:602) confirm that 16 years of schooling has a significant effect on venture performance for Whites, Blacks, and Hispanics in USA. It is thus recommended that

entrepreneurs should seek to improve their skills through improved or continuous education as technology and market circumstances change.

(iii) Entrepreneur training

An educated entrepreneur is a productive person. This productivity can be further enhanced through appropriate training. Trained entrepreneurs achieve more sales (about Tzs 89,500.00), and realise greater profits (about Tzs 30,000.00), compared to their untrained counterparts who have less sales (about Tzs 36,100.00), and earn less profits (about Tzs 11,000.00). Entrepreneur training is beneficial to the business. It is recommended that, to the extent possible, entrepreneurs should empower themselves with training that is related to practical needs of their business.

(iv) Employee experience in the current firm

Not only entrepreneur human capital is important but employee human capital as well. The derived Cobb-Douglas model indicates that employee experience exhibits increasing returns to scale, suggesting that a 10% increase in employee experience in the current firm may result in about 10.4% increase in output. Moreover, SMMVs with more experienced workers have, on average, greater sales (about Tzs 91,000/=), earn greater profits (about Tzs 29500/=) than those firms with less experienced workers (sales, about Tzs 31,700/=; profits, about Tzs 10,700/=). This study indicates that manufacturing firms seem to play two important roles: the usual production of goods and on-the-job learning for workers. In the enterprise, workers learn from their peers and senior workers to operate machines, and perform in a team.

In addition to a learning curve effect, employee experience in the current firm is somewhat analogous to employee retention. Through employee retention, an entrepreneur keeps the appropriate talents within the business, and this may help to strengthen employee loyalty within the firm and minimise recruitment costs. It is recommended that entrepreneurs keep their skilled workforce for long periods of time. Retention strategies could include employee empowerment policies, like career advancement, employee equity share schemes, competitive salary and benefits, employee involvement in

decisions, training and development, and recognition. Such measures could entice workers to remain in the firm longer, improve their commitment and trust, and enhance their support on business initiatives. These may also serve to reduce transaction costs.

(v) Employee training

SMMVs with trained employees generate greater average sales (about Tzs 75,500/=), and earn greater profits (about Tzs 25,000/=) than those ventures with less employee training (about Tzs 40,400/= and about Tzs 12,000/= respectively). Regarding conduct of business, ventures with trained employees have greater access to finance from banks, and are likely to keep more business records than those firms with a less trained workforce. Trained employees are productive. Labour productivity is good for the business and the economy at large. Accordingly, entrepreneurs should inspire their employees to undergo training. Depending on circumstances, entrepreneurs should provide cost-effective on-the-job and off-the-job training for their employees. This may, in turn, provide a motivating work environment.

(iv) Employee education

SMMVs with more educated employees have on average more sales (about Tzs 86,800.00) and earn greater profits (about Tzs 27,900.00) relative to those enterprises with less educated employees, which have less sales (about Tzs 35,500.00) and earn less profit (about Tzs 11,900.00). An educated and trained workforce is a productive labourforce. It is recommended that entrepreneurs should strive to hire educated workers, who fit their business values, core competencies, and strategic goals. Entrepreneurs should encourage employees to go for further education, and formulate policies for supporting education and training inside and outside the business.

Overall, human capital is found to confer positive benefits to both the entrepreneur and the worker, and these have externality effects on the economy. Accumulation of physical and human capital by the entrepreneur and the workforce results in a productive business, which generates more output of goods and services. The multiplier effects of better performing ventures are likely to be creation of more jobs, improvements in the living

conditions of employees, and overall enhancement of the GDP in the economy. This is what Tanzania has to strive for – a thriving manufacturing sector embodied with relevant human capital of both the entrepreneur and labour.

7.5. Limitations of the study

As with most research, this study also suffers from the following limitations. Firstly, to investigate the impact of human capital on the performance of Tanzanian SMMVs, a sample of only 200 entrepreneurs was considered owing to resource constraints. Entrepreneurs in the informal sector were excluded. Tanzania is relatively a large country, and its manufacturing sector is very fragmented. Restricting the study to a small sample carries the obvious advantage of focusing on a specific context. However, this approach limits the possibility of generalising the findings of this study to other contexts, as results may not always be representative of the whole population. As, Franks and Cassidy (1998) point out each situation is different, has unique structures, dynamics, and particular features. It is thus dangerous to generalise from one situation to another.

Secondly, there is no complete database on the SMME population yet in Tanzania, from which a reliable random sample can be drawn. This is due to the relatively recent policy and research interest in the SMME sector there. A SMME census has never been held in the country. Data from the Bank of Tanzania (BoT), the Central Bureau of Statistics, the Ministry of Trade and Industry (MIT), and other stakeholders is partly affected by the lack of a universally accepted definition of SMMVs. Although lack of adequate and accurate data is frequently raised as an objection in using quantitative techniques for data analyses, Mniachi (2000:92) argues that this negative attitude will leave the level of knowledge static, and knowledge development will be dwarfed if this objection is allowed to persist.

Thirdly, only four human capital elements drawn from the literature review were included: education, experience, need achievement, and training. Accordingly, the number of investigated variables seems rather narrow. One could have included other personal and economic characteristics, such as locus of control, attitude, innovation, and

interest rates, but resource constraints limited this. Orser *et al* (2000:44) argue that researchers should not assume that growth is always desirable for entrepreneurs; their perception about growth should be investigated as well. Such personal characteristics can influence the motivation to grow.

Fourthly, there could be an element of bias in the results, as most data was gathered by means of personal interviews. Given human nature, there might be instances in which entrepreneurs might not have fully reported the truth when responding to questionnaires.

Lastly is the limitation with respect to the time frame of the study. Investigating the enterprises for a period of five years only may have been too short. A longitudinal study, capturing other variables that could influence performance in the long run, could have been more useful.

7.6 Recommendations for future research

The study could have been enhanced had it covered a larger sample and included SMMEs from other sectors too. Suggestions for future research include:

- (i) Instead of a study being limited to only five categories of manufacturing activities of Tanzanian SMMVs, like this study, a different and broader study could be carried out. It could include additional groups from the International Standard for Industry Classification (ISIC) and cover other regions of Tanzania to provide a broader base and serve to enhance policy orientations.
- (ii) There is need for a similar study, but of a longitudinal nature, to be conducted. Duplication of the present study, covering a larger size and a longer time scale, will assist to confirm or dispute the findings of this study. Moreover, this would also help to test the reliability of the data collection instrument used and the validity of the findings.
- (iii) A similar study may be carried out, but including the informal sector as well. This would help policy makers and other stakeholders in the SMME sector to better

understand the implications of human capital for the growth and development of both formal and informal entrepreneurship that permeates Tanzania. This would also enable decision-makers to make meaningful comparisons between the two types of entrepreneurship.

(vi) Although gender of the entrepreneur and business location in relation to performance of enterprises did not constitute the core of this study, gender issues seem relevant to the development of SMMEs. Therefore, it might be important for further research to examine whether or not gender and business locations have an effect on the performance of SMMVs.

7.7 Concluding remarks

This study indicates a strong link between entrepreneur and employee human capital and venture performance, and also between physical capital and venture performance. It supports the economic reasoning that human capital of both the entrepreneur and the worker acquired through education, training, and experience, jointly enhances the productive capacity of a firm. Human capital of the entrepreneur is not only critical to the performance of a business but also to the conduct of business. More importantly, this study underpins the critical role of the entrepreneur as the decision-making agent in the development of a firm and in employment as well as output generation. More educated and trained entrepreneurs tend to hire better quality employees, keep more business records, and retain their employees in the firm longer than their counterparts with less developed human capital.

The preferred regression model clearly shows that physical capital, entrepreneur education, entrepreneur training, employee experience, and employee training are significant predictors of output performance, and these generate increasing returns to scale. Firms with expanding sales or outputs are likely to create much-needed employment opportunities in Tanzania. A strong SMMV sector can play a positive role in enhancing the development of the Tanzanian economy. Consequently, the policy focus

should be on stimulating investment and enhancing the human capital of both entrepreneur and labour.

With globalisation, rapid development of science and technology, and innovation, the product life cycles of many manufacturing firms tend to become shorter, making ventures vulnerable. This is also true in Tanzania. Ventures need to upgrade their production functions, which often generate improved products, and in turn contribute to reduced average costs. Manufacturing firms that do not adapt to the technological changes are likely to fail. To remain competitive in the long run, simply investing in physical capital is not sufficient. It demands creating a learning organisation, an organisation skilled at acquiring knowledge for modifying behaviour to anticipate, react, and respond to change, complexity, and uncertainty (Garvin, 1998:51). It demands new skills and knowledge on the part of workers and entrepreneurs. Thus, to secure the maximum development of small manufacturing ventures, Tanzania needs a **holistic approach** that focuses on *inter alia* enhancing the quality of the human capital of both the actual and potential workers, and entrepreneurs. Certainly, the role of the government and institutions in creating an enabling environment and providing adequate finance is not to be overlooked.

