

**SCHOOL OF ECONOMICS**

**SMALL AND MEDIUM ENTERPRISES AND JOB CREATION IN  
RWANDA**

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*In partial fulfillment of the requirements for the Master's Degree in Agricultural Economics to the  
Department of Economics.*

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**Gikondo, July 2016**

## **DEDICATION**

This Dissertation is dedicated to the Almighty God, for his Mercy and Boundless sustenance and Grace.

I can go further and dedicate this thesis to my both mums Budesiyana and Eleanor and fathers Anastase and Pastor Peter Dickson who some 22 years ago, took me at school, they happily fulfilled their responsibility. I am sure that I will try to go through their direction caring about my sons.

The thesis is also dedicated to my entire family and friends for their moral support during my studies and research.

## DECLARATION

I, Marc UWITONZE, hereby declare that this dissertation entitled “*Small and Medium Enterprises (SMEs) and Job creation in Rwanda*” is my own research work and it has never been submitted anywhere for the award of any degree. The ideas of other scholars cited in the work have been correctly referenced.

Marc UWITONZE

Signature of the graduate ..... Date 10<sup>th</sup> May, 2016

## **ACKNOWLEDGEMENTS**

It is with genuine gratitude that, I first thank Almighty God; I know that He has always been with me, led my thought and helped me to achieve my predetermined goals and targets.

I would like to thank other people who helped me to complete this thesis, directly or indirectly:

First, I would like to gratefully acknowledge the enthusiastic and tireless supervision of Dr.NDEMEZO Etienne for his strategic supervision regardless other heavy responsibilities assigned to him.

My appreciations are also extended to the officials Leaders RSVP where I got from my sponsorship especially Trustees like Dr MBARUSHIMANA Simon, Auntie Jean, Kaneza Fulgence and Japhet NDAGIJIMANA for their contribution in one way or another so that my studies goes well.

Mygratitude goes further to MUNYEMANA Emmanuel and Prof Bideri Ishuheri Nyamulindafor their work done helping, advising and facilitating me to get adequate research.

I would like to honour all Lecturers who thought at MSc Economics at University of Rwanda for their strong devotion and high professionalism spirit they render while training Rwandan Economists.

I would like to express my gratitude with sincerity to my Family as whole for their different types of support during my coursework as well as research period.

Institutionally, I would like to thank the University of Rwanda for having purchased strong sources for facilitating research in Master's program.

## **ABSTRACT**

This study analyses Small and Medium Enterprises and Job Creation for a panel of Rwandan SMEs across manufacturing and all services sectors of the economy, using LRM (Linear Regression Models) system to analyse a Panel data consisting of 453 Rwandan SMEs enterprises during 2006-2011. The conceptual framework is adopted and modified from Kristen, M and Rogerson (2002); Munikrishnan & Verakumaran (2009). The model explains the relationship between Labour productivity, Size in terms of number of employees, Fixed assets, Female owner, Manager experience, Region, machinery vehicle and equipment and Legal status of the business which eventually leads to job creation. We aimed empirically exploring the linkage between SMEs and Job creation in Rwanda. To reach objective, the panel data from census conducted by World Bank for the period 2006-2011 used. Results indicated that size in terms of number of employees, fixed assets, Machinery vehicle and equipment, Region of the business significantly contributed to job creation in SMEs. However, female owner, Labor productivity and manager experience were found to be insignificant on job creation in SMEs in Rwanda. Even though Small Enterprises were aware of government incentives do not create Job.

**Key words:** Small, Medium Enterprises (SMEs), Size of the business in terms of employee numbers, fixed assets, Female owner, Region, Legal status, Machinery vehicle and Equipment, Labour productivity, Manager Experience and Job creation.

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## **LIST OF ACRONYMS AND ABBREVIATIONS**

**BDC:** Business Development Center

**BDS:** Business Development Services

**BDSC:** Business Development Services Center

**BTC:** Belgian Technical Cooperation

**CAPMER:** Centre d'Appui aux Petites et Moyennes Entreprises

**DPs:** Development Partners

**DEFRA:**Department for Environment, Food and Rural Affairs

**EDPRS:** Economic Development and Poverty Reduction Strategy

**FDI:**Foreign Direct Investment

**GDP:** Gross Domestic Product

**GoR:** Government of Rwanda

**HIPC:** Heavily Indebted Poor Country

**HIV/AIDS:**Human Immunodeficiency virus/Acquired Immune Deficiency syndrome

**IFAD:** International Fund for Agricultural Development

**IFC:**International Finance Corporation

**IMF:**International Monetary Fund

**MFI:** Micro-finance Institutions

**MINICOM:** Ministry of Commerce

**NGO:**Non-Governmental organization

**NISR:** National Institute of Statistics of Rwanda

NUR: National University of Rwanda

OECD: Organization for Economic Cooperation and Development

PDCRE:Projet de Développement des Cultures de Rente et d'Exportation

PPPMER:Projet pour la Promotion des Petites et Micro Entreprises Rurales au Rwanda

PSF: Private Sector Federation

PSI: Policy Support Instrument

RCA: Rwanda Cooperative Agency

RDB: Rwanda Development Board

SACCO:Savings and Credit Cooperative

SAJESBM:The Southern African journal of entrepreneurship and smart Business Management.

SEZ: Special Economic Zone

SMB: Small and Medium Businesses

SMEs: Small and Medium Enterprises

SPSS: Statistical Package for Social Sciences

USADF: United States African Development Foundation

WTO:World Trade Organization.

ICBE-RF: Investment Climate and Business Environment Research Fund

LMICs:Less Middle Income Countries

## **CHAPTER ONE: GENERAL INTRODUCTION**

### **1.1. Background to the Study**

The Small and Medium Enterprises (SMEs) play an important role in the Rwandan Economy in general according to the MINICOM (2010), Small and Medium Enterprises (SMEs) in Organization for Economic Cooperation and Development (OECD) countries account for over 95% of all firms, between 60% and 70% of employments and 55% of GDP and create the majority of new jobs (Appol, K. (2014)

Rwanda Private Sector Federation (2008) study estimated that there are over 72,000 SMEs operating in Rwanda, while only 25,000 of them are formally registered (34%). Rwanda Institute of Policy Analysis and Research (IPAR-RWANDA), a local think tank, says while government has implemented job creation initiatives and income generating initiatives for youths and SMEs, its approach to job creation is fragmented and insufficiently coordinated, which render it more difficult to measure the contribution of SMEs in generating more jobs. Limited resources and human capacity, Limited coordination and partnership, limited policy environment, Inadequate Infrastructure for rural SME development, structure of previous finance schemes, (low) quality and “one size fits all” approach, general regulatory environment in Rwanda were stated as the major challenge to the SMEs growth and sustainability in Rwanda (MINICOM (2010) additional high informal sector and lack of entrepreneurship skills may also be another attribute that hinder the sustainable development of the SMEs in Rwanda. Only 0.22% of SMEs were found to be stable and employ 50-100 people (MINICOM(2010).

Small and Medium enterprises today make over 95% of the businesses in Rwanda (RDB(2015), therefore a focus on manufacturing and trade fundamentally means a focus on these SMEs. Thus the RDB Trade and Manufacturing Department's strategies aim at structuring and implementing SME support programs to increase the proportion of SMEs in value-adding sectors such as agriculture, tourism, etc., and to facilitate their access to business development services (BDS). And The Government of Rwanda also recognizes that Business Development Services (BDS) are very crucial to the growth of SMEs. By enabling businesses to access tailored support services, including information, training, networking and consultancy advice, the BDS network helps new entrepreneurs and existing businesses to grow, become more competitive and

contribute further to the prosperity of Rwanda. A lot of micro and small businesses are being established and more will come up; they will need organizational and other support (EICV42011/2014). Rwandan small and micro businesses comprise 97.8% of the private sector and account for 36% of private sector employment. They often lack proper accounting and financial systems. Rwandan medium sized enterprises, by contrast, are well-established businesses that are individually or jointly owned. They have set administrative processes, qualified personnel and trained staff, employ between 50-100 people and account for 0.22% of businesses in Rwanda, contributing 5% of total private sector employment. Combining these categories shows that SMEs comprise approximately 98% of the total businesses in Rwanda and account for 41% of all private sector employment (EICV4 2011/2014).

According to the EAC's report on SMEs in Rwanda in 2013, the vast majority of SMEs (93.07%) work in commerce and services. This is followed by 1.86% in professional services, 1.66% in Arts & Crafts, 1.33% in industry, 0.94% in financial services, 0.7% in tourism and 0.45% in agriculture and livestock. This heavy concentration in the commerce and services sector, with only 1.33% in industry, reveals the need to address the challenges faced by SMEs, in order to build an economy based on value added exports.

## **1.2. Brief focus on Small and Medium Enterprises (SMEs)**

### **Towards the definition of SMEs**

There are different forms used to express Small and Medium Enterprises depending on the users. The commonly known are:

- “Small and Medium Businesses (SMBs)”
- “Small and Medium-sized Enterprises (SMEs)” and
- “Small and Medium-sized Businesses, SMBs”.

However they have the same meaning. To better understand the concept let's first have a look at definitions of the term Business. Stephenson (2011) defines business as, "The regular production or purchase and sale of goods undertaken with an objective of earning profit and acquiring wealth through the satisfaction of human wants." According to Dicksee, "Business refers to a form of activity conducted with an objective of earning profits for the benefit of those on whose behalf the activity is conducted."

Thus, when combining those definitions, business can be seen as an economic activity, which relates to continuous and regular production and distribution of goods and services with the aim of earning profits under uncertain market conditions and through satisfying human wants.

Actually, there is no universally accepted definition of Small and Medium Enterprise (SMEs). The SME definitions vary from country to country and there is no uniformity in these definitions. They depend on economic development of countries. across sectors and industries can generally be quite arbitrary. The World Bank Enterprise Survey (WBES) (2010) classifies enterprises with 5-19 employees as small and those with 20-99 as medium, while The World Bank Group in-house definition considers enterprises with 0-9 as micro-enterprises, 10-49 employees as small and 50-299 as medium-sized (Kushnir (2010). International Finance Corporation (2013), defined SMEs in terms of Loan Size, where Micro, Small and Medium enterprises are those with \$1,000-\$ 10,000;\$10,001-\$100,000 and \$100,001-\$ 1,000,000 respectively. The definitions of SMEs above are different to that of Rwanda as it was defined by The Ministry of Trade and industry which is also responsible for the development of SMEs in Rwanda defines SMEs in terms of Net Capital investment, Annual turnover and Number of employees. Where Micro Enterprises are classified as those which their Net capital investments are less than 0.5 million and Annual Turnover less than 0.3 million Rwandan francs and with Number of employees ranging from 1 to 3 persons. Small Enterprises are those Net capital investments ranges from 0.5 to 15 million, Annual turnover from 0.3 to 12 and Number of employees From 4 to 30 persons. Finally, Medium sized enterprises with net capital investment ranging from 15 to 75 million and Annual turnover of 12 to 50 million Rwandan francs as well as 31 to 100 numbers of employees (MINECOFIN (2012).

The existence of different threshold lines suggests that these should not be understood as strict concepts. Rather, it implies that the qualitative nature of the firm and its operations do not change substantially between the micro and small size segment. While some countries make a distinction between a micro and a small enterprise, in many cases countries include micro enterprises within the small-enterprise definition. It is like the case of Rwanda where SMEs policy of 2010, includes the Micro-enterprise in the SMEs as well for the purpose of common understanding. Hence this research will also include the micro enterprises.