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Appendix 2.1 CONTRIBUTION TO OVERALL GDP (%)

(At constant 1992 prices)

ECONOMIC ACTIVITY	1994	1995	1996	1997	1998	1999	2000
Agriculture	49.6%	50.7%	50.6%	50.1%	49.1%	48.9%	48.2%
Crops	36.5%	37.7%	37.6%	37.3%	36.5%	36.4%	35.7%
Livestock	6.9%	6.8%	6.7%	6.7%	6.6%	6.5%	6.4%
Forestry and Hunting	3.3%	3.3%	3.3%	3.2%	3.1%	3.1%	3.1%
Fishing	2.9%	2.9%	2.9%	3.0%	2.9%	2.9%	3.0%
Mining and Quarrying	1.3%	1.4%	1.5%	1.7%	2.0%	2.1%	2.3%
Manufacturing	8.1%	7.9%	8.0%	8.1%	8.4%	8.3%	8.3%
Electricity and Water	1.6%	1.6%	1.7%	1.7%	1.7%	1.7%	1.7%
Electricity	1.4%	1.4%	1.5%	1.5%	1.5%	1.5%	1.5%
Water	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%
Construction	4.6%	3.8%	3.9%	4.1%	4.3%	4.5%	4.6%
Trade, Hotel and Restaurant	15.7%	15.7%	15.6%	15.8%	15.9%	16.1%	16.4%
Transport and Communication	5.1%	5.3%	5.1%	5.2%	5.3%	5.4%	5.4%
Financial and Business Services	10.6%	10.3%	9.9%	10.3%	10.5%	10.4%	10.4%
Finance and Insurance	4.0%	3.7%	3.4%	3.8%	4.0%	4.0%	3.9%
Real Estate	6.2%	6.3%	6.2%	6.2%	6.2%	6.2%	6.2%
Business Services	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%
Public Administration and Others	8.7%	8.2%	8.0%	7.9%	7.8%	7.7%	7.7%
Public Administration	5.7%	5.2%	4.9%	4.9%	4.8%	4.6%	4.5%
Education	1.1%	1.1%	1.1%	1.1%	1.2%	1.1%	1.2%
Health	0.6%	0.6%	0.6%	0.7 %	0.6%	0.6%	0.6%
Other Services	1.2%	1.2%	1.2%	1.3%	1.3%	1.3%	1.3%
Less financial services indirectly measured	-5.3%	-4.8%	-4.2%	-5.0%	-5.2%	-5.1%	-5.0%
Total GDP (At factor cost)	100%	100%	100%	100%	100%	100%	100%

Adopted from: National Bureau of Statistics (2001)

Appendix 2.2: Classification of the SMME Sector (South Africa)

Column 1	Column 2	Column 3	Column 4	Column 5
Standard Industrial Classification (SIC)		Less than	Less than	Less than
Agriculture	Medium	100	R2.80m	R2.80m
	Small	50	R1.25m	R1.25m
	Very Small	10	R0.25m	R0.25m
	Micro	5	R0.15m	R0.10m
Mining and Quarrying	Medium	200	R40.00m	R30.0m
	Small	50	R10.00m	R7.50m
	Very Small	20	R4.00m	R3.00m
	Micro	5	R0.15m	R0.10m
Manufacturing	Medium	200	R25.00m	R7.50m
	Small	50	R6.00m	R1.75m
	Very Small	20	R2.00m	R0.60m
	Micro	5	R0.15m	R0.10m
Construction	Medium	200	R18.00m	R3.50m
	Small	50	R4.00m	R0.80m
	Very Small	20	R0.50m	R0.20m
	Micro	5	R0.15m	R0.10m
Retail, Motor Trade, and Repair Services	Medium	100	R25.00m	R3.00m
	Small	50	R12.50m	R1.50m
	Very Small	10	R2.50m	R0.25m
	Micro	5	R0.15m	R0.10m
Wholesale Trade, Commercial Agents, and Allied Services	Medium	100	R70.00m	R12.00m
	Small	50	R35.00m	R6.00m
	Very Small	10	R6.00m	R1.00m
	Micro	5	R0.15m	R0.10m
Catering, Accommodation, and Other Trade	Medium	100	R8.00m	R1.50m
	Small	50	R5.00m	R0.60m
	Very Small	10	R1.00m	R0.15m
	Micro	5	R0.15m	R0.10m

Transport, Storage, and Communication	Medium	100	R12.00m	R3.00m
	Small	50	R6.00m	R1.20m
	Very Small	10	R1.20m	R0.25m
	Micro	5	R0.15m	R0.10m
Finance and Business Services	Medium	100	R10.00m	R2.00m
	Small	50	R3.00m	R0.60m
	Very Small	10	R0.50m	R0.20m
	Micro	5	R0.15m	R0.10m
Community, Social, and Personal Services	Medium	100	R9.00m	R4.50m
	Small	50	R4.50m	R2.25m
	Very Small	10	R0.45m	R0.40m
	Micro	5	R0.15m	R0.10m

Key: Column 1 = Sector or Sub sectors, Column 2 = Size – Class, Column 3 = Total full-time of equivalent of paid employees, Column 4 = Total annual turnover, Total gross asset value (fixed property excluded).

Source: Republic of South Africa (2000:13)

Appendix 2.3: Estimated percentage distribution of private sector employment by sectors and size class in South Africa in 1997

Sector	A (%)	B (%)	C (%)	D (%)	E (%)	F (%)	Total (%)
Agriculture, forestry, and fishing	1.3	6.6	7.4	35.9	19.0	29.8	100
Mining and quarrying	0.2	1.2	1.1	0.8	3.5	93.2	100
Manufacturing	1.2	4.1	14.1	8.6	22.7	49.3	100
Construction	3.4	18.8	17.0	12.8	15.4	32.6	100
Wholesale trade	0.2	3.5	12.3	14.4	9.7	60.0	100
Retail trade	6.8	22.7	16.3	16.7	5.0	32.6	100
Catering and accommodation	1.0	9.6	17.2	31.2	12.1	28.8	100
Transport, storage and communication	2.8	27.2	14.5	11.5	7.7	36.4	100
Finance and business services	1.2	10.7	19.1	14.8	3.4	50.8	100
Community, social and other personal services	3.0	16.5	27.7	15.5	6.1	31.2	100
Total	2.5	11.4	14.4	16.6	12.3	42.7	100
Number	184400	59358	1068400	1226000	909900	3159900	7397200

Key: A= Survivalists, B = Micro, C = Very small, D = Small, E = Medium, F = Large

Source: Adopted from Ntsika (2000:35)

Appendix 2.4 Most important constraints to expansion perceived by enterprise managers, and by sector

	A	B	C	D	E	F	G	H	I	J	Total
No response	-	-	-	1	2	-	-	-	-	1	4
Yes											
Most important constraint											
Cannot obtain local raw materials	3	7	3	7	1	2	5	1	2	10	41
Cannot obtain imported raw materials	-	1	2	4	-	-	-	-	-	-	7
Lack of credit for working capital	6	33	22	59	20	6	43	5	5	47	246
Lack of credit for new capital	4	9	5	15	3	-	3	6	-	2	47
Can obtain credit but cost is too high	1	1	-	-	-	-	-	-	1	-	3
Cannot obtain machinery or equipment	-	2	4	9	5	1	-	2	-	6	29
Lack of Skilled labour	-	-	1	1	-	2	1	-	1	2	8
Wages of labour is too high	-	-	-	-	1	-	-	-	-	-	1
Electricity problems	-	1	-	2	-	-	-	-	-	1	4
Transport cost too high	3	-	1	2	1	-	3	-	-	1	11
Heavy taxes	-	2	-	1	2	1	2	-	-	9	17
Heavy bureaucracy	-	1	-	-	1	1	1	-	2	1	7
Regulations change too often	-	6	3	2	2	-	3	2	-	1	19
No foreign exchange	-	-	-	1	-	-	-	-	-	-	1
Other	3	7	1	13	3	3	10	-	1	9	50
Total	20	70	42	116	39	16	71	16	12	89	491
No constraint	1	7	4	16	2	3	5	1	2	10	51
Total	21	77	46	133	43	16	76	17	14	100	546

Key: A = Forestry, B = Food manufacturing, C = Other consumer goods, D = Intermediate, and capital goods Manufacturing, E = Household industries manufacturing, F = Construction, G = Commerce, H = Transport and communication services, I = Health and education services, J = Other services

Source: Bagachwa *et al* (1991:38) – Urban enterprises survey 1991

Appendix 3.1 List of tertiary institutions in Tanzania

University Level Institutions:

1. The University of Dar es Salaam (UDSM). The University is located at the Observation Hill, Ubungo area, about 12 kilometers from DSM City centre. Contact: UDSM, P.O. Box 35091, Dar es Salaam, TANZANIA. Tel: 255-22-2110500/82. Website: www.udsm.ac.tz
2. Sokoine University of Agriculture (SUA). The University is situated three kilometers South of Morogoro town, which is about 200 kms west of Dar es Salaam. Contact: SUA, P.O. Box 300, Morogoro, TANZANIA. Tel: 255-23-2603511/14. E-mail: SUA@sua.ac.tz
3. Open University Of Tanzania (OUT). P. O. Box 23409, Dar es Salaam, Dar es Salaam, Tanzania. Tel. (255) (022) 2668992, 2668445, and 2668960. Fax: (255) (022) 2668759. E-mail: avu.out@udsm.ac.tz
4. Hubert Kairuki Memorial University (HKMU). P. O. Box 65300, Dar es Salaam, Tanzania. Tel. (255) (022) 2700021/4. Fax: (255) (022) 75591 or 0811 320456. E-mail: info@hkmu.ac.tz , secvc@hkmu.ac.tz, vc@hkmu.ac.tz, or miuhs@raha.com
5. International Medical & Technological University (IMTU) P. O. Box 77594, Dar es Salaam, Tanzania. Tel. (255) (022) 2647257, 2647036, 2647037. Fax: (255) (022) 647038.
6. St. Augustine's University of Tanzania (SAUT), P. O. Box 307, Mwanza, Tanzania. Tel. (255) (028) 2552725, 2550560. Fax: (255) (028) 500575. E-mail: saut@africaonline.co.tz, saut@maf.org. Internet: <http://www.members.tripod.com/SAUT>

7. Zanzibar University (ZU), P. O. Box 2440, Zanzibar, Tanzania. . Tel. (255) (024) 2232642, 2236388. E-mail: zanvarsity@zitec.org.
8. Tumaini University (TU), P. O. Box 2200, Moshi, Tanzania. . Tel. (255) (027) 275291. Fax: (255) (027) 2753612. E-mail: kcmc@eoltz.com.
9. University of Bukoba (UOB).). P. O. Box 1725, Bukoba, Tanzania. . Tel. (255) (028) 2220979. Fax: (255) (028) 2220979. E-mail: uob@udsm.ac.tz.

University Colleges:

1. University College of Lands and Architectural Studies (UCLAS).
Contact: UCLAS, P.O. Box 35176, Dar es Salaam, Tanzania.
Tel. (255) (022) 275004, 272291/2. Fax: (255) (022) 75448 & 75479. E-mail: alfeo@uclas.ud.co.tz.
2. Muhimbili University College of Health Science (MUCHS).
Contact: MUCHS, P.O. Box 65001, Dar es Salaam, TANZANIA.
Tel: 255-22-2150331, Website: principal@muchs.ac.tz.
3. Iringa University College (IUC). Contact: P.O. Box 200, Iringa, Tanzania. Tel. (255) (026) 2720900. Fax: (255) (026) 72720904. E-mail: amblom@maf.org.
4. Kilimanjaro Christian Medical Centre (KCMC). Contact: KCMC, P.O. Box 2240, Moshi, Tanzania. Tel. (255) (027) 54377/8/9. Fax: (255) (027) 54381. E-mail: kcmc@eoltz.com.
5. Makumira University College (MUC). Contact: MUC, P.O. Box

55, Usa River - Arusha, Tanzania. Tel. (255) (027) 2548599,
2553634/5. Fax: (255) 0811 512050.

6. Waldorf College DSM Campus (WALDORF). Contact: P.O. Box
77588, Dar es Salaam, Tanzania. Tel. (255) (022) 2152285. Fax:
(255) (022) 151293. E-mail: waldorfdar@cats.net.com.

7. College of Education Zanzibar (CEZ). Contact: P.O. Box 1933,
Zanzibar, Tanzania. Tel. (255) (022) 275004, 272291/2. Fax: (255)
(022) 75448 & 75479. E-mail: alfeo@uclas.ud.co.tz.

Non University Level Institutions:

1. The Co-operative College of Moshi (CCOM). Contact: P.O. Box
35176, Moshi, Tanzania. Tel. (255) (027) 54401/4, 51833. Fax: (255)
(027) 50806

2. College of Business Education (CBE). Contact: P.O. Box 1968, Dar
es Salaam, Tanzania. Tel. (255) (022) 2150176, 2150177, 215017.
Fax: (255) (022) 150178.

3. Dar es Salaam Institute of Technology (DIT). Contact: DIT, P.O.
Box 2958, Dar es Salaam, TANZANIA. Tel: 255-22-2150174.
Fax: (255) (022) 2152504. E-mail: principaldit@intafrica.com.

4. Institute of Development Management (IDM). Contact: P.O. Box
1, Morogoro, Tanzania. Tel. (255) (023) 4380-4. Fax: (255) (023)
4011. E-mail: idm@raha.com.

5. Institute of Finance Management (IFM). Contact: P.O. Box 3918,
Dar es Salaam, Tanzania. Tel. (255) (022) 2112931-4. Fax: (255)

(022) 211935. E-mail: lfm@twiga.com

6. Dar es Salaam School of Accountancy (DSA). Contact: P.O. Box 9522, Dar es Salaam, Tanzania. Tel. (255) (022) 2851035/37, 285192. Fax: (255) (022) 851036.
7. National Institute of Transport (NIT). Contact: P.O. Box 705, Dar es Salaam, Tanzania. Tel. (255) (022) 2200148/2400260. Fax: (255) (022) 2443149. E-mail: nit@intafrica.com
8. National Social Welfare Training Institute (NSWTI). Contact: P.O. Box 3375, Dar es Salaam, Tanzania. Tel. (255) (022) 274443/2700918, 0811 341884. E-mail: nswti@twiga.com.
9. Tanzania School of Journalism (TSJ). Contact: P.O. Box 4067, Dar es Salaam, Tanzania. Tel. (255) (022) 2700236/7. Fax: (255) (022) 700239. E-mail: habari@tsj.tznet. Website: <http://www.tsj.tznet.net>
10. Institute of Community Development Tengeru (ICDT). Contact: P.O. Box 1006, Tengeru - Arusha, Tanzania. Tel. 49 (Duluti) Request through TTCL operator).
11. Institute of Accountancy Arusha (IAA). Contact: P.O. Box 2798, Arusha, Tanzania. Tel. (255) (027) 2501416, 2501413-4. Fax: (255) (027) 2508421. E-mail: iaa@habari.co.tz.
12. Institute of Rural Development Planning (IRDP). The institute is located at Miyuji area, which is about 7 kms from Dodoma city centre along Arusha Road. Contact: P.O. Box 138, Dodoma, Tanzania. Tel. (255) (026) 2302147.

Appendix 4.1 Introductory letter from the University of Natal

'True copy'

University of Natal Pietermaritzburg,
School of Business,
Faculty of Human and Management Sciences,
Private bag X01, Scottsville,
Pietermaritzburg 3209,
South Africa.
Tel: (033) 260 5909, Fax: (033) 260 5219
July 19, 2002

TO WHOM IT MAY CONCERN:

Dear Sir or Madam:

As a doctoral student in Management studies in the School of Business, Pietermaritzburg, Mr. A. N. E. Mkocha is conducting a research on, *inter alia*, the human capital aspects of small manufacturing enterprises in Tanzania. Essential to his research is the requirement of primary data on activities of Tanzanian small manufacturing enterprises.

This letter is to request your cooperation to enable Mr. Mkocha to conduct his survey amongst Tanzanian manufacturing ventures. It is expected that the data gathered will provide policy guidance for future training and education activities for Tanzanian small and micro manufacturing ventures.

Rest assured that the data gathered would be strictly confidential. Should you need further information on this matter, please contact the undersigned.

Thanks for your favourable co-operation.
Yours faithfully

Signed by
Dr. D. Mahadea
School of Business
(Doctoral Project Supervisor)

'True copy'

Appendix 4.2 Introductory letter from the Ministry of Industry and Trade

(Tanzania)

‘True copy’

**THE UNITED REPUBLIC OF TANZANIA
MINISTRY OF INDUSTRY AND TRADE**

Cables and telegram “INDTRA”
DAR ES SALAAM

*(All official communications should be
addressed to the Permanent Secretary
and not to individuals)*

P. O. BOX 9503
DAR ES SALAAM
E-mail: mit@covision2000.com
Telex: 41689 “INDIS”
Telephone: +255 51 180049/180075
Fax: +255 51 184727
WWW.tanzania.go.tz
September 2, 2002

In reply please quote:
Ref. No. HB111/407/01

Director General,
SIDO,
P. O. Box 2676,
Dar es Salaam.

Re. A LETTER OF INTRODUCTION – Mr. A. N. E. MKOCHA

The Ministry of Industry and Trade is introducing to you Mr. A. N. E. Mkocha who is conducting a research on, *inter alia* the human capital aspects of small and micro – manufacturing enterprises in Tanzania.

Please provide him with the necessary information and any other related assistance.

Signed by

Uledi A. Mussa
For: Permanent Secretary

‘True copy’

Appendix 4.3 Introductory letter from TCCIA – Tanzania

'True copy'

TANZANIA CHAMBER OF COMMERCE,
INDUSTRY AND AGRICULTURE

P. O. BOX 9713 Dar es Salaam, Tanzania Tel: 255 22 2119436/2121421 Fax: 255 22 2119437

Email: tccia.hq@cats-net.com,

Web site: <http://www.tccia.co.tz>

Tccia/gen/vol.1/136

September 3, 2002

To: All Executive Officers
TCCIA Regional Chambers

Dear Sir or Madam:

Re: INTRODUCTION OF MR. A. N. E. MKOCHA

I am introducing to you Mr. A. N. E. Mkocha who is conducting a research on inter alia, the human capital aspects of small and micro-manufacturing enterprises in Tanzania.

Please provide him with the necessary information and any other related assistance.

Hoping for your assistance

Yours sincerely,
TCCIA

Signed by
Mariot M. Kalanje
Executive Director

'True copy'

**Appendix 4.4 Introductory letter from the directorate of SMME of MIT
(TANZANIA)**

'True copy'

JAMHURI YA MUUNGANO WA TANZANIA
WIZARA YA VIWANDA NA BIAHARA
(Ofisi: Jengo la Ushirika, Mtaa wa Lumumba)

Anwani ya Simu: "VIWANDA"
DAR ES SALAAM
Simu: 255 22 180049/50

S. L. P. 9503,
DAR ES SALAAM
Email: mit@covision2000.com
WWW.tanzania.go.tz

(Barua zote ziandikwe kwa Katibu Mkuu na sio kwa watu binafsi)
Septemba 2, 2002

KWA YETOTE ANAYEHUSIKA

Ndugu Mkocha ambaye ni mwanafunzi wa Chuo Kikuu cha Natal, anafanya utafiti unaohusiana na viwanda vidogo. Amefika hapa wizarani kwa ajili ya kuomba msaada wa kuweza kutembelea viwanda vidogo katika baadhi ya mikoa ya Tanzania.

Ili kufanikisha utafiti wake kwa ajili ya masomo yake tunaomba apewe msaada atakaohitaji kwako ili aweze kuwafikia walengwa wa viwanda anavyovihitaji hapo mkoani kwako.

Tunatanguliza ushirikiano wetu kwa ushirikiano wenu.

Signed by

C Ishebabu
Kny Katibu Mkuu

'True copy'

Appendix 4.5 SMMV interview schedule

UNIVERSITY OF KWAZULU NATAL, PIETERMARITZBURG
SCHOOL OF BUSINESS

Date

To: Owner-managers of Small and Micro Manufacturing Ventures (SMMVs)

Introduction

I am a student at the University of KwaZulu Natal, Pietermaritzburg conducting a study in fulfillment of the requirements for the degree of doctor of philosophy. The objective of this study is to learn more about the impact of human capital on the performance of the Tanzanian SMMVs. This enterprise has been randomly selected for this study, therefore, your opinions and information will represent the views of many enterprises like this one.

I would be grateful if you will spare some of your time to assist in this effort by answering as far as it is practicable the questions contained in this brochure. The results of this study will help policy makers, training and education providers to provide service for enhancement of this enterprise and similar ones.

Please be assured about confidentiality. I guarantee that whatever information you give will be kept strictly confidential and will be analysed along with information from others for the purpose of providing a general picture on the matter being studied.

1. Interview is in: Tanzania

2. Name of Area:

(i) Urban (...) (1)
(ii) Rural (...) (2)

SECTION A: GENERAL PROFILE OF THE ENTERPRISE

3. Zone	Southern	(...)(1)
	Lake	(...)(2)
	Northern	(...)(3)
	Eastern	(...)(4)
	Central	(...)(5)

4 Name of the Business
 Contact Address:

e-mail:
 Internet: <http://www.....>

5. When was the enterprise established (year)

6. How was the enterprise established?

- (i) Started by present owner (....)(1)
- (ii) Has been bought (....)(2)
- (iii) Taken over from father or relative (....)(3)

7. How did you obtain the money for starting this business?

- (i) Borrowing from relatives and friends (....)(1)
- (ii) Own savings (....)(2)
- (iii) Borrowing from NGOs (....)(3)
- (iv) Borrowing from Government (....)(4)
- (v) Borrowed from MFIs (....)(5)
- (vi) Other (Please specify)(6)

8. When you started this enterprise, how much money did you start with (in Tzs)?

.....

9. Since you started this enterprise, has it

- (i) Expanded? (....)(1)
- (ii) Stayed about the same? (....)(2)
- (iii) Declined (....)(3)
- (iv) About to close (....)(4)
- (v) Don't know (....)(5)

10. How well have you been able to access loan capital for business expansion from banks?

- (i) Always ☐ (1)
- (ii) Frequently ☐ (2)
- (iii) Never ☐ (3)

11. What is the main source of credit for business expansion?

- (i) Relatives and friends (....)(1)
- (ii) Formal financial institutions (....)(2)
- (iii) Informal financial institutions (NGOs) (....)(3)
- (iv) Government (....)(4)
- (v) Co-operatives (....)(5)
- (vi) NGOs (....)(6)
- (vii) Other (please specify) _____ (7)

12. What is the type of ownership of the enterprise?

- (i) Sole proprietorship (individual) (....)(1)

- (ii) Partnership (…)(2)
- (iii) Limited liability company (…)(3)
- (iv) Co-operative (…)(4)
- (v) Don't Know (…)(5)
- (vi) Other (*please specify*)..... (…)(6)

13. Do you have any other business besides this one?

- (i) Yes (…)(1)
- (x) No (…)(2)

14. How many workers are currently employed at the enterprise?

.....

15. From the total workers how many are

- (i) Female? _____ (1)
- (ii) Male? _____ (2)

16. How many workers were employed during start up of the business.....

17. From those workers; how many were

- (i) Female? _____ (1)
- (ii) Male? _____ (2)

18. How many employees (*paid and un- paid, part-time and full time*) were present in your business as of the years 1997-2001?

- (i) 1997 (1)
- (ii) 1998 (2)
- (iii) 1999 (3)
- (iv) 2000 (4)
- (v) 2001 (5)

19. To which sub-sector does the enterprise belong?

- (i) Woodwork (…)(1)
- (ii) Tailoring/sewing (…)(2)
- (iii) Edible food processing (…)(3)
- (iv) Animal food processing (…)(4)
- (v) Metalwork (…)(5)
- (vi) Leatherwork (…)(6)

20. Do you keep any records/Books for the business?

- (i) Sales (…)(1)
- (ii) Purchases (…)(2)
- (iii) Credits (…)(3)

- | | |
|-----------------------------------|----------|
| (iv) Payroll | (...)(4) |
| (v) Expenses | (...)(5) |
| (vi) Profit | (...)(6) |
| (vi) Others (please specify)..... | (7) |

SECTION B: OWNER'S PROFILE

21. Gender
- | | |
|-------------|-------------------|
| (i) Male | (...)(1) Go to 16 |
| (ii) Female | (...)(2) Go to 42 |

For question 16-67 indicate for each item, the extent of owner's agreement or disagreement with that item by entering the appropriate numeral (+4 to -4) in the space provided by each item. +4 = very strong agreement, +3 = strong agreement, +2 = moderate agreement, +1 = slight agreement, 0 = neither agreement nor disagreement, -1 = slight disagreement, -2 = moderate disagreement, -3 = strong disagreement, -4 = very strong disagreement.