### **1.3. The SMEs in Rwanda and Job creation in previous years.**

There can be no doubt that SME is not a young concept in Rwanda. It has its roots in the last century. However its sustainability has become an important priority in the last decade. They continue to grow up and the government policies show the great interest in promoting this domain. Ministry of Trade and Industry (2010), declared that Rwanda has seen a variety of initiatives to support Rwandan SMEs from the government, Development Partners (DPs), governmental and non-governmental organization (NGO) sectors. The creation of different organizations with intention of SMEs growth took place. The entrepreneurship trainings were organised. The government invented different initiatives for SMEs sustainability.

The decision was taken for funding basic education and TVET in order diversify skills and ipso facto to renew, orient and sustain the SMEs. Some programs aiming at SMEs development were formed. “Centre d’Appui aux Petites et Moyennes Entreprises” (CAPMER) was created. This was recognized internationally as Rwanda’s “Centre of Excellence” for business development services targeted at SMEs. It had, as a mission, to promote Small and Medium-Sized Enterprises (SMEs) in Rwanda through a package of various Business Development Services (BDS).

In 2009, CAPMER was integrated into the Rwanda Development Board (RDB) in order to combine its mandate with export and investment promotion and general private sector development services. In the same range of promoting SMEs, RDB was formed. Its primarily purpose was to coordinate and combine all services and support for Rwandan private sector development including investment and export support, business registration, environmental and tax advice, free trade zone and IT development and cluster specific programs such as tourism development. The vision of RDB was to transform Rwanda into a dynamic global hub for business investment and innovation focuses on the macro situation in Rwanda.

The RDB provides several specific initiatives to support SMEs, including training programs, networking and moveable asset registration, in addition to working to improve the overall

business environment in Rwanda. The broad high-level mandate of RDB makes the ground level implementation of SME programming difficult with existing resources.

Moreover, the Rwanda Cooperative Agency (RCA) was also created. This had the mission of supporting the development of Rwandan cooperatives, whose business activities are similar to SMEs. It works to train and regulate cooperatives in tandem with the Rural Small/Micro Enterprises Promotion.

Private Sector Federation (PSF) was formed to represent the interests of the private sector vis-à-vis the GoR. It had the mission of running a network of Business Development Service Centers (BDS) including: collecting information from private sector, providing training and support to these actors, playing the advocacy role and supporting young entrepreneurs in terms of financial resources through competitions.

The financial sector, which is very important in business promotion, is also working to support Rwandan SMEs through financing mechanisms. That is why, for instance, a large proportion of the Rwanda Development Bank's (BRD) lending activities provide direct financing to SMEs and cooperatives, refinancing to microfinance institutions, equity financing and equipment leasing through agricultural and other loan funds. These loans provide financing primarily for agricultural production activities, in marketing as well as processing, and through non-agricultural activities such as tourism, ICT, social infrastructure, manufacturing and services. Other lending facilities, managed by commercial banks as well as Micro-finance Institutions (MFI), target women, cooperatives, youth and agro-business.

In 2010s, Development Partners (DPs) contributed as well to the development of SMEs. USAID set up an SME guarantee fund that has been managed by the Bank of Kigali. Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) and the World Bank have been involved in skills training and entrepreneurship development. International Fund for Agricultural Development (IFAD) has also been involved through projects like PDRCIU, PDCRE and PPPMER, which have directly contributed to the development of agricultural and non-



agricultural rural SMEs. These initiatives demonstrate a concerted will on the part of all players to provide support to SMEs.

Another recent opportunity to business development in rural areas of Rwanda is the transformation of the private sector by increasing investment in priority sectors. This was recently ranked the 3<sup>rd</sup> priority of EDPRS 2. MINECOFIN (2013) proposed three main interventions to transform the private sector. According to this Ministry, the first is to strengthen the investment process to pro-actively target large foreign investors in priority sectors of the economy. The second is to accelerate structural changes in the financial sector by increasing long-term savings with the objective of increasing credit to the private sector; and the third is to strengthen the business environment through tax and regulatory reform to spur medium and large enterprise growth and attract large investors.

The new program of access to finance, Umurenge SACCO like other micro finances in rural areas, were created. This was one of priorities of almost all Districts in the performance contract of 2012-2013. In fact, as stated by MINECOFIN (2009), an organized SACCO is an easy way of organizing a community to save and recycle savings in a given locality; since the nature of a SACCO is local, it mobilizes savings locally, within the community, and then the profits are returned to members in the form of loans. The money stays and works within the membership and the area. This mutually achieved success helps to not only build a sense of ownership and pride in an area, it creates a culture of saving and investing (Littlefield (2003).

Appol(2014), identified that Microfinance allows poor people to protect, diversify, and increase their sources of income, the essential path out of poverty and hunger. The ability to borrow a small amount of money to take advantage of a business opportunity, to pay for school fees, or to bridge a cash-flow gap, can be a first step in breaking the cycle of poverty. Similarly poor households will use a safe, convenient savings account to accumulate enough cash to buy assets such as inventory for a small business enterprise, to fix a leaky roof, to pay for health care, or to send more children to school. Within SACCO the young entrepreneurs are likely to get credit and save for the future.

The World Bank (2013) realized that Rwanda has recently seen a great success in the World Bank Doing Business (2013). Overall, major reforms that have been implemented to assist the business community include easing the process of starting a business, registering property, protection for investors, trade across borders, access to credit and paying taxes. These reforms made Rwanda rise from 52<sup>nd</sup> to 185 places on the Ease of Doing Business Rankings (2013).

#### **1.4. Types of SMEs in Rwanda and their contributions for creating Jobs**

SMEs have invested in different sectors. Different empirical data highlighted the following sectors among others: construction, transport, wholesale & retail trade and services, utilities production of manufactured goods and processing of agricultural products, forestry, fishing, mining and quarry, accommodation, food services, information and communication, financial and insurance, professional, scientific and technical activities, health and education.

Jointly, the Ministry of Public Service and Labour (MIFOTRA), Ministry of Trade and Industry (MINICOM), Private Sector Federation (PSF) and the National Institute of Statistics of Rwanda (NISR) conducted an establishment Census in 2011 and 2014. According to these censuses the largest single sector in Rwanda in terms of the number of establishments is fishing, mining and quarry with a total of 64,639 establishments (52.3% of the total). This is followed by the accommodation and food services sector, which records 33,305 establishments (27.0%). The rest of the sectors are small in comparison when looking at the number of establishments in isolation, with professional services at 4.5% and manufacturing at 3.7% for instance. EAC's report on SMEs in Rwanda is not far from the findings of the said census. According to that report, the vast majority of SMEs (93.07%) work in commerce and services. This is followed by 1.86% in professional services, 1.66% in Arts & Crafts, 1.33% in industry, 0.94% in financial services, 0.7% in tourism and 0.45% in agriculture and livestock.

As it is described by MINICOM (1999), the vast majority of small scale business men or industrialists are self-made men. The start-up capital is owned by the founder. There are no feasibility or market studies conducted with regards to the enterprises. In this way, the management of this type of the enterprise is very significantly dominated by the key figure of the founder. Most of these enterprises equipment quite often consists of reconditioned, second hand

machinery. This type of enterprise usually takes legal form of one-man business of limited partnership.

Reports from deferent survey and censuses found that Micro and Small Businesses are the most frequent in the Rwandan business both in rural areas and in urban(NISR,Establishment census(2014). The recent establishment census conducted in 2014 revealed that almost all private establishments (99 percent) exclusively belong to Rwandans and 96 percent of them are owned by individuals(sole proprietorship status). Moreover,the overwhelming majority of all establishments employ less than 4 workers; Therefore 90 percent of them are classified as micro establishments. The total number of in-establishment workers reaches 493,302 persons for which 36 are females .Around 60Percent of all workers are employed in only the following three sector of operations( economic activities) : Trade (24.4 percent), Accommodation and food service activities (17 percent)and education (17 percent). Some economic activities are male-dominated with the proportion of males higher than 80 percent: mining and quarrying, Construction, Transport and Storage and Administrative and Support service activities. A comparison of 2011 and 2014 establishment censuses shows that there was a growth of 24.4 percent in the total number of private and business oriented mixed establishments in this three-year period. The remarkable increase was observed for establishment involved in the following economic activities: Mining and quarrying scored the highest growth (473.5 percent), construction (42 percent), Accommodation and food service activities (34.1Percent), Human health and social work activities (33.1Percent) and Arts, entertainment and recreation (31.0 percent).

With regard to the establishment size, there is increase in all size categories; however, the increase is profound for large establishments (103.8 percent). As the change in employment level is concerned, there has been an increase of 35Percent in employment size between 2011 and 2014.These statistics showed where government and other business stakeholders have to make much emphasis, in order to create more jobs and likewise reduce the poverty among the population.

Also, in some cases, countries opt to categorize micro-entrepreneurs with no additional registered employees as self-employed or as own account workers. However, in terms of quality, there seems to be a stark difference as to whether a firm is on the one hand micro and small or on the other medium in size. While traditional and simple forms of enterprise organization and

structure might be sufficient for running an SME, evidence in LMICs shows that starting from a threshold of 20 or more employees enterprises requires a more complex and systematically organized enterprise structure (Altenburg & Eckhardt (2006); Liedholm (2002); Mead & Liedholm (1998). It is this threshold that for many firms constitutes a rough qualitative cut-off point into a more advanced level of organization – the medium-size bracket (see also the reference to the WBES in Kushnir, Mirmulstein & Ramalho (2010)). The major challenge that the country face is that Over 70 % of firms in Rwanda are informal, and have 3 or fewer employees (NISR (2012) and they also fall under category of Micro enterprise In consequence, for the purpose of this thesis, it is expedient to define Small Enterprises as formal and informal enterprises with up 49 regular employees and, medium-sized enterprises as those having 50 regular employees or more as it is defined by World Bank context in the table 1 Appendix. And it differs to the definition of Rwandan context where Small enterprises are formal and informal enterprises with up 30 regular employees and medium sized enterprises as those having 31 regular employees or more.

### **1.5. Problem Statement**

Many empirical studies from various different countries have worked on the SMEs and job creation and come up with different commonalities and disparities ,where many researchers proved that Small and medium enterprises play a very large role as job creators (Per Davidsson, & Delmar (1998); Birch (1979); Baldwin & Picot (1995); Davidsson (1995), Davidsson, Lindmark & Olofsson (1993; 1994; 1995a; 1995b; 1998a; 1998b); Fumagelli and Mussati (1993); Folster (1997), Kirchhoff and Phillips (1998); ; Spilling (1995); Aiginger, and Tichy(1991), ENSDR (1994); Loveman and Sengenberger (1991); OECD (1987); Storey and Johnson (1987)). Controversy form other researchers after to conduct the same study and employing the same methodology and come up with different results, where they proved that SMEs dominate job creation simply is not true and for them their belief is that small firms are major contributors of new jobs is largely based on methodological imperfections (Davis, Davis, , Haltiwanger and Schuh (1996a, 1996b) , Secondly SMEs are not over represented as job creators, and suggesting that they are, but only because large firms who are still in power changed their strategies,(Harrison (1994a), 1994b). Kirchhoff & Greene (1998) and Reynolds (1996) have suggested that the disparities are in part due to that different fundamental theories

concerning how the economy works. For the case of Rwanda limited research have been conducted where In a 2002 survey of Rwandan SMEs, 64% of respondents stated that their businesses were either “in trouble” or “struggling” (MINICOM (2002)). The existing Literature in Rwandan context does not exhibit the linkage between the Job creation and the SMEs which prevent the policy makers to take informed policies with regard to SMEs and growth is concerned. The Rwanda Central Bank Reported that job creation of the last five was not in strong relations with the growth of SMEs and this should inspire academic researchers to explore how the SMEs Contributed to job creation (BNR(2010)). And the Current economic strategy of 2013-2017 depicts that the measures of formalization of the SMEs in order to create more Jobs to youth and others. Survey conducted on SMEs, Results identified that 64% of respondents stated that their businesses were either “in trouble” or “struggling” (MINICOM (2002)). Then what are the importance of different strategies adopted by Rwanda so as to improve Small and Medium enterprises as the ways of creating more jobs. It is in this framework that we want to bring an empirical analysis of jobs created by SMEs in Rwanda. Thus, according to their profile, this study tends to find out the influence of Small and Medium Enterprises and Job Creation in Rwanda for the period between 2006 and 2011.