A: MALE

22. I worry more about getting a bad grade than I think about getting a good grade (-) (..)1
23. I would rather work on a task where I alone am responsible for the final product than one in which many people contribute to the final product (+) (..)2
24. I more often attempt difficult tasks that I am not sure I can do than easier tasks I believe I can do. (+) (..)3
25. I would rather do something at which I feel confident and relaxed than something, which is challenging and difficult. (-) (..)4
26. If I am not good at something I would rather keep struggling to master it than move to something I may be good at. (+) (..)5
27. I would rather have a job in which my role is clearly defined by others and my rewards could be higher than average, than a job in which my role is to be defined by me and my rewards are average. (-) (..)6
28. I would prefer a well-written informative book to a good movie. (+) (..)7
29. I would prefer a job, which is important, difficult, and involves a 50 % chance of failure to a job, which is somewhat important but not difficult. (+) (..)8
30. I would rather learn fun games that most people know than learn unusual skill game, which only a few people would know. (-) (..)9

31. It is very important for me to do my work as well as I can even if it means not getting along well with my co-workers. (+) (...)10
32. For me, the pain of getting turned down after a job interview is greater than the pleasure of getting hired. (-) (...)11
33. If I am going to play cards I would rather play a fun game than a difficult thought game. (-) (...)12
34. I prefer competitive situations in which I have superior ability to those in which everyone involved is about equal in ability. (-) (...)13
35. I think more of the future than of the present and the past. (+) (...)14
35. I am more unhappy about doing something badly than I am happy about doing something well. (-) (...)15
37. In my spare time I would rather learn a game to develop skills than for recreation. (+) (...)16
38. I would rather run my own business and face a 50 % chance of bankruptcy than work for another firm. (+) (...)17
39. I would rather take a job in which the starting salary is US\$ 10,000 and could stay that way for sometime than a job in which the starting salary is US\$ 5,000 and there is a guarantee that within five years I will be earning more than US\$ 10,000. (-)(...)18
40. I would rather play in a team game than compete with just one person. (-) (...)19
41. The thing that is most important for me about learning to play a musical instrument is being able to play it very well, rather than learning it to have a better time with my friends. (+) (...)20
42. I prefer multiple-choice questions on exams to essay questions. (-) (...)21
43. I would rather work on commission which is somewhat risky but where I would have the possibility of making more than working on a fixed salary. (+) (...)22
44. I think I hate losing more than I love winning. (-) (...)23
45. I would rather wait one or two years and have my parents buy me one great gift than have them buy me several average gifts over the same period of time. (+) (...)24

46. If I were to learn to one or two incomplete tasks, I would rather return to the difficult than the easy one. (+) (...)25

47. I think more about my past accomplishments than about my future goals. (-) (...)26

B: FEMALE

48. I think more about getting a good grade than I worry about getting a bad grade (-) (...)1

49. I more often attempt difficult tasks that I am not sure I can do than easier tasks I believe I can do. (+) (...)2

50. I would rather do something at which I feel confident and relaxed than something, which is challenging and difficult. (-) (...)3

51. If I am not good at something I would rather keep struggling to master it than move to something I may be good at. (+) (...)4

52. I would rather have a job in which my role is clearly defined by others and my rewards could be higher than average, than a job in which my role is to be defined by me and my rewards are average. (-) (...)5

53. My strongest feelings are aroused more by fear of failure than by hope of success. (-) (...)6

54. I would prefer a well-written informative book to a good movie. (+) (...)7

55. I would prefer a job, which is important, difficult, and involves a 50 % chance of failure to a job, which is somewhat important but not difficult. (+) (...)8

56. I would rather learn fun games that most people know than learn unusual skill game, which only a few people would know. (-) (...)9

57. It is very important for me to do my work as well as I can even if it means not getting along well with my co-workers. (+) (...)10

58. For me, the pain of getting turned down after a job interview is greater than the pleasure of getting hired. (-) (...)11

59. If I am going to play cards I would rather play a fun game than a difficult thought game. (-) (...)12

60. I prefer competitive situations in which I have superior ability to those in which everyone involved is about equal in ability. (-) (...)13

61. I think more of the future than of the present and the past. (+) (...)14

62. I am more unhappy about doing something badly than I am happy about doing something well. (-) (...)15
63. I worry more about whether people will praise my work than I do about whether they will criticize it. (+) (...)16
64. If I had to spent my money myself I would rather have an exceptional meal out than spend less and prepare an exceptional meal at home. (-) (...)17
65. I would rather do a paper on my own than take a test. (+) (...)18
66. I would rather share in the decision making process of a group than take total responsibility for directing the group's activities. (-) (...)19
67. I would rather try to make new and interesting meals that may turn out badly than more familiar meals that frequently turn out well. (+) (...)20
68. I would rather do something I enjoy than do something that I think is worthwhile but not much fun. (-) (...)21
69. I would rather try to get two or three things done quickly than spend all my time my time working on one project. (-) (...)22
70. If I am ill and must stay home, I use the time to relax and recuperate rather than try to read or work. (-) (...)23
71. If I were rooming with a number of girls and we decide to have a party, I would rather organize the party myself than have one of the others organize it. (+) (...)24
72. I would rather cook for a couple of gourmet eaters than for a couple who simply have huge appetites. (+) (...)25
73. I would rather that our women's group be allowed to help organize city projects than be allowed to work on the projects after they have been organised. (+) (...)26
74. When you started this business, how did you learn to conduct this business?
- | | |
|-----------------------------------|----------|
| (i) Previous experience | (...)(1) |
| (ii) Formal training | (...)(2) |
| (iii) Formal education | (...)(3) |
| (iv) Apprenticeship | (...)(4) |
| (v) Assistance from others | (...)(5) |
| (vi) Other (please specify) | (6) |
75. What is your highest level of education?

		Duration
1	Never went to school	
2	Primary education	
3	Secondary education	
4	Diploma	
5	Bachelors degree	
6	Masters	
7	Doctoral degree	
8	Others (please indicate	

76. Who paid for your formal education?

- (i) Parents (..)(1)
- (ii) Government (..)(2)
- (iii) Foreign scholarship (..)(3)
- (iv) Employing enterprise (..)(4)
- (v) Personally (..)(5)
- (vi) NGOs (..)(6)
- (vii) Others (please specify.....) (..)(7)

77. In your view how much did it cost to attain the level of education in 69A above (in TAS)?

.....

78. After completing your formal education did you attend any further long-term training of more than 12 months?

- (i) Yes (..)(1) Go to 71
- (ii) No (..)(2) go to 73

79. How long (in years) did the training take?

- (i) One year (..)(1)
- (ii) Two years (..)(2)
- (iii) Three or More (..)(3)

80. Indicate the nature of long-term training exposed to in the past five years?

- (i) Book-keeping (..)(1)
- (ii) Accountancy (..)(2)
- (iii) Business management (..)(3)
- (iv) Motivational training (..)(4)
- (v) Business Planning (..)(5)
- (vi) Marketing Management (..)(6)
- (vii) Networking (..)(7)

- (viii) Creativity (....)(8)
- (ix) Others (please specify.....) (9)

81. Who paid for your training?

- (i) Parents (....)(1)
- (ii) Government (....)(2)
- (iii) Foreign scholarship (....)(3)
- (iv) Employing enterprise (....)(4)
- (v) Personally (....)(5)
- (vi) NGOs (....)(6)
- (vii) Others (please specify.....) (....)(7)

82. Have you attended (any) off-the-job training course(s) of less than 12 months?

- (i) Yes (....)(1) Go to 74
- (ii) No (....)(2) Go to 79

83. What was the nature of off-the-job training have you attended

- (i) Workshop (....)(1)
- (ii) Case Studies (....)(2)
- (iii) Mentor presentations (....)(3)
- (iv) Other, (please specify) (....)(4)

84. When was the recent off-the-job training course conducted?

86. What was the duration of the recent off-the-job training course (in weeks)?
.....

86. How many times have you attended off-the-job training in the period 1997-2001?

- (i) 1997 (1)
- (ii) 1998 (2)
- (iii) 1999 (3)
- (iv) 2000 (4)
- (v) 2001 (5)
- (vi) None (6)

87. What did you do before starting in this business?

- (i) Ran similar other business (....)(1)
- (ii) Employed in other business (....)(2)
- (iii) Employed in public company (....)(3)
- (iv) Government employee (....)(4)
- (v) Unemployed (....)(5)
- (vi) Full-time student (....)(6)
- (vii) Ran another different business (....)(7)
- (viii) Other, (please specify)..... (....)(8)

88. If you were an employee *Please complete your employment history by answering the following questions.*

- (i) Indicate the number of years of previous managerial experience before establishing this business
- (ii) Indicate the number of years of business ownership previous to establishing the current business
- (iii) Indicate the number of years of occupational experience in firm(s), which were producing the same products as does the current firm
- (iv) Indicate the number of years of occupational experience in firm(s), which were producing completely different products to the current firm

89. Are you satisfied with the level of skills and knowledge you have for conducting this business?

- (i) Yes (.....)(1)
- (ii) No (.....)(2) Go to 29
- (iii) Don't know (.....)(3)

90. If Not In what ways can the skills and knowledge be improved?

- (i) Off-the-job training (.....)(1)
- (ii) Apprenticeship (.....)(2)
- (iii) On-the-job training and coaching (.....)(3)
- (iv) Other, (please specify)..... (.....)(4)

SECTION C: EVALUATION OF THE off-the-job training RECENTLY ATTENDED.

91. Did you experience any disappointment from the recently attended off-the-job training program? *In this context, please indicate on a five-point scale ranging from never disappointed = 1, sometimes disappointed = 2, undecided = 3, often disappointed = 4, very often disappointed = 5 (please tick).*

	Never disappointed	Sometimes disappointed	Undecided	Often disappointed	very often disappointed
(1)	(2)	(3)	(4)	(5)	
[...]	[...]	[...]	[...]	[...]	