### **1.6. Objectives of the Study**

The following objectives shall be considered:

- (a) To examine the extent to which Size of the Business affect Job Creation in Rwanda.
- (b) To determine the extent to which Region of the business impacts on job creation in Rwanda.
- (c) To establish the relationship between female owner of the business and Job creation in Rwanda.
- (d) To explore the effects of fixed assets of the business on Job creation in Rwanda.

### **1.7. Research Questions**

- (a) To what extent the Size of the business is associated with Job creation in Rwanda?
- (b) To what extent does Region of the business affects Job creation in Rwanda?
- (c) What is the impact of the business owned by women on Job creation in Rwanda?
- (d) What is the influence of fixed assets of the business on Job creation in Rwanda?

### **1.8. Research Hypothesis**

As mentioned above, unlike much previous research, this study is based on the resource based approach, implying that the independent firm level variables, such as : Labour productivity; machinery, Vehicle and Equipment; Fixed assets; Female owner; Manager experience ;size of the business in terms of number of employees, Region and Legal status of the business considered have influence on job creation (Audretsch (1995); Autio(2005); Hall (1987); Lang, Ofek & Stulz (1996);Munikrishnan & Verakumaran (2009);Ohaka and Agundu (2012)

- (i) Size of Small Enterprises makes no significant difference on Job creation in Rwanda.
- (ii) Region of the business make no significant difference on job creation in Rwanda.
- (iii) Business owned by women makes no significant difference on job creation in Rwanda.
- (iv) Fixed assets of the business make no significant difference on job creation in Rwanda.

## **CHAPTER TWO: PRELIMINARY LITERATURE REVIEW**

### **2.1.Introduction**

Small and medium Enterprises (SMEs) exist in every sector of the economy of the country and are crucial for sustained, long term growth and employment, MacDonald (2007). From a worldwide perspective, it has been recognized that micro, small and medium enterprises (MSMEs) play a vital role in economic development, as they have been the primary sources of job creation and output growth, not only in less developed countries (LDCs) but also in developed countries (Tambunan (2006); USAID (2008);World bank (2004).

### **2.2. Theoretical Framework and Empirical studies on the role of SMEs and Job creation**

Only very few SMEs in LMICs manage to grow and expand in employment. However, those few formal SMEs that do manage to grow into higher-size categories can, in fact,are held responsible for the bulk of job creation among SMEs (Ayyagari (2014). This hints at the potential that some SMEs hold in creating considerable productivity and employment gains (De Mel (2012a); Grimm (2012). However, the fact that only a very small group of micro and small entrepreneurs survives and grows also suggests that several growth barriers and constraints exist which impede the productive reallocation of jobs. Researchers and policymakers have therefore been interested in identifying the factors that constrain and drive enterprise growth. Moreover, there is a keen interest in understanding what it takes for SME growth to also translate into additional productive jobs, and into an increase in workers' wages or an improvement of their working conditions. Different strands of literature propose a number of factors determining whether an enterprise can grow, expand in employment and increase job quality: Some highlight the internal qualities of the firm while others focus on the external conditions that enterprises face in a country or a region. These two groups of internal and external factors can be assigned to four broad categories: (1) entrepreneur characteristics (such as education, age, gender); (2) enterprise characteristics (informality, location, R&D); (3) networks (both personal and professional) and the (4) business environment (regulation, infrastructure, access to finance) .In order to assess the employment intensity and employment quality of SME output growth it is essential to identify what factors drive enterprise growth in output and returns. The majority of studies on enterprise growth in LMICs choose the change in the number of employees as a non-financial measure and proxy indicator to measure the magnitude of growth in terms of creating jobs (also Mead &

Liedholm (1998). Thus, in many cases, studies on SMEs and job creation are, in fact, already measuring employment growth rather than the actual growth in output. Liedholm(2002) points out that this practice might lead to systematic underestimation of micro and small enterprise and job creation. For example, in Kenya, Parker (1994) found that the real sales growth of the SMEs studied was almost double the growth in employment. This observation supports the idea that the employment effects only translate after a substantial lag in time of SME growth in sales and output, and that a substantial increase in returns is required to sustain productive employment growth.

SMEs contribute to Economic Growth through several pathways that go beyond job creation; here they mentioned that SMEs leads to economic growth by including entrepreneurship, economic dynamism, linkages in value chains, human capital improvement, financial market development and societal development (USAID & IRIC Center University Research Corporations International(2008); World Bank(2004). Small and Medium-sized Enterprises (SMEs) are the future in leading emerging markets to sustainable growth (Growing SMEs(2013). The study conducted in turkey indicated that Access to finance is perceived as the single most severe obstacle by firms of all sizes to growth and to impact the overall productivity of the country (Murat & Paulo(2010). MSMEs produce a variety of goods that, due to their nature or characteristics, can be grouped into two categories, i.e. consumer goods and industrial goods. (Tambunan (2006aand 2006b), also stated in his research that SMEs have two important roles to play simultaneously: to accelerate economic growth through the growth of their output contributions to gross domestic product (GDP), and to reduce poverty through employment creation and income generation effects of their generated output growth. The above assertions support the hypothesis, that there is a positive correlation between output growth in SMEs and job creation of a country. The time series data used to test hypothesis, that there is a positive correlation between output growth in SMEs and job creation ,the paper proved that there no much evidence to reject the hypothesis as in low-income countries SMEs contribution to GDP and employment is less than half the rates in developed countries (Khalid and Jennifer ( 2013).

SMEs are playing a positive and significant role for the economic progress, foreign exchange earnings and GDP as well as providing job opportunities (Muhammad Shaikh (2012).



### **2.3. Empirical studies on the role of SMEs and Job creation.**

The rates of gross job creations and gross job losses are significantly higher among small firms than among large ones reflecting greater turbulence among small firm employment; gross flows of employment creation and losses tend to be dissociated from net flows and many studies find also a clear negative relationship between net job creation rates and the size of establishments or firms; methodology matters, certainly for the magnitude of the relation between net job creation and firm size and in several cases also for the direction and quality of this relation.(*OECD*(1996).

In supporting Project Development Facilities to assist small and medium enterprises (SMEs), an International Finance Corporation (IFC) (2013): presumed that (i) development of SMEs is important for achieving sustainable job creation and poverty reduction and (ii) subsidies are needed and justified to foster their development. As part of the evaluation effort, a literature review was reviewed to assess the weight of the empirical evidence underpinning these assumptions and When the U.S. manufacturing data is analyzed, taking these problems into consideration, the following conclusions were drawn about the relationship between firm size and job creation. According to the data, Gross rates of job creation and destruction were high in both large and small firm cohorts; however they were higher in the small firm categories. Thus, while small manufacturing firms with fewer than 500 employees accounted for about one third of employment, they accounted for just under 50 percent of job creation and destruction between 1973 and 1988.

Net job creation was highest in the large firm size class, that is to say Large firms (>500 workers) employ the lion's share of workers and have more stable jobs and therefore dominate the calculation of net job creation in terms of absolute numbers. Lastly, there was no systematic relationship found between rates of net job creation and firm size. Therefore, there was no reason to believe that net job creation would be changed if the structure of manufacturing were populated by many SMES or by a few very large firms with thousands of employees(Tyler Biggs (2000).

According to Enterprise Surveys regarding access to finance by SMEs the results found proved that Although size is a significant predictor of the probability of being credit constrained, firm age is not, and high performing firms measured by labor productivity are less likely to be credit constrained(Veselin Kuntchev,Rita Ramalho,Jorge Rodriguez-Meza,Judy (2012)

The sector of SMEs does not mean remedy for the process of transition and cannot generate economic growth itself however it plays an important role in the transition countries because of its contribution to the creation of social stability (Dr.Klara & Andrea (2005)

SMEs contribute disproportionately to net job creation;SMEs contribute about 70 percent of net new jobs, while larger firms tend to be job destroyers, so far Politicians and bureaucrats claimed to slow realizing the real significance of that in a globalized economy(Chris Hall (2007),Russian Federation (1997).An empirical study conducted using the GMM (Generalized Method of Moments) system to analyze a database consisting of 12532 Swedish micro firms during 2007;it was found that the firms' size and age, the importance of debt financing and increased availability of liquidity are positively related to job creation as well as industry affiliation.SMEs are a very heterogeneous group. Taken together, SMEs comprise the majorityof all enterprises and create the bulk of employment in LMICs (see also De Kok (2013). Especially, micro enterprises – that is, enterprises with 9 or less employees – are the main constituents of SMEs (World Bank (2013). According to the World Development Report on Jobs, shares in formal and informal micro enterprises range from 80% in Latin American countries, such as Argentina, El Salvador and Mexico, to more than 90% in Asian countries, such as China, India, Indonesia and the Philippines (ibid., pp. 11ff). Even in more advanced economies such as Chile, micro enterprises provide employment to nearly 40% of the population (ibid., p. 11). Former ILO study (2003) examining firms with fewer than 10 Workers found that they generated 58% of total employment in Paraguay, 54% in Mexico and 53% in Bolivia. Household and labor force surveys in Ethiopia show that micro and small enterprises together account for 97% of employment (World Bank (2013).

Similarly, the seminal study of (Mead & Liedholm (1998)found that in the five African countries under study, the number of people engaged in micro and small enterprises was twice the level of those employed in the formal large-scale and public sectors. Moreover, they show that most of those enterprises were only one-person businesses. Hired workers, excluding unpaid family workers, were a rare case, and in most countries the percentage of hired workers constituted only around 20% of the SMElabor force (Mead & Liedholm (1998) .Hence, the SME segment is characterized by 'working owners', that is, high rates of Self-employment.

NISR conducted research and results identified that the figure 1 in Appendix, showed how SMEs contributed in creating new jobs in 2014, where Micro enterprises dominated with large share in creating new jobs than others in comparison with 50% and 16% for Small enterprises and 7% for Medium enterprises understudy. This means that according to the context of Rwanda business policy, Micro enterprises are considered as Small enterprises. So, if we can sum up both Micro and Small enterprises account more with 66% in SMEs profile of Rwanda. This means again the need to shift from Small enterprises to Medium and large enterprises have to be encouraged, because even though small enterprises dominating SMEs profile in Rwanda they are less in employing more persons ,as well as in contributing in economic growth (GDP) than Medium and large enterprises which employs more persons and contributing more to GDP. So, this is the work of Rwandan Business Promotion stakeholders and policy makers to boost the development of SMEs.

### **2.3.1 Informal Employment**

SMEs can be registered (formal) or unregistered (informal). Informal SMEs make up the vast majority of businesses in most LMICs Kushnir, Mirmulstein & Ramalho (2010), unfortunately; the sampling frames of most cross-country and national statistical surveys exclude informal enterprises. Unfortunately, this is also the case for the World Business Environment Survey (WBES (2010)) which not only excludes formal enterprises with less than 5 employees, but also informal enterprises. Very few reliable estimates on the employment share of the informal economy, particularly informal SMEs, exist. However, it is widely acknowledged that informal SMEs often outnumber formal SMEs many times over. For example, in the case of India, 1.6 million registered SMEs are matched with an estimated number of 26 million unregistered SMEs, of which the majority is in the micro or small-size category (Kushnir, Mirmulstein & Ramalho (2010))

Similarly, looking at household data in thirteen sub-Saharan countries, Fox and Sohnesen (2012) found that only 9% of employment is generated by formal enterprises. Comparatively, subsistence family farming (70%) and informal SMEs (15%) create most of the employment

(ibid.). While informal enterprises are responsible for a large number of jobs; workers in the informal sector tend to have no formal social protection. Thus, job quality within informal enterprises tends to be lower than in formal enterprises (Jütting & De Laiglesia (2009).

### **2.3.2 Labour force characteristics**

As the vast majority of SMEs are operated as a one-person business, it is only logical that entrepreneurs themselves formally constitute the largest category of 'labor'. However, many owner-operated SMEs also employ unpaid family members. In their survey on sub-Saharan Africa (SSA), Mead & Liedholm (1998) found that together with the owners themselves, unpaid family members constitute up to 75% of the total labor force in SMEs. Only one-fifth of workers in SMEs are hired employees (20%) and only another tenth of workers are apprentices (10%) (ibid). Thus, as in the case of many SSA countries, most SMEs are in fact family enterprises. Similar evidence has come up in other LMICs (De Mel (2008); Hampel-Milagrosa (2015); Gindling & Newhouse (2014); Reeg (2013b).

### **2.3.3. Gender**

In LMICs, about half of the micro enterprises are operated by women (Gomez (2008); Mead & Liedholm (2002)). Even so, micro-entrepreneurship among women is often part of a multiple-livelihood strategy that involves several other activities such as additional (informal) employment, for instance as a domestic worker, and agricultural work, such as subsistence farming. As a result, female-headed enterprises are often found in activities that can be operated from home, such as retail activities, knitting, sewing, cooking, brewing and other food processing as well as repair services (Maloney (2004)). Because of home-based operations and a high degree of informality in female entrepreneurship, the latter is often 'hidden' and underreported in official statistical nets (International Labor Organization [ILO] & Women in Globalizing and Organizing (WIEGO) (2013)). Compared to male-headed businesses, women also tend to have fewer workers and pay them less. This is because women prefer a business with stable returns and income to take care of their families, rather than investing in risky business that may have higher returns and better growth prospects. This comes as no surprise, as most female self-employed are poor and highly risk-averse, and in turn are most likely to be necessity entrepreneurs.

Nevertheless, it should be stated that informal employment also exists in formal and larger enterprises (ibid.).

#### **2.4.Constraints faced by SMEs and Job creation in Rwanda**

The report of the World Bank (2011) recognized Rwanda's success in having established a sound investment climate. However, revealed that the private sector is still nascent and would profit much from access to the new technological. For the World Bank, the main requisite constraints to accelerated growth, investments and exports are the lack of economic infrastructure and the limited skills base. Rwandan SMEs are confronted with problems relating to limited access to finance. Another constraint hampering new business owners is the lack of skills to develop Business plan. In fact, Business Development Services, namely services related to entrepreneurship, business training, marketing, technology development and information are underdeveloped and not readily available. On the other hand, SME operators lack information as well as appreciation for such services and can hardly afford to pay for the services.

As a result, operators of the sector have rather low skills. Also, there is no organization/institution available to bring together and coordinate the efforts of all business stakeholders. Consequently, the institutions and associations supporting SMEs are weak and disjointed. Some institutions created for supporting businesses in Rwanda lacked the capacity and resources to provide the necessary support to develop the SME sector. The example is CAPMER which was obliged to be integrated into the Rwanda Development Board (RDB) in 2009 in order to combine its mandate with export and investment promotion and general private sector development services (MINICOM (2010)). SME sector is facing many constraints which need to be addressed adequately to different stakeholders. It is fundamental to put in place strategies that will facilitate the removal of those challenges so that it can attain the desired vision and identified objectives. This is one of the purposes of this research. The major areas of focus include creation of the favorable business environment, developing the infrastructure, strengthening financial and non-financial services and establishing and strengthening institutions supportive to business development. In this research, problems are identified and possible solutions are suggested by the researcher.

**2.5. Rwanda National Program for boosting Businesses as well as creating more jobs are summarised below:**

In Rwanda, Government institutions put in place Programs for boosting businesses and job creation to tackle unemployment:

- Hanga Umurimo
- Business Development Services (BDS) Centres
- Business Development Centres (BDC) Led by RDB
- Agaciro Kanjye, It is Led by MYICT
- Entrepreneurship Training ,Led by RDB
- Women and youth access to Finance program, Led by MIGEPROF & MYICT,
- Community Processing Centres (CPC),Led by MINICOM
- Integrated Craft Production Centres (ICPC) AGAKIRIRO, Led by MIFOTRA,
- Sector Skills Councils, Led by RDB
- Business Incubation Centres (BIC), Led by WDA
- Youth Employment for Global Opportunities (YEGO), Led by MYICT,
- IPRC TVET, Led by MINEDUC.
- Professional Internship, Led by RDB
- Internship Programme (PSF).
- KESC Kigali Employment Service Centre, Led by MIFOTRA
- University Career Advisory Services, Led by RDB
- VUP Public Works, Led by MINALOC
- Kuremera (Household Income-Generating Activities), Led by MIFOTRA

- NEP under MIFOTRA,
- A more integrated approach to act as one in the job creation
- NEP is built upon three main pillars namely private sector development, Skills development and Labour market intervention
- It has 2 core objectives,
- Firstly, creating sufficient jobs that are productive and adequately remunerative across the economy and
- Secondly, equipping the workforce with vital skills and increasing productivity capacities required for gainful employment on a sustainable basis.

## **CHAPTER THREE: METHODOLOGY**

### **3.1. Introduction of Methodological framework**

The chapter three of this research deals with the methods and techniques used in the entire process of the research, that include, The variables needed theoretically, the dependent variable and independent variables, Conceptual Framework, Model Specification, , Data Requirements and at the end of this research we are expecting the following results: SMEs have played a moderate impact on Job creation in Rwanda. There is no difference in women or men owned SMEs as productivity is concerned. Lack of Access to finance and high interest may prevent the growth of SMEs in Rwanda.

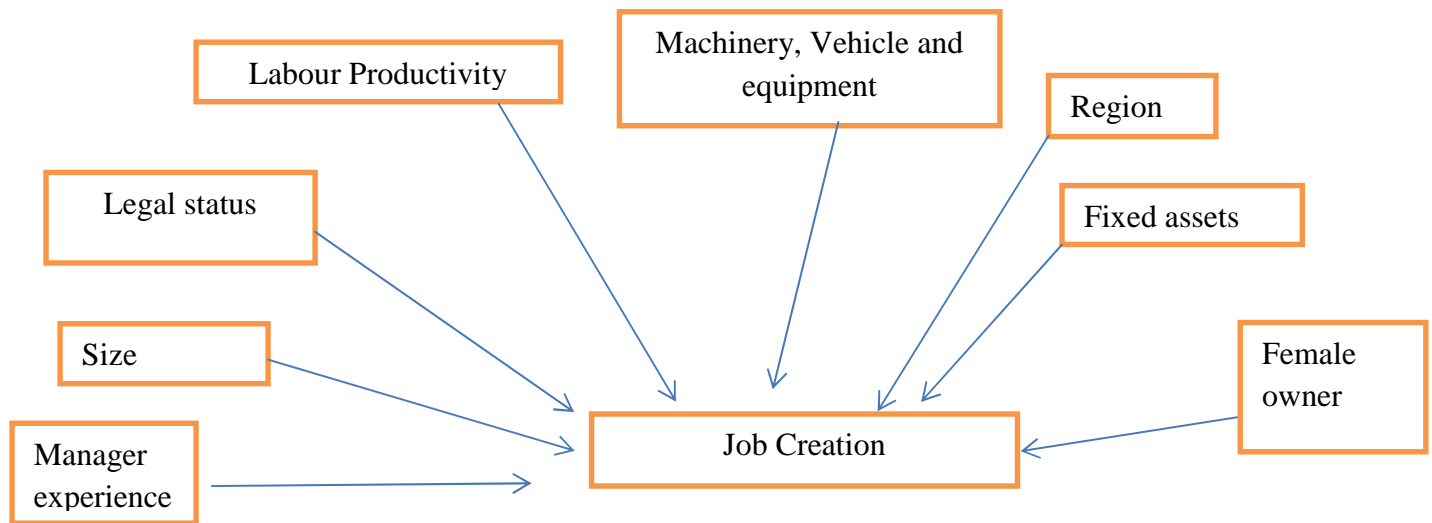
This research is again organized into the following main chapters: Chapter one refers to the introduction tackling an overview of the research, statement of the problem, Research questions of the study, objectives of the study, study hypotheses, conceptual framework. Chapter two covers review of relevant literature about the research topic and the main concepts of the study that has been extracted from various texts, publication, journals, electronic resources, reports, and high policy makers' point of view. It also highlights the gap in field of research which tackled by the researcher. Chapter three deals with the methodology and techniques used in the entire process of the research, that include data type, documentation, research design, statistical design of the research, analysis and interpretation of findings techniques. Chapter four illustrate the research empirical findings of the study and interpretations related to study objectives. Chapter five embarks on providing the conclusions and policy recommendations.

### **3.3. The variables needed theoretically**

#### **3.3.1 Conceptual Framework**

The proposed conceptual framework is adopted and modified from Kristen, M and Rogerson (2002); Munikrishnan & Verakumaran (2009) as presented in Figure 2 below. The model explains the relationship between Labour productivity (turnover of the firm), size in terms of number of employees, Fixed assets, Female owner, Manager experience, Region, machinery, vehicle and equipment (Technology of the firm) and Legal status of the firm which eventually leads to job creation.





**Source:** conceptual framework adopted and modified by the Author (2016).

### 3.3.2 Selection of Variables

Based on the purpose of this study and the relevant literature and in order to explain the change in the independent variables, job creation, and Eight independent variables such as : size of the business in terms of number of employees; labour productivity; Manager experience; Machinery,Vehicle and Equipment;Female owner of the business; Fixed assets; Region of the firm and Legal status are incorporated into the L R model system. These variables are defined in the following section.

### 3.3.3 The Dependent Variable

The dependent variable, job creation, is expected to be affected by changes in total labour productivity generated by fixed assets.

Job creation is measured as the number of employees among the firms.

### 3.3.4 The independent variables

Based on previous studies, a number of variables have been identified and investigated as being associated with job creation. These studies have analysed SMEs data and found relationships between job creation and variables such as size (Broersma & Gautier (1997); Hall(1987); Oliveira & Fortunato (2006); Singh & Whittington (1975), age (Audretsch(1995); Broersma & Gautier (1997); Jovanovic (1982); Oliveira & Fortunato(2006), leverage (Carpenter & Petersen(2002); Fazzari, Hubbard, & Petersen (1988), Heisz and LaRochelle-Côté (2004);Lang, Ofek& Stulz (1996); Yazdanfar (2011), liquidity (Acemoglu (2001);Funke, Maurer, Siddiqui&

Strulik (1998); Winker(1999), Source of Finance and Government incentives (Munikrishnan & Verakumaran (2009)). Since firm size and age have an influence on information asymmetry, they are relevant when studying liquidity constraints (Myers (1984); Myers & Majluf(1984). In this study, the natural logarithm of labour productivity is used as a proxy for Turnover. This measure is the most common proxy for Turnover among previous studies.