92. Please indicate your opinion regarding satisfaction or dissatisfaction with the following aspects of the recently attended off-the-job training program: *In this context, please indicate on a five-point scale ranging from strongly dissatisfied = 1, dissatisfied = 2, undecided = 3, satisfied = 4, strongly satisfied = 5, the significance of the listed consideration*

	(1)	(2)	(3)	(4)	(5)
(i) Variety and range of fields of training	(...)	(...)	(...)	(...)	(...)
(ii) Availability of trainers for consultation	(...)	(...)	(...)	(...)	(...)
(iii) Development of needed skills	(...)	(...)	(...)	(...)	(...)
(iv) Use of facilities	(...)	(...)	(...)	(...)	(...)

(v) Use of practical experience	(...)	(...)	(...)	(...)	(...)
(vi) Use of case studies	(...)	(...)	(...)	(...)	(...)
(vii) General ability to communicate clearly	(...)	(...)	(...)	(...)	(...)
(viii) Knowledge of trainers	(...)	(...)	(...)	(...)	(...)
(ix) Effectiveness in response to questions	(...)	(...)	(...)	(...)	(...)
(x) Effectiveness of trainers in making presentations	(...)	(...)	(...)	(...)	(...)

93. In your opinion, how important are the following items regarding the training programs for SMMVs? *In this context, please indicate on a five-point scale ranging from not very important = 1, not important = 2, undecided = 3, important = 4, very important = 5, the significance of the listed consideration*

	(1)	(2)	(3)	(4)	(5)
(i) On-the-job training	(...)	(...)	(...)	(...)	(...)
(ii) Off-the-job training	(...)	(...)	(...)	(...)	(...)
(iii) Business Skills training	(...)	(...)	(...)	(...)	(...)
(iv) Motivational training	(...)	(...)	(...)	(...)	(...)
(v) Vocational training	(...)	(...)	(...)	(...)	(...)

94. Indicate from the list below what would be the decision criterion to attend an off-the-job training program. *In this context, please indicate on a five-point scale ranging from not very important = 1, not important = 2, undecided = 3, important = 4, very important = 5, the significance of the listed consideration*

	(1)	(2)	(3)	(4)	(5)
(i) The credibility of trainers	(...)	(...)	(...)	(...)	(...)
(ii) Trustworthiness of trainers	(...)	(...)	(...)	(...)	(...)
(iii) Distance to the training place	(...)	(...)	(...)	(...)	(...)
(iv) Cost Vs benefit of the training program	(...)	(...)	(...)	(...)	(...)
(v) Competence of the trainers	(...)	(...)	(...)	(...)	(...)
(vi) Duration of the training program	(...)	(...)	(...)	(...)	(...)
(vii) Credibility of the institution	(...)	(...)	(...)	(...)	(...)
(viii) Courtesy of the trainers	(...)	(...)	(...)	(...)	(...)

95. How much of what you learned in the previous off-the-job training program on SMMVs is being used in your Business?

(i) 80 -100%	(...)	(1)
(ii) 60 –79%	(...)	(2)
(iii) 40 - 59%	(...)	(3)
(iv) 1 - 39%	(...)	(4)
(v) 0%	(...)	(5)

96. How much of what you learned in the previous on-the-job training program on SMMV is being used in your Business?

- (i) 80 -100% (...) (1)
- (ii) 60 -79% (...) (2)
- (iii) 40 - 59% (...) (3)
- (iv) 1 - 39% (...) (4)
- (v) 0% (...) (5)

97. Which of the following barriers, if any, will make it difficult for you to apply what you have learned in the training and education programs? (please indicate by ticking the items that seem to be true for you).

- (i) ☐ The risk of trying to use the learned skills in this business is great. (1)
- (ii) ☐ I am uncertain about whether employees in the enterprise will understand (2)
- (iii) ☐ I lack people to talk to who could help me and give the encouragement to proceed, if I am stuck (3).
- (iv) ☐ It is not clear what is the expected performance results from putting into practice the learned skills and knowledge (4).
- (v) ☐ I have not seen or heard others around me using the learned approaches (5)
- (vi) ☐ Other _____ (6)

SECTION D: THE PROFILE OF EMPLOYEES IN THE ENTERPRISE

98. What is the highest education level of the employees in the enterprise (please give the number of employees in each of the range given below owner included)?

		Total	No. of employees	Duration(in years)
1	Never went to school			
2	Primary education			
3	Secondary education			
4	Bachelors degree			
5	Diploma			
6	Masters			
7	Doctoral degree			
8	Others (please indicate)			
9	Accumulated duration of education for all employees			

99. How many employees have attended off-the-job training in the period 1997-2001?

- (i) 1997 (1)
- (ii) 1998 (2)
- (iii) 1999 (3)
- (iv) 2000 (4)

- (v) 2001 (5)
 (vi) None (6)

100. How many employees have attended on-the-job training in the period 1997-2001?

- (i) 1997 (1)
 (ii) 1998 (2)
 (iii) 1999 (3)
 (iv) 2000 (4)
 (v) 2001 (5)
 (vi) None (6)

101. For how long have the employees been working in this enterprise (please give the number of employees in each of the range given below)

	Duration (in years)	No. of Employees	Total
1	Less than 5 years		
2	6		
3	7		
4	8		
5	9		
6	10		
7	11		
8	Over 11 years		
9	Accumulated Tenure for all employees		
10	Average tenure in the enterprise		

SECTION E: THIS SECTION TRIES TO MEASURE VARIOUS PERFORMANCE INDICATORS OF THE ENTERPRISE

102. Please indicate the annual Sales of the enterprise as of the years 1997-2001

- (i) 1997 (1)
 (ii) 1998 (2)
 (iii) 1999 (3)
 (iv) 2000 (4)
 (v) 2001 (5)

103. Please indicate the annual income before tax of the enterprise as of the years 1997-2001

- (i) 1997 (1)
 (ii) 1998 (2)
 (iii) 1999 (3)
 (iv) 2000 (4)
 (v) 2001 (5)

104. What is the source of power for your machines?

- (i) Electricity (…)(1)
- (ii) Manual (…)(2)
- (iii) Both (…)(3)

105. Where do most of your customers come from? (Indicate the location of customer by ticking where appropriate)

- (i) Local area (within the village town, and region) (…)(1)
- (ii) Domestic (in another town, region) (…)(2)
- (iii) Domestic and Foreign (…)(3)

SECTION F: THIS SECTION CONTAINS GENERAL QUESTIONS OF UNDERSTANDING

106. Which of the following sources provide the most useful learning experience?

- (i) Formal education (…)(1)
- (ii) On-the-job training programs (…)(2)
- (iii) Off-the-job training programs (…)(3)
- (iv) Apprenticeship (…)(4)
- (v) All of the above (…)(5)
- (vi) None of the above (please specify) _____ (…)(6)

107. Indicate which of the following skills do you think is/are the most pressing future training needs (please tick the items that seem to be true for you)

- (i) Networking skills (…)(1)
- (ii) Marketing Skills (…)(2)
- (iii) Computational Skills (…)(3)
- (iv) Business Planning (…)(4)
- (v) Leadership Skills (…)(5)
- (vi) Administrative skills (…)(6)
- (vii) Innovation Skills (…)(7)
- (viii) Opportunism and judgment (…)(8)
- (ix) Self learning Skills (…)(9)
- (x) New product development (…)(10)
- (xi) Organisational skills (…)(11)
- (xii) Goal setting Skills (…)(12)
- (xiii) Cognitive skills (…)(13)
- (xiv) Achievement motivation (…)(14)

SECTION G: THE GOVERNMENT AND SMMV SECTOR

108. Please indicate on a five point scale (i.e., always = 1, frequently = 2, sometimes = 3, and never = 4), the five most important policy issues, which in your opinion pose obstacles in doing business (please circle your choice).

		Most				least
<i>a.</i>	Regulations for business start-up	1	2	3	4	(1)
<i>b.</i>	Price controls	1	2	3	4	(2)
<i>c.</i>	Foreign trade regulations (import and export)	1	2	3	4	(3)
<i>d.</i>	Business financing	1	2	3	4	(4)
<i>e.</i>	Labour regulations	1	2	3	4	(5)
<i>f.</i>	Foreign currency regulations	1	2	3	4	(6)
<i>g.</i>	Tax regulations	1	2	3	4	(7)
<i>h.</i>	Inadequate supply of infrastructure	1	2	3	4	(8)
<i>i.</i>	Safety regulations	1	2	3	4	(9)
<i>j.</i>	Environmental regulations	1	2	3	4	(10)
<i>k.</i>	Inflation	1	2	3	4	(11)
<i>l.</i>	Crime	1	2	3	4	(12)
<i>m.</i>	Corruption	1	2	3	4	(13)
<i>n.</i>	Tribalism	1	2	3	4	(14)
<i>o.</i>	Terrorism	1	2	3	4	(15)
<i>p.</i>	Labour skills	1	2	3	4	(16)
<i>q.</i>	Reliability of market	1	2	3	4	(17)

109. How would you generally rank the efficiency of the government in providing training and education services to SMMVs?