These proxies, as well as all other proxies in this study, refer to book values. Moreover, the proxy variable of Machinery, Vehicle and Equipment is the natural logarithm of Technology of the firm, Female owner is a proxy of Gender, Legal status is a proxy of Nature of the Firm.. Measured mostly in terms of sales. Source of Finance of the business is a proxy of fixed assets. Finally, since the job creation level is expected to be affected by and to vary across industries; a dummy variable is included in the model. Apart from: Age; Size; and annual turnover; sources of finance; liquidity; leverage; and government incentives; nature of the business; Technology, education of manager of the business that few researchers have been employed, in this study we are going to employ other additional variable which did not been recognized by other researchers in Rwanda. So, as to explore the effects that it has on dependent variable which is job creation and that is: Female owner of the firm.

### **3.4 Model Specification**

Limited researcher have employed different methods to investigate the factors associated with Job creation, like multiple linear regression (MLR) analysis which was conducted to investigate the influence of business size, in terms of employee number and annual turnover, on job creation (Munikrishnan & Verakumaran (2009)). The GMM (Generalized Method of Moments) system adopted in his research by Darush Yazdanfar & Khalik Salman (2012b), Arellano & Bond (1991), Darush Yazdanfar & Khalik Salman (2002a). For this study both the descriptive studies and exploratory studies used, and the estimation results of the results of Linear Regression model (LRM) system used to test the hypothesis of the study (Uma Thevi Munikrishnan & Bhuvanes Verakumaran (2009)). and it is the chosen system as the appropriate method in this study to overcome problems such as unobserved individual effects, likely endogeneity of the explanatory variables and autoregressive processes in the data concerning the dependent variable, which are associated with panel data used. This method has been suggested by Darush & Salman (2012), Arellano & Bond (1991), Darush Yazdanfar & Salman (2002). for analysis of the panels with a

limited number of years and a considerable number of observations. The following model has been formulated to identify and quantify the variables that explain the job creation level in a Census conducted on SMEs enterprises in Rwanda for the period between 2006 and 2011 by World Bank which is very famous in conducting rigorous research World wide. The variables included are: Size, Manager Experience, labour productivity(turnover), female owner of the firm, fixed assets, Machinery, vehicle and equipment, Region and Legal status. Furthermore those above variables have also been used by other researchers according to the literature review conducted except only Female owner of the firm which is going to be used at the first time in this model especially in Rwanda. We are going to employ female owner of the firm in the model because it is a world crucial variable for job creation according to the Less Middle Income Country, where the emphasis are put under Youth and women and about half of the micro enterprises are operated by women (Gomez (2008); Mead & Liedholm (1998)).

$$Job_{i,t} = r_{i,t} + S_1 Laborprod_{i,t} + S_2 Machvehihequipment_{i,t} + S_3 Fixedassets_{i,t} + S_4 Femaleowner_{i,t} + S_5 Managerexp_{i,t} + S_6 Size_{i,t} + S_7 Region_{i,t} + S_8 Legalstatus_{i,t} + v_{i,t}$$

$Job_{i,t}$  is the natural logarithm of the number of employees over the period of 2006 and 2011.

- $Size_{i,t}$  = size of firm  $i$  at time  $t$ ; is measured as the natural logarithm of the firm's created size based on numbers of workers over the period of 2006 and 2011 (Size (1=SME; 0=large)).

$Managerexp_{i,t}$  = Manager experience in running business,  $i$  at time  $t$ ; Manager Experience is the natural logarithm of the number of years being a manager of the business in period between 2006 and 2011.

$Machvehihequipment_{i,t}$  = Machinery Vehicle and Equipment (Technology) of the firm  $i$  at time  $t$ ; Machinery Vehicle and Equipment is the natural logarithm of technologies adopted by the firm.

$Fixedassets_{i,t}$  = Fixed assets of firm  $i$  at time  $t$ ; Fixed assets is the natural logarithm of the Value of the assets that contributed to the establishment ability to generate revenue over the period of 2006 and 2011.

$Labourprod_{i,t}$  = Labour productivity of firm  $i$  at time  $t$ ; Labour productivity is the natural logarithm of the amount from dividing Turnover with cost of labour for three years of fiscal year.

$Femaleowner_{i,t}$  = Female owner of the firm i at time t; female owner is the natural logarithm of the number of women running business rather than men for the period between 2006 and 2011

( Female owner (1=yes; 0=Other)

$Region_{i,t}$  = Region or business location i at time t; Region is defined as Kigali City (=1) and Butare city (=0).

$Legalstatus_{i,t}$  =Legal status (nature) of the firm i at time t; Legal status of the firm is the natural logarithm of your business nature (legal status (1=sole proprietorship; 0 =other).

$v_{i,t}$  = error term; means other factors which may have much influence on the dependent variable and not taken into consideration in the model.

### **3.6. DataRequirements.**

In this thesis only secondary data are used. The panel data consist of unlisted limited liability Rwandan micro, Small, medium and large Enterprises over the period of 2006 and 2011. It is a comprehensive SMEs profile which compiles statistical records for all both registered and unregistered firms of SMEs operating in Rwanda. The Census thus contains micro firms with 1-9, Small enterprises with 10-49 and Medium enterprises with 50-299 of employees across all manufacturing and Services sectors of the economy. The dependent variable which is Job Creation obtained by taking the difference of employees which were employed by Rwandan businesses during the period of 2006 and 2011. Labor productivity is turnover divided by cost of labor in three years towards 2011; Size of the business in terms of employee numbers, are the businesses with up to 49 employees relatively to others; Region of the businesses (Kigali =1, Butare = 0); Machinery vehicle and equipment of the business impact; Female owner of the business (all women and majority of women =1, others =0); Manager experience (Years running business); and Legal status (Sole proprietorship=1, others = 0). The secondary data used has been critically evaluated and collected from World Bank census between 2006 and 2011; scientific articles; and internet sources, in order to obtain some better insight of the situation of SMEs in Rwanda and to support the theoretical as well as methodological part of the thesis.

## CHAPTER FOUR: DATA ANALYSIS, PRESENTATION AND INTERPRETATION

### 4.1. Introduction

In this chapter the Researcher presents, analyses and interprets the data gathered from Panel data from censuses conducted by World Bank on SMEs operating in Rwanda between the Period of 2006 and 2011. The presentation of the findings is based on the objectives and research questions and hypothesized tests. In this way, the Researcher presents and analyse the profile of SMEs operating in Rwanda by assessing their impact in Job creation. The labour productivity; Machinery, vehicle and equipment; size of the business in terms of number of employees; Manager experience, Female owner of the firm; Fixed assets; Region and Legal status of the firm. In addition to the above,we are going also to interpret the Results from Descriptive Analysis.

**Table 3: Results of the Descriptive Statistics**

Variable Description	Mean	Std. Dev	Min	Max
Job Creation	6.316239	19.31528	-85	98
Labour Productivity	13.36907	34.06432	1	362.144
Manager Experience	11.57143	10.18605	1	42
Machinery ,vehicle and equipment	5.48e+07	2.74e+08	0	2.20e+09
Fixed Assets	5.99e+07	2.74e+08	0	2.20e+09

**Source:** Author's calculation from World Bank enterprises survey, 2006 and 2011.

### 4.3 Interpretation of Descriptive Statistics from the table 3 above

The Descriptive Results in the table 3 above revealed that the mean value of job created by Small Enterprises compared to Medium and Large enterprises in Rwanda for the period between 2006 and 2011 is 6.32. The minimum employees diminished in Small enterprises compared to Medium and Large enterprises in Rwanda for the said period results identified that are equal to 85 numbers of employees. And the maximum employees hired in Small enterprises compared to those employed in Medium and large enterprises for the period of 2006 and 2011 under study in Rwanda are equal to 98 numbers of employees.

The results of descriptive Statistics in the table 3 above, explained that for 1rwf spent on labour by the firm, the Mean value of labour productivity increases by 13rwf in Rwandan business and the results continued to tell us that for 2006 and 2011 the minimum labour productivity gained by the firm is 1rwf and the maximum productivity of labour for the said period is 362rwf.

Descriptive Statistics from the table 3 above showed that the Mean years of experiences that the Manager has for the period of 2006 and 2011 was 12 years of experiences. And the Minimum years' experience is 1 year and the Maximum experience is 42 years old.

Descriptive statistics also showed that the Mean value of machinery vehicles and equipment or Technology which are in the business in Rwanda is 5,480,000,000 rwf and the minimum value of Machinery vehicle and equipment is 0 rwf and the Maximum is 220,000,000,000rwf.

In addition to that, Descriptive Statistics results from the table 3 above, revealed that the mean value is 5,990,000,000 of fixed assets which are in the business in Rwanda for the period of 2006 and 2011, the minimum is 0 and the maximum is 220,000,000,000rwf.

**Table 4: Data Presentation of Regression results from Appendix B.**

Dependent Variable	Job Creation		
Estimation method	LRM method 5 Parameters		
	Model 1		
Independent Variables	Coefficients	Std. Err.	P> t
Intercept	-.0256108	21.05377	0.825
Labour productivity	-.0187452	.526879	0.629
Machinery vehicle equipment	-4.73e-07**	2.46e-07	0.061
Fixed Assets	4.87e-07**	2.49e-07	0.057
Female owner	-.645952	5.840914	0.912
Manager experience	.3595456	.302617	.241
Size	-24.17012**	14.17854	0.095
Region	24.61638*	10.23613	0.020
Legal status	8.5301	6.242138	0.179
Observations	53		
R2	0.4750		
F-value	4.98		
Prob > F	0.0002		
Adj R-squared	0.3795		
Root MSE	18.649		

**Source:** Author's calculation from World Bank enterprises survey, 2006 and 2011.

**Notes:** \* and \*\*denotes statistical significance at 5% and 10% confidence level respectively.

#### **4.2. Interpretation of the Empirical Results from the table 4 above:**

The Table 4 above provide the results of LRM analysis for 2006 and 2011. Based on the results, the overall LR model with Eight Predictors of Labour productivity or turnover of the firm; Size in terms of number of employees of the firm; Machinery vehicle and Equipment (Technology) of the firm; Female owner of the firm; Manager experience of the firm; Region of operation of the firm; Legal status of the firm, and Fixed assets of the firm worked well in explaining the difference on Job creation in Rwanda.

The table also showed that the Labour productivity of the business in Rwanda is not statistically significant in contributing to job creation. As it has an inverse relationship with Job creation. This means that as labour productivity or turnover of the firm in Rwanda increases, Job creation diminishes at 1.9% holding other factors constant. It is statistically insignificant not only at the level of 5% but also even at 10% of confidence level, since its p-value (0.629) is greater than 0.05 and 0.1. Referring to the sign of the coefficient, labour productivity is proved to have negative relationship with job creation in Rwanda. This could be due to the fact that Labour productivity reflects on a business' profitability and thus does not significantly contribute to job creation. As labour productivity or turnover of the firm increases, the entrepreneur may use its profit by acquiring new technology and other assets. Thus reducing number of workers hired. This was also identified by other researchers like (Munikrishnan & Verakumaran (2009).

From the table 4 above, Size of the business in terms of number of employees. The results found to exert a significant negative influence on Job creation in between 2006 and 2011. This is also explained by its large percentage where one unit of shift from Medium and large enterprises in Rwanda impacts job creation to decrease by 24.17% of number of employees holding other factors constant. It is statistically significant at 10% of confidence interval, because its p-value (0.095) is less than 0.1 of confidence interval. This means that in Rwanda as the business tends to be smaller they do not create more jobs compared to Medium and large enterprises. Thus SMEs in Rwanda do not create Jobs. This result confirms up on with other previous empirical studies where they have identified also that job creations and gross job losses are significantly higher among small firms than among large ones (OECD (1987)). and other researchers find also a clear negative relationship between net job creation rates and the size of establishments or

firms(Davis, Davis, Haltiwanger and Schuh (1996a, 1996b);Kirchhoff andGreene (1998); Reynolds (1996).