- | | | |
|----------------------------|--------------------------|-----|
| <i>a.</i> Very efficient | <input type="checkbox"/> | (1) |
| <i>b.</i> Efficient | <input type="checkbox"/> | (2) |
| <i>c.</i> Inefficient | <input type="checkbox"/> | (3) |
| <i>d.</i> Very inefficient | <input type="checkbox"/> | (4) |

SECTION H: THIS SECTION CONTAINS QUESTIONS THAT HELP IN PLACING YOUR ANSWER AND MAKE COMPARISON WITH OTHERS. (Kindly assist in answering the following questions.

110 What is your marital status?

- | | |
|-------------------|----------|
| (a) Married | (...)(1) |
| (b) Single | (...)(2) |
| (c) Single parent | (...)(3) |
| (d) Separated | (...)(4) |
| (e) Divorced | (...)(5) |

- (f) Widowed (....)(6)
(g) None (specify please)..... (7)

111. Which of the following age categories do you belong to?

- (a) Less than 25 years (....)(1)
(b) 25 - 34 years (....)(2)
(c) 35 - 44 years (....)(3)
(d) 45 - 54 years (....)(4)
(e) 55 years or above (....)(5)

END

Thank you very much for the time you spent and patience to answer these questions. It was most interesting talking to you. The information on your perception and enterprise statistics is very important for the evaluation of the training and education programs for SMMV sector and the formulation of suitable policy advice for the sector.

THANK YOU VERY MUCH FOR YOUR COOPERATION

Appendix 6.1: A summary of T-tests for venture productivity by human capital development

Grouping variable	Assumption	Levene's test for equality of variances		t-test for equality of means		
		F	p-value	t	df	p-value
Entrepreneur education	No equal variances	12.452	.001	2.326	170.573	.021
Entrepreneur training	No equal variances	16.901	.000	2.962	129.73	.004
Employee education	No equal variances	21.311	.000	3.064	138.028	.003
Employee experience	No equal variances	18.622	.000	3.712	138.567	.000

Appendix 6.2: Summary of stages in selecting the best model

Model summaries

Model	R	R-square	Adjusted R-squares	df	F	p
1	.592	.351	.323	(191,8)	12.888	.000
2	.592	.351	.327	(192,7)	14.806	.000
3	.592	.35	.33	(193,6)	17.357	.000
4	.59	.348	.332	(194,5)	20.743	.000
5	.585	.343	.329	(195,5)	25.415	.000

Model	Variable	B	Std. Error	Beta	t	p
1	(Constant)	-118584.2	38807.07		3.056	.003
	Capital	2.398E-03	.001	.292	4.335	.000
	Entrepreneur education	1416.510	1764.86	.062	.803	.423
	Employee education	11056.37	3650.30	.231	3.029	.003
	Employee experience	5822.23	1223.16	.290	4.760	.000
	Entrepreneur experience	207.00	1309.95	.010	.158	.875
	Employee training	4153.96	2185.11	.131	1.901	.059
	Entrepreneur nAch	25.703	610.09	.003	.042	.966
	Entrepreneur training	815.52	677.93	.080	1.203	.230
2	(Constant)	-117420.5	27188.18		4.319	.000
	Capital	2.400E-03	.001	.293	4.372	.000
	Entrepreneur education	1413.749	1759.05	.061	.804	.423
	Employee education	11071.53	3623.05	.232	3.056	.003
	Employee experience	5823.33	1219.69	.290	4.774	.000
	Entrepreneur experience	208.095	1306.28	.010	.159	.874
	Employee training	4141.38	2158.99	.130	1.918	.057
	Entrepreneur training	812.54	672.47	.079	1.208	.228
3	(Constant)	-117166.3	27072.71		4.328	.000
	Capital	2.404E-03	.001	.293	4.397	.000
	Entrepreneur education	1370.57	1733.65	.060	.791	.430
	Employee education	11154.39	3576.46	.233	3.119	.002
	Employee experience	5853.95	1201.40	.292	4.873	.000
	Employee training	4105.49	2141.77	.129	1.917	.057
	Entrepreneur training	832.84	658.61	.081	1.265	.208

4	(Constant)	-115123.6	26923.07		4.276	.000
	Capital	2.439E-03	.001	.297	4.479	.000
	Employee education	12676.68	3010.92	.265	4.210	.000
	Employee experience	5724.13	1188.98	.286	4.814	.000
	Employee training	4378.02	2111.80	.138	2.073	.039
	Entrepreneur training	855.81	657.33	.084	1.302	.194
5	(Constant)	-120857.2	26607.75		4.542	.000
	Capital	2.524E-03	.001	.308	4.661	.000
	Employee education	13835.60	2881.46	.290	4.802	.000
	Employee experience	5852.02	1187.02	.292	4.930	.000
	Employee training	4901.77	2076.82	.154	2.360	.019

- Model 1 predictors: (Constant), Entrepreneur training, Employee experience, Entrepreneur nAch, Entrepreneur experience, Capital, Entrepreneur education, Employee training, Employee education.
- Model 2 predictors: (Constant), Entrepreneur training, Employee experience, Entrepreneur experience, Capital, Entrepreneur education, Employee training, Employee education.
- Model 3 predictors: (Constant), Entrepreneur training, Employee experience, Capital, Entrepreneur education, Employee training, Employee education.
- Model 4 predictors: (Constant), Entrepreneur training, Employee experience, Capital, Employee training, Employee education.
- Model 5 predictors: (Constant), Employees experience, Capital, Employee training, Employee education.

Dependent variable: Sales

Appendix 6.3: Output from SPSS's backward method of eliminating independent variables (Cobb-Douglass production function)

Model summaries

Model	R	R Square	Adjusted R Square	Std. Error
1	.719	.517	.494	.47945
2	.719	.517	.496	.47822
3	.718	.516	.498	.47738
4	.717	.514	.499	.47683
5	.715	.511	.499	.47720

ANOVA test for each model

Model		Sum of Squares	df	Mean Square	F	p
1	Regression	46.694	9	5.188	22.570	.000
	Residual	43.675	190	.230		
2	Regression	46.688	8	5.836	25.519	.000
	Residual	43.681	191	.229		
3	Regression	46.613	7	6.659	29.219	.000
	Residual	43.756	192	.228		
4	Regression	46.487	6	7.748	34.077	.000
	Residual	43.881	193	.227		
5	Regression	46.192	5	9.238	40.570	.000
	Residual	44.177	194	.228		

1. Predictors: (Constant), Log(entrepreneur training), Log(employee experience), Log(entrepreneur nAch), Log(number of employees), Log(entrepreneur experience), Log(employee education), Log(physical capital), Log(entrepreneur education), Log(employee training)

2. Predictors: (Constant), Log(entrepreneur training), Log(employee experience), Log(number of employees), Log(entrepreneur experience), Log(employee education), Log(physical capital), Log(entrepreneur education), Log(employee training)
3. Predictors: (Constant), Log(entrepreneur training), Log(employee experience), Log(number of employees), Log(employee education), Log(physical capital), Log(entrepreneur education), Log(employee training)
4. Predictors: (Constant), Log(entrepreneur training), Log(employee experience), Log(number of employees), Log(physical capital), Log(entrepreneur education), Log(employee training)
5. Predictors: (Constant), Log(entrepreneur training), Log(employee experience), Log(physical capital), Log(entrepreneur education), Log(employee training)
- Dependent Variable: Log(Sales)