According to the regression results from the table 4 above, Machinery Vehicle and Equipment (technology) of the firm proved to have negative significant relationship with job creation in Rwanda. Since,its p-value (0.061) is less than critical value (0.1) holding other factors constant. From this results we can be confidently says thatwhen new technology is introduced into the firm, the chances of employing more labour reduces proportionately. This is identified by other previous researchers.

Refer to the regression results from the table 4 above, Region of the business (business environment) proved to exert significant positive relationship with job creation in Rwanda. This is emphasised by its large percentage or units in the way that establishing business in Kigali rather than in Butare job creation increases by 24.61638 units or 2462% holding other factors constant. This means that the chance of running business in Kigali city you create more jobs than in Butare city.or Urban and Rural , in urban the business create more jobs than in Rural areas. It is also approved by its p-value (0.02) which is very significant as it is less than 0.05 equivalent to 5% and 0.1 equivalent to 10% confidence interval. This identified also by other researchers like (Mead & Liedholm (1998).

As the regression results from the table 4 above, Fixed assets of the business plays a significantly positive relationship with job creation in Rwanda.This is explained by its share increase in terms of creating jobs in the way that when a firm increases its fixed assets the chance of creating more jobs by487% holding other factors constant and it is statistically significant at the level of 10% since its p-value (0.057) is less than 0.1 And this can force me to look at the side of financial institutions which facilitating businesses in their motto for making more effort so as to raise the capital of businesses in Rwanda .Thus creating more jobs. This has been identified by other previous researchers(Mead & Liedholm (1998);(Munikrishnan& Verakumaran (2009);OECD (1987).



Female owner of the firm rather than men has negative relationship with Job creation and statistically insignificant not only at 5% but also even at 10% confidence interval holding other factors constant. Businesses owned by female in Rwanda do not prove significant positive impact in creating more jobs according to the data, because they contribute at 65% less in creating jobs rather than men. That is to say when one firm owned by female increases, number of workers hired decreases by 65% .That is may be to the fact that in Rwanda like in other less middle income countries, about half of the micro enterprises are operated by women (Gomez, 2008; Mead & Liedholm (1998). Even so, micro-entrepreneurship among women is often part of a multiple-livelihood strategy that involves several other activities such as additional (informal) employment, for instance as a domestic worker, and agricultural work, such as subsistence farming. As a result, female-headed enterprises are often found in activities that can be operated from home, such as retail activities, knitting, sewing, cooking, brewing and other food processing as well as repair services (Maloney(2004). Because of home-based operations and a high degree of informality in female entrepreneurship, the latter is often 'hidden' and underreported in official statistical nets (International Labor Organization (ILO)& Women in Globalizing and Organizing (WIEGO) (2013). Compared to male headed businesses, women also tend to have fewer workers and pay them less. This is because women prefer a business with stable returns and income to take care of their families, rather than investing in risky business that may have higher returns and better growth prospects. This comes as no surprise, as most female self-employed are poor and highly risk-averse, and in turn are most likely to be necessity entrepreneurs.

This is the work of other researchers and policy makers in Rwanda to make changes, because the population of Rwanda is dominated by women with more done 52% and this large share of population have to be involved in business creativity and thus creating jobs even for themselves.

Similarly, the Legal status or nature of the firm showed positive relationship with job creation though statistically insignificant. This means that the private firm showed the ability of creating more jobs than Mixed and cooperatives in Rwanda holding other factors constant. This is explained by its large number of 853% in creating more jobs when the status of the business is operating in Sole proprietorship status. The regression results from table 4 above depict that when one firm shift from other forms of legal status to sole proprietorship the chance of creating more jobs increases by 853%. In addition to that other researchers also identified similar findings like the recent establishment census conducted in 2014 by NISR, where the results revealed that

almost all private establishments (99 percent) exclusively belong to Rwandans and 96 percent of them are owned by individuals (sole proprietorship status).

The manager experience proved to have positive effects on job creation. This is due to the fact that as you last long managing business, you must it and you become able to cope with challenges that may arise. And it can be associated with firm experience. Older Firms tend to require more employees than younger ones. Age experience has a slate positive influence in job creation that is to say one year of increase running business, job creation increases by 36% holding other factors constant. This tells us that, as you last long running business you increase your business as the way of creating more jobs. This result of relationships between job creation and variable such as Age was also been founded by other researchers like (Audretsch(1995); Broersma & Gautier (1997); Jovanovic (1982) Oliveira & Fortunato (2006).

## **CHAPTER FIVE:SUMMARY, CONCLUSION AND RECOMMENDATIONS**

### **5.1. SUMMARY**

This thesis identified the Labor productivity, business size in terms of employee number, fixed assets, Manager Experience, female owner of the business, Machinery Vehicle and Equipment, Region and Legal status are the main contributors towards job creation. Previous empirical studies explained that SMEs promote job creation; it is possible that such job creation is promoted via the fixed assets, Manager Experience, Machinery Vehicle and Equipment, Region and Legal status sources. However, Labor productivity, business size in terms of employee number, and Female owner of the business do not contribute to job creation in Rwanda.

**H<sub>1</sub>** of this study hypothesized that Size of Small Enterprises makes no significant difference on Job creation in Rwanda. Since its p-value (0.095) is less than critical value (0.1), the findings indicated that size of the business in terms of employee number exert inverse significant difference with job creation in Rwanda. It means that as the business tends to be smaller in Rwanda do not create jobs compared to Medium and Large enterprises. So, SMEs in Rwanda do not create more jobs compared to large enterprises. This is in line with (Davis, Davis, Haltiwanger and Schuh (1996a, 1996b), where they proved that SMEs dominate job creation simply is not true and for them, their belief is that small firms are major contributors of new jobs is largely based on methodological imperfections; Secondly SMEs are not over represented as job creators, and suggesting that they are, but only because large firms who are still in power changed their strategies, (Bennet Harrison (1994a, 1994b).

**H<sub>2</sub>** of this study hypothesized that the Region of the business makes no significant difference on job creation in Rwanda. Since its p-value (0.020) is less than critical value (0.05), findings indicated that Region of the business plays significant difference on job creation in Rwanda. This has been confirmed also by other researchers (Baptista and Carias (2007). For Job Creation and Destruction by Small Businesses in the Portuguese Regions and come up with concrete similar results that regions present different sceneries for job creation and destruction processes.

**H<sub>3</sub>** of this study hypothesized that the Business owned by women makes no significant difference on job creation in Rwanda. Since, its p-value (0.912) is less than the critical value (0.1), we can emphasize that business owned by female in Rwanda make significant difference on job creation. This in line with (Gomez(2008); Mead & Liedholm (1998); ILO and WIEGO (2013). Where they identified that Female Compared to male headed businesses, women also tend to have fewer workers and pay them less. This is because women prefer a business with stable returns and income to take care of their families, rather than investing in risky business that may have higher returns and better growth prospects. This comes as no surprise, as most female self-employed are poor and highly risk-averse, and in turn are most likely to be necessity entrepreneurs.

**H<sub>4</sub>** of this study hypothesised that the fixed assets of the business makes no significant difference on job creation in Rwanda. Since, its p-value (0.057) is less than critical value (0.1), we can firmly conclude by saying that fixed assets of the business make significant difference on job creation in Rwanda. This means that as the fixed assets of the business increase it impact positively Job creation in Rwanda. This has been also approved by previous researchers (Acemoglu (2001); Funke, Maurer, Siddiqui, & Strulik (1998); Winker (1999), (Munikrishnan & Verakumaran(2009).

## **5.2. CONCLUSION**

The purpose of this study was to assess whether the Labor productivity, Size of the business in terms of employee number, Manager experience, Fixed assets, Female owner of the business, Machinery vehicle and equipment, Region and Legal status contribute towards job creation in small and medium enterprises in Rwanda. After Regressing the dependent variable to the independent variables using panel data from census conducted by World Bank for the period of 2006-2011, which is a huge panel data of all SMEs operating in Rwanda according to their profile, the study showed the following results:

Firstly, the results identified that Size of the business in terms of employee numbers has significant negative difference on job creation. This means that in Rwanda as the business tend to be smaller they do not create more jobs compared to Medium and large enterprises. Findings is

in line with other previous empirical studies where they have identified also that job creations and gross job losses are significantly higher among small firms than among large ones. Other researchers find also a clear negative relationship between net job creation rates and the size of establishments or firms.

Secondly, Labour productivity is proved to have negative relationship and insignificant with job creation in Rwanda. This could be due to the fact that Labour productivity reflects on a business' profitability and the business owner may use its profit by acquiring new technology and other assets as the reason of insignificance to job creation. This was identified by other previous studies, where they have revealed that when labour productivity or turnover of the business increases, the entrepreneur may use its profit by acquiring new machinery and other properties.

Thirdly, the results identified that fixed assets of the business significantly contribute towards job creation. As the assets of the business increases impact positively on job creation in Rwanda. This is also in line with other previous empirical studies.

Fourthly, the results clarified that Region of the business or Business environments contribute significantly towards job creation. This is also identified by other previous empirical studies.

Fifthly, Businesses owned by female in Rwanda do not prove significant positive impact in creating more jobs according to the data, one number of increases of business owned by women, job diminishes by 65% less in creating jobs rather than men. That is to say when one firm owned by female increases, number of workers hired decreases by 65%. That is may be to the fact that in Rwanda like in other less middle income countries, about half of the micro enterprises are operated by women. This is in line with some other previous studies.

In addition, the results identified that Machinery Vehicle and Equipment (technology) of the firm has negative significant relationship with job creation in Rwanda. From this results we can confidently say that when new technology is introduced into the firm, the chances of employing more employees reduces. This is in line with other previous empirical studies.

Furthermore, the results identified that the manager experience in running business has positive impacts on Job creation in Rwanda. The manager experience proved to have positive effects on job creation. This is due to the fact that as you last long managing business, you must it and you become able to cope with challenges that may arise. And it can be associated with firm experience in the way that older Firm tends to require more employees than younger ones. This tells us that, as you last long running business you increase your business as the way of creating more jobs. This result of relationships between job creation and variable such as Age was also been founded by other researchers.

Finally, the results identified that legal status or Nature of the business plays positive influence on Job creation in Rwanda. This means that the private firm showed the ability of creating more jobs than Mixed and cooperatives in Rwanda holding other factors constant. In addition to that other researchers also identified similar findings like the recent establishment census conducted in 2014 by NISR, where the results revealed that almost all private establishments (99 percent) exclusively belong to Rwandans and 96 percent of them are owned by individuals (sole proprietorship status).

This thesis made several important contributions to SMEs entrepreneurship research. From an academic perspective, the thesis results give empirical support to the Kristen and Rogerson (2002), Uma Thevi Munikrishnan & Bhuvanesh Verakumaran (2009) model in that Size of the business in terms of number of employees, Labor productivity, Fixed assets, Manager experience, legal status of the business, Female business owner, Machinery vehicle and equipment and Region of the business contribute to job creation in SMEs.

Secondly, the thesis emphasized that awareness of Women incentives and Assets of the business among entrepreneurs is necessary to maximize the potential of the enterprise as concerned.