T-test of coefficients for each model

Model		Unstandardised Coefficients		Standardised Coefficients	t	p	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	.233	.805		.290	.773		
	Capital	.454	.069	.388	6.558	.000	.726	1.377
	Labour	.148	.134	.068	1.106	.270	.681	1.467
	Entrepreneur education	.551	.216	.153	2.556	.011	.709	1.410
	Entrepreneur experience	4.745E-02	.083	.030	.572	.568	.929	1.076
	Entrepreneur nAch	6.361E-02	.402	.008	.158	.874	.928	1.077
	Employee education	.215	.301	.041	.713	.477	.769	1.301
	Employee experience	1.043	.111	.499	9.402	.000	.904	1.106
	Employee	.156	.124	.076	1.257	.210	.699	1.431

	training							
	Entrepreneur training	.119	.062	.105	1.914	.057	.842	1.187
2	(Constant)	.338	.455		.742	.459		
	Capital	.454	.069	.389	6.599	.000	.729	1.371
	Labour	.145	.132	.066	1.098	.274	.697	1.435
	Entrepreneur education	.552	.215	.153	2.570	.011	.710	1.409
	Entrepreneur experience	4.751E-02	.083	.030	.574	.567	.929	1.076
	Employee education	.208	.297	.040	.699	.485	.785	1.274
	Employee experience	1.043	.111	.498	9.430	.000	.906	1.104
	Employee training	.160	.121	.078	1.319	.189	.728	1.374
	Entrepreneur training	.120	.062	.106	1.935	.055	.846	1.181
3	(Constant)	.324	.454		.713	.477		
	Capital	.454	.069	.389	6.613	.000	.729	1.371
	Labour	.152	.132	.069	1.157	.249	.703	1.423
	Entrepreneur education	.536	.213	.149	2.521	.013	.723	1.383
	Employee education	.219	.296	.042	.742	.459	.789	1.268
	Employee experience	1.050	.110	.502	9.591	.000	.920	1.087
	Employee training	.152	.120	.074	1.267	.207	.736	1.358
	Entrepreneur	.125	.061	.110	2.042	.043	.864	1.157

	training							
4	(Constant)	.200	.422		.473	.636		
	Capital	.458	.069	.392	6.683	.000	.732	1.366
	Labour	.150	.131	.068	1.140	.256	.703	1.423
	Entrepreneur education	.587	.201	.163	2.922	.004	.808	1.238
	Employee experience	1.047	.109	.500	9.578	.000	.922	1.084
	Employee training	.156	.120	.076	1.301	.195	.738	1.356
	Entrepreneur training	.133	.060	.117	2.213	.028	.893	1.120
5	(Constant)	.243	.420		.579	.563		
	Capital	.482	.065	.413	7.409	.000	.812	1.231
	Entrepreneur education	.572	.201	.159	2.851	.005	.812	1.232
	Employee experience	1.044	.109	.499	9.551	.000	.923	1.084
	Employee training	.212	.110	.103	1.929	.055	.884	1.132
	Entrepreneur training	.132	.060	.116	2.189	.030	.893	1.120

Dependent Variable: Sales

Excluded Variables at each stage

		Beta In	t	p	Collinearity Statistics	
Model	Variables				Tolerance	VIF
2	Entrepreneur nAch	.008	.158	.874	.928	1.077
3	Entrepreneur nAch	.008	.161	.872	.928	1.077
	Entrepreneur experience	.030	.574	.567	.929	1.076
4	Entrepreneur nAch	.003	.053	.958	.948	1.055
	Entrepreneur experience	.032	.624	.533	.933	1.071
	Employee education	.042	.742	.459	.789	1.268
5	Entrepreneur nAch	.006	.110	.912	.968	1.033
	Entrepreneur experience	.037	.723	.471	.941	1.063
	Employee education	.040	.713	.477	.789	1.267
	Labour	.068	1.140	.256	.703	1.423

2. Predictors in the Model: (Constant), Log(entrepreneur training), Log(employee experience), Log(number of employees), Log(entrepreneur experience), Log(employee education), Log(physical capital), Log(entrepreneur education), Log(employee training)

3. Predictors in the Model: (Constant), Log(entrepreneur training), Log(employee experience), Log(number of employees), Log(employee education), Log(physical capital), Log(entrepreneur education), Log(employee training)

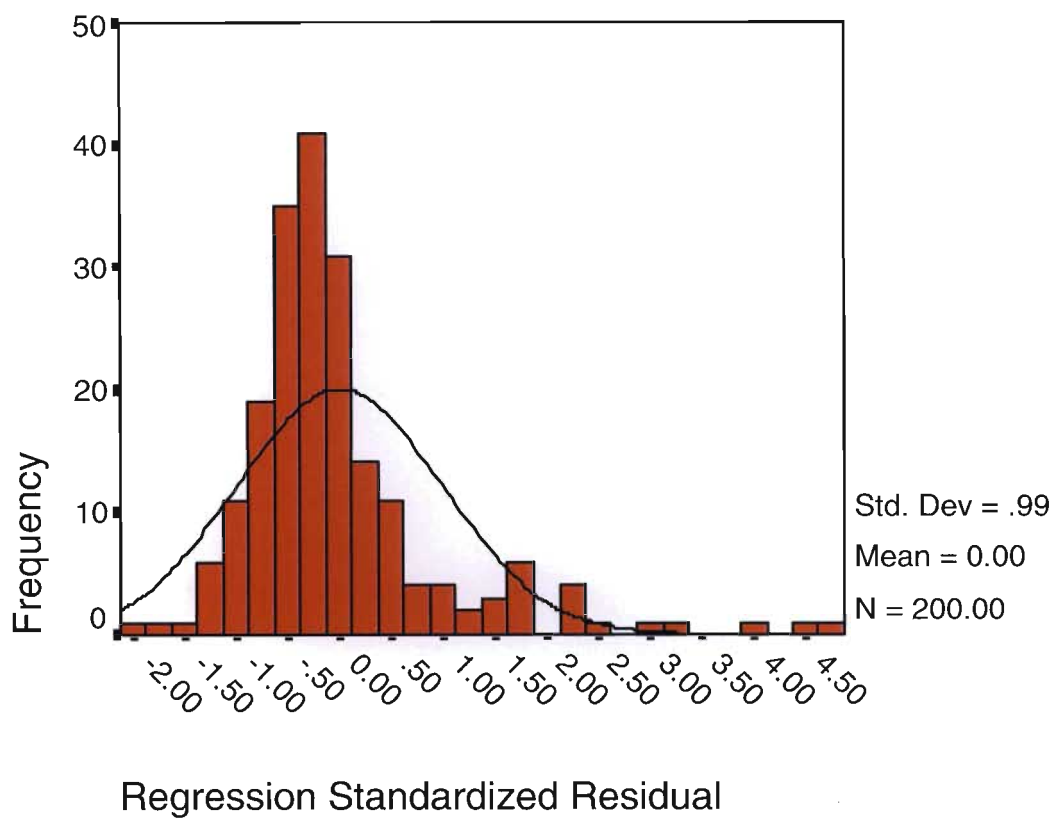
4. Predictors in the Model: (Constant), Log(entrepreneur training), Log(employee experience), Log(number of employees), Log(physical capital), Log(entrepreneur education), Log(employee training)

5. Predictors in the Model: (Constant), Log(entrepreneur training), Log(employee experience), Log(physical capital), Log(entrepreneur education), Log(employee training),
Dependent Variable: Log(sales)

Appendix 6.4: A histogram of residuals for the parsimonious regression model

Histogram

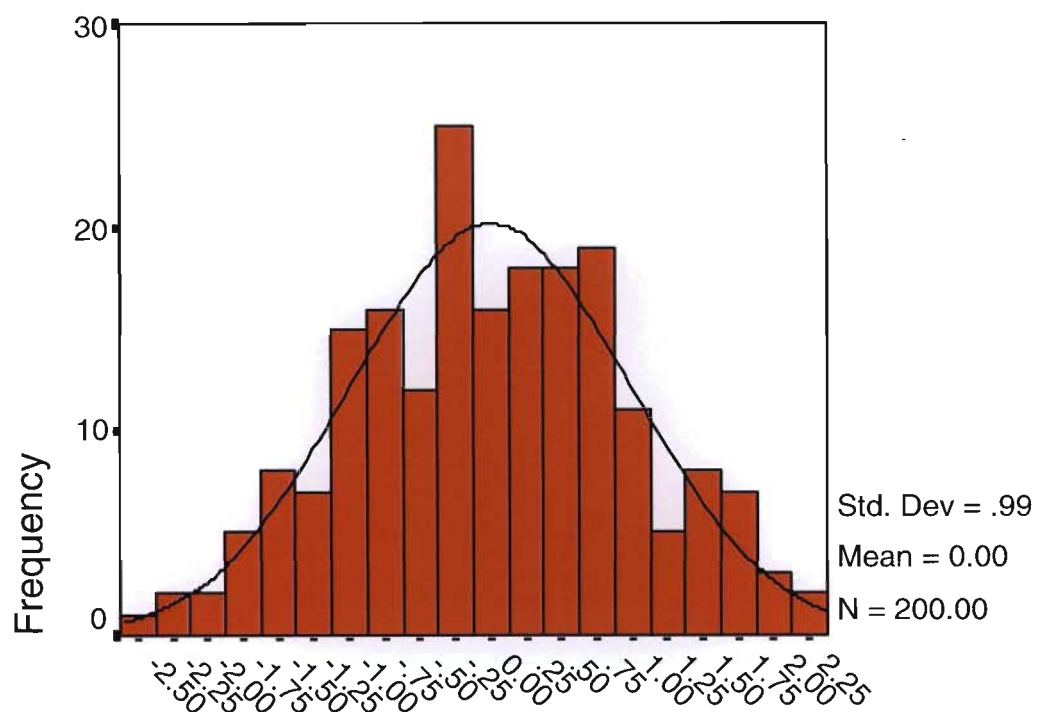
Dependent Variable: Sales



Appendix 6.5: A histogram of residuals for the preferred model

Histogram

Dependent Variable: LOGQ



Appendix 6.6: Map of Tanzania showing the sample of the study in each region