Thirdly, this thesis would be important to policy makers for them to realize that efforts have to be made in business in Rwanda, because Medium and Large enterprises have to be encouraged as it was approved that are the main to create more jobs than Small enterprises, the contribution of small and medium enterprises (SMEs) towards Job Creation. Also, awareness would be created amongst local residents as to the contribution of SMEs towards job creation and as an income generator.

## **5.3 RECOMMENDATIONS**

### **1) Construct a supporting environment for innovation and entrepreneurship**

The Region innovation means that business persons will either take advantage of existing gaps into new districts or Cities. Additionally creating an enabling environment that decreases the barriers to market entry will certainly spur entrepreneurship. To achieve this objective, entrepreneurship should continue to be combined into the different efforts of the economic development of the country by: Making entrepreneurship part of the explicit mission of the country's economic development efforts; Creating support mechanisms for entrepreneurs through the establishment of economic development programs that target entrepreneurs, and using entrepreneurial capital, and research networks to deliver services for entrepreneurs is paramount. By integrating entrepreneurship into the country's development efforts, government lends credibility and draws attention to the role of entrepreneurs allowing them to gather the force required to enable them actively participate in the transformation of the SMEs as the way of creating more jobs in Rwanda.

### **2) Offering incentives that foster entrepreneurship.**

Various examples indicate that access to reliable and steady sources of funding is essential to entrepreneurial growth and sustainability. By establishing a framework that encourages the funding of new ventures, government can continue to help ensure that solutions that work will sustain and grow their impact. To achieve this objective, government needs not only to invest in diverse sources of risk capital to fund entrepreneurs, but also to provide the fiscal incentives for investors to provide funding by: Developing a rich base of early-stage capital options to fund entrepreneurs; supporting and incentivizing infant SMEs; ensuring that risk capital is available to the wider society to broaden and enhance entrepreneurial capacity.

### **3) Take effective methods to scale**

Intensifying the reach of an established solution is often critical if the solution is to become truly transformative. Given the difficulties with identifying, supporting the spreading, or funding to scale, of successful initiatives, government can play a crucial role in expanding the reach of solutions that work by ensuring that knowledge is produced with clear standards and with easily accessible data, building entrepreneurial readiness through offering entrepreneurship education

in the curriculum and supporting Colleges of business to strengthen entrepreneurship in the higher education system.

#### **4) Reduce asymmetric information between financial institutions and SMEs**

Access to up to date and reliable information is a key precursor to lending. Developing the information disclosure regime by adopting clear and simple accounting standards and establishing credit bureaus would go a long way to encouraging lending to SMEs and boosting fixed assets of the business as the way of creating more jobs in Rwanda.

#### **5) Reinforcement of the different Programs created and adopted by Rwanda for boosting Businesses**

Such as:

Hanga Umurimo ,Business Development Services (BDS) Centres, Business Development Centres (BDC), Agaciro Kanjye, Entrepreneurship Training , Women and youth access to Finance program,Community Processing Centres (CPC),Integrated Craft Production Centres (ICPC) AGAKIRIRO, Sector Skills Councils, Business Incubation Centres (BIC), Youth Employment for Global Opportunities (YEGO), IPRC TVET,.Professional Internship,Internship Programme (PSF),...

#### **6) Encourage big firms to support small enterprises in Rwanda**

Since large firms generally have greater access to finance, they can be encouraged to assist smaller enterprises, particularly their suppliers, access finance. They can also provide other factors of production or guarantee loans made by financial institutions to the SMEs they work with, given that they already have an established relationship with these firms. The large firms can also assist SMEs to obtain export credits, like to the experience of Zambia's agro-food industry and in other countries that have developed such arrangements to address concerns.

#### **6) Foster the establishment of SMEs linkages**

Rwandan SMEs can learn from the experience of Asian SMEs who have formed clusters that enable member firms to seek finance together, provide collective guarantees, or even set up their own financial body. The relationships formed often make it easier for these networked firms to



get loans and lower rates of interest. Working together also means firms can get supplier credit and can borrow from each other. Trade associations can play a crucial role in fostering the development of SME networks in Rwanda.

#### **7) Reinforcement of financial institutions in supporting SMEs**

In Rwanda, like in many other African countries, there is a gap between the role of micro credit institutions and that of larger financial institutions. In addition to strengthening financial institutions, a viable strategy would also be to expand the scope of micro credit institutions to offer services to small businesses. Many of these institutions have limited funding and since they often rely on deposits that are short term in nature, there are asset and liability matching constraints for them to convert their deposits into longer term loans.

#### **8) Strengthening the work done by Private Sector Federation and Rwanda Development of Board**

To plan and implement regular capacity building in terms of helping business owner to improve their business skills. Moreover, entrepreneurial training should be provided to the youths before entering the business field instead of after they had already established the businesses. In his research Apol (2014) confirmed that business people who successfully negotiate the initial startup hurdles have greater chances of future success in their businesses; to increase the number of Vocational Training Centers capable of providing various skills in harmony with the potential natural resources and business opportunities available in each district of Rwanda.

We can suggest that the following topic can be done by other researchers:

1. Further research could address in more detail the relationship between the technological system and Job Creation in Rwanda, using Establishment Census data.
2. The factors that contribute in Job creation in SMEs of the economy whether are similar to that contribute to the Job creation in SMEs created in any economic activity.

## APPENDIX A:

**Table 1: Differences of Micro, Small, Medium and Large enterprises according to the World Bank Group (2013).**

Firm Size	World Bank Group definition: number of Employees	World Bank Group's enterprises surveys definition number of employees.	IFC's Financial Market's definition: Loan Size Bucket in USD
Micro	0-9	0-4	\$1,000-\$10,000
Small	10-49	5-19	\$10001-\$100,000
Medium	50-299	20-99	\$100001-1,000,000*
Large	300	100	\$1,000,000*

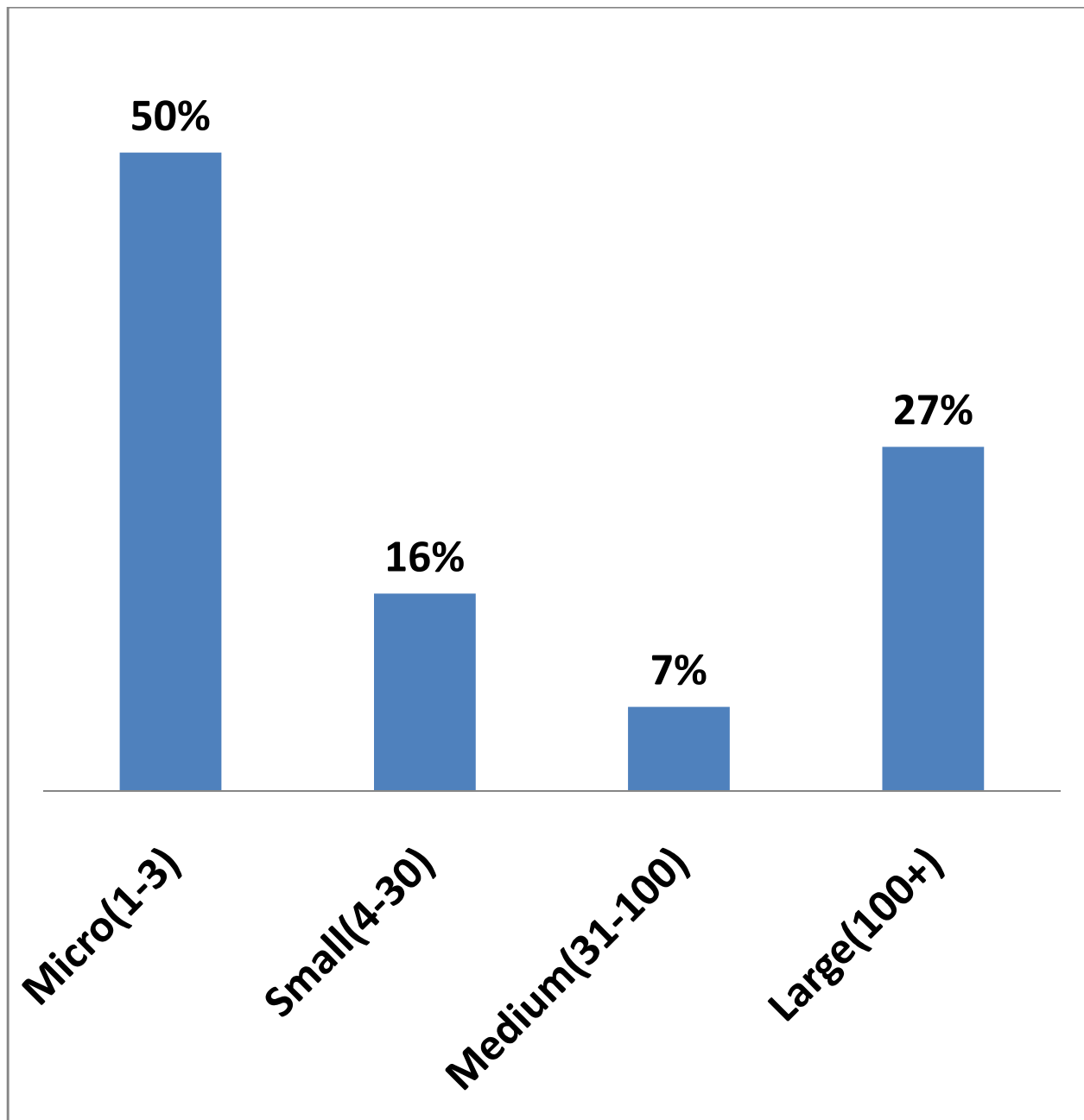
**Source:**World Bank Group (2013)

**Table 2: Differences of Micro Enterprises,Small Enterprises, Medium Enterprises according to Rwandan context.**

Size of enterprise	Net capital investment (million RWF)	Annual turnover(million RWF)	Number of employee
Micro Enterprises	Less than 0.5	Less than 0.3	1 to 3
Small Enterprises	0.5 to 15	0.3 to 12	4 to 30
Medium Enterprises	15 to 75	12 to 50	31 to 100
Large Enterprises	More than 75	More than 50	More than 100

**Source: MINICOM (2012)**

**Figure 1: New Jobs by establishment Size.**



Source: NISR Establishment census, 2014.

## APPENDIX B:

**Table 3: Regression Results.**

```
. regress jobcreation laborproductivity machvehihequipemnt Fixedassets femaleowner managerexperience Size
> region legalstatus
```

Source	SS	df	MS	Number of obs =	53
Model	13843.222	8	1730.40275	F( 8, 44) =	4.98
Residual	15301.9478	44	347.771542	Prob > F =	0.0002
				R-squared =	0.4750
				Adj R-squared =	0.3795
Total	29145.1698	52	560.484035	Root MSE =	18.649

jobcreation	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
laborproductivity	-.0256108	.0526879	-0.49	0.629	-.1317964	.0805747
machvehihequipemnt	-4.73e-07	2.46e-07	-1.92	0.061	-9.69e-07	2.33e-08
Fixedassets	4.87e-07	2.49e-07	1.95	0.057	-1.59e-08	9.89e-07
femaleowner	-.645952	5.840914	-0.11	0.912	-12.41754	11.12564
managerexperience	.3595456	.302617	1.19	0.241	-.2503389	.9694301
Size	-24.17012	14.17854	-1.70	0.095	-52.74509	4.404842
region	24.61638	10.23613	2.40	0.020	3.986825	45.24594
legalstatus	8.5301	6.242138	1.37	0.179	-4.050104	21.1103
_cons	-4.690252	21.05377	-0.22	0.825	-47.12134	37.74084

**Source:** Author's calculation from World Bank enterprises survey, 2006 and 2011

**Table 4: Descriptive statistics.**

```
. sum jobcreation laborproductivity managerexperience machvehihequipemnt Fixedassets
```

Variable	Obs	Mean	Std. Dev.	Min	Max
jobcreation	117	6.316239	19.31528	-85	98
laborproductivity	128	13.36907	34.06432	1	362.144
managerexperience	70	11.57143	10.18605	1	42
machvehihequipemnt	70	5.48e+07	2.74e+08	0	2.20e+09
Fixedassets	70	5.99e+07	2.74e+08	0	2.20e+09

**Source:** Author's calculation from World Bank enterprises survey, 2006 and 2011.

## REFERENCES

- Acemoglu, D. (2001). Credit Market imperfections and Persistent and Persistent Unemployment. *European Economic Review*, 45(4),665-679.[http://dx.doi.org/10.1016/S0014-2921\(01\)00107-6](http://dx.doi.org/10.1016/S0014-2921(01)00107-6).
- Aiginger, K. and G. Tichy. (1991). Small Firms and the Merger Mania. *Small Business Economics*,3,83-102.
- Alessandro Acquisti,Hartmut Lehmann. (1997). Job creation Destruction in the Russian Federation. *Trinity Economic Paper Series*, Paper Series No.2000/01 JEL Classification: P 52,J40.
- Altenburg. T.,& Eckhardt. U. (2006). Productivity enhancement and equitable development: Challenges for SME development. *Vienna:United Nations Industrial Development Organization Research Programme Combating Marginalisation and Poverty through Industrial Development*.
- Anwar.Ali Shah G.Syed.,M.M. Ahmadani,Nav.Shaikh,F.M.Shaikh. (2012). Impact Analysis of SMEs Sector in Economic Development of Pakistan. *Journal od Asian Business Strategy*,, 2(2), 44-53.
- Audretsch, D. B. (1995). Innovation and Industry Evolution. *Cambridge MIT Press,MA*.
- Audretsch, D.,& Elston, J. (2002). Does Firm Size matter?Evidence on the impact of liquidity constraints on firm investment behaviour in Germany. *International Journal of Industrial Organisation*,20( )1,1-17.[http://dx.doi.org/101016/s0167-7187\(00\)00072-](http://dx.doi.org/101016/s0167-7187(00)00072-).
- Baldwin, J. & Picot, G. (1995). Employment Generation by Small Producers in the Canadian Manufacturing Sector. *Small Business Economics*,7,317-331.

- Bank, W. (2013). *SMEs and Jobs*. International Bank for Reconstruction and Development, World Bank. World Development Report 2013.
- Baptista, R. and Carias, C. (2007). Job Creation and Destruction by Small Businesses in the Portuguese Regions. *For Presentation at the European Regional Science Association (47th Congress)*.
- Barbara Orser, Allan Riding, Jo Anna Townsend. (2004). Exporting as a Means of Growth for Women Owned Canadian SMEs. *Journal of Small Business and Entrepreneurship, Canada*.
- Birch, D. (1979). *The Job Generation Process. Final Report to Economic Development Administration*. Cambridge, MA: MIT Program on Neighborhood and Regional Change.
- Broersma, L., & Gautier, P. (1997). Job Creation and Job destruction by Small firms: An empirical investigation for the Dutch Manufacturing Sector. *Small Business Economics*, 9(3), 211-224. <http://dx.doi.org/10.1023/A:1017982719207>.
- Carpenter, R. E., & Petersen, B. C. (2002). Is the growth of Small firms constrained by internal Finance? *The Review of Economics and Statistics*, 84(2), 298-309. <http://dx.doi.org/10.1162/003465302317411541>.
- Darush, Y., & Salman, K. A. (2012). Assessing Determinants on Job Creation at the Firm Level Swedish Micro Firm Data. URL: <http://dx.doi.org/10.5539/ijef.v4n12p105>.
- Davidsson, P. (1995). SMEs and Job Creation in Sweden. *Manuscript prepared for the OECD secretariat/Working party on SMEs/ the Ad hoc Group on SME Statistics*.
- Davidsson, P. & Delmar, F. (1998). Some Important Observation Concerning Job Creation by Firm Size and Age. *Entrepreneurship and Small Business Research Institute (ESBRI), Sweden & Jonkoping International Business School (JIBS, Jonkoping, Sweden)*.
- Davidsson, P., L. Lindmark & C. Olofsson. (1993). Business dynamics in the Swedish Economy. *A Regional Perspective, report submitted to the EC Commission*.

- Davidsson, P., L. Lindmark and C. Olofsson. (1995 b). The Trend towards Smaller scale during the 1980's: empirical evidence from Sweden. *Paper presented at ICBSB's 40th World Conference, Sydney, June 1995.*
- Davidsson, P., L. Lindmark and C. Olofsson. (1998b). SMEs and Job Creation during a recession and recovery, in Z. Acs, B. Carlsson and C. Karlsson (eds). *SMEs, Entrepreneurship, and the Macro Economy (Cambridge University Press; forth coming).*
- Davidsson, P., L. Lindmark and C. Olofsson. (1995 a). Smallness, Newness and Regional Economic Development. *High-level Workshop on SMEs: Employment, Innovation and Growth, Washington D.C., 16-17 June 1995.*
- Davidsson, P., L. Lindmark and C. Olofsson. (1998a). The extent of overestimation in Small firm Job Creation-an empirical examination of the regression bias. *Small Business Economics (forth coming).*
- Davis, S. J., J. Haltiwanger and S. Schuh. (1996a). Small Business and Job Creation: Dissecting the Myth and Reassessing the Facts. *Small Business Economics*, 8, 297-315.
- Davis, S. J., J. Haltiwanger and S. Schuh. (1996b). Job Creation and Destruction, Boston, MA. *The MIT Press.*
- De Mel, S., McKenzie, D., & Woodruff, C. (2008). Who are the Microenterprise owners? *Evidence from Sri Lanka (Discussion Paper 3511). Bonn: Institute for the Study of Labour.*
- Dr. Klara Szita Toth, Andrea Gubik. (2005). SMEs in the Global Transition. *A paper by University of Miskolc, Hungary.*
- ENSDR. (1994). *The European Observatory for SMEs, Second Annual Report, Zoetermeer.* EIM Small Business Research and Consultancy/ European Network for SME Research.
- Folster, S. (1997). Do Entrepreneurs Create Jobs? *Working Paper, Stockholm: The Industrial Institute for Economic and Social Research.*



- Fox, L., & Sohnesen, T. P. (2012). Household Enterprises in Sub-Saharan Africa. *Why they matter for growth, Jobs, and livelihoods* (Policy Research Paper Series 6184). Washington, DC: World Bank.
- Fumagelli, A. and G. Mussati. (1993). Italian Industrial Dynamics from the 1970s to the 1980s: Some Reflections on the Entrepreneurial Activity. *Entrepreneurship and Regional Development*, 5, 25-37.
- Funke, M., Maurer, W., Siddiqui, S., & Strulik, H. (1998). The Job creation financing nexus: Evidence from a panel of West German Firms. *Small Business Economics*, 11(3), 225-235. <http://dx.doi.org/10.1023/A:1007959512867>.
- Gindling, T. H., & Newhouse, D. (2014). Self-employment in the Developing World. *World Development*, 56, 313-331.
- Gomez, G. (2008). *Do Micro-enterprises Promote equity or Growth?* Retrieved from <https://www.google.de/url?sa=t&rct=i&q=&esrc=s&source=web&cd=1&cad=rja&uact=8&ved=0ccmqfjAAahUKEwiKp8cjLHAhVDBBoKHQobAJA&url=http%3A%2F%2Fpub.eur.nl%2Fpub%2F32612%2Fmetis171938.pdf&ei=SK7ZVYrjBsOIaIq2gIAJ&usg=AFQjCNEOwykduugGgyNZeVCkV2s-oywt0g>.
- Hall, C. (2007). When the dragon awakes Internationalisation of SMEs in China and Implications for Europe. *This paper explores three converging and interrelated phenomena (The rising importance of SMEs in China's Internationalisation, Why have Chinese SMEs become such an international force? And The implication for Europe)*.
- Hampel- Milagrosa, A., Loewe, M., & Reeg, C. (2015). Which Factors determine the upgrading of Micro, Small and Medium sized Enterprises? *Evidence from Egypt, India and THE philippines*. *World Development* 66(2), 118-130.
- Harrison, B. (1994a). Small Firms Myth. *California Management Review Spring 1994*, 142-158.
- Harrison, B. (1994b). *Lean and Mean: The Changing Landscape of Corporate Power In the Age of Flexibility*. New York: Basic Books.

- Heisz, A., & LaRochelle-Cote, S. (2004). Corporate financial Leverage in Canadian Manufacturing: Consequences for Job Creation and Inventories. *Canadian Journal of Administrative Sciences*, 21(2), 111-128. <http://dx.doi.org/10.1111/j.1936-4490.2004.tb00328.x>.
- Helsinki De Kok, J., Deijl, & Veldhuis-Van Essen. (2013). Is Small still Beautiful? (D. G. Organisation, Ed.) *Literature review of recent empirical evidence on the Contribution of SMEs to Employment Creation. Deutsche Gesellschaft für International Zusammenarbeit and International Labour Organisation*.
- Igwe C.N., Adebayo M. S., Olakanmi, O. A., Ogbonna I. G., Aina O. S., (2013). Promoting Wealth and Job Creation in Nigeria. *Review of the Role of Entrepreneurship Journal of Sustainable Development Studies*, Volume 3, (Number 1, 2013, 80-100).
- James Foreman-Peck, Gerry Makepeace and Brian Morgan. (2005). Growth and Profitability of Small and Medium sized Enterprises. *Some Welsh Evidence, UK*.
- John, P. & Soderbom, M. (2012). Is Small Beautiful? Small Enterprise, Aid and Employment in Africa. *Research Brief based on WIDER Working paper 2012/94*.
- Jovanovic, B. (1982). Selection and the Evolution of Industry. *Econometrica*, 50(3), 649-670. <http://dx.doi.org/10.2307/1912606>.
- Khalid Al-Yahya (PHD), Jennifer Airey. (2013). Small and Medium Sized Enterprises in MENA. *Leveraging Growth Finance for Sustainable Development, MENA, nordic Institute*.
- Kierzenkowski, Jochebed Kastaneer. (2014). Boosting the Development of Efficient SMEs in the Netherlands. *Paper relates to the 2014 OECD Economic Survey of the Netherlands* ([www.oecd.org/eco/surveys/economic-survey-netherlands.htm](http://www.oecd.org/eco/surveys/economic-survey-netherlands.htm)), G01, G21, G23, J08.
- Kirchhoff, B. and B. Phillips. (1998). The effect of Firm Formation and Growth on Job Creation in the United States. *Journal of Business Venturing*, 3, 261-272.
- Kirchhoff, B. & P. Greene. (1998). Understanding the Theoretical and Empirical Content of Critiques of U.S. Job Creation Research. *Small Business Economics*, 10, 153-169.

- Kristen, M. and Rogerson, C. M. (2002). Tourism business linkages and Small enterprises development in South Africa. *Development Southern Africa* 19 (1) : 29-59.
- Kushnir, K., Mirmulstein, M. L., & Ramalho, R. (2010). Micro, Small and Medium Enterprises around the world. *How many are there, and What affects the Count? (SMEs Country Indicators)*. Washington, DC: World Bank/ International Finance Corporation.
- L. Organisation, I. (2013). *Women in Informal Employment: Globalising and Organizing*. Women and Men in the Informal economy: A statistical picture (2nd edition). Geneva: International Labour Organisation, International Labour Office.
- L. Organisation, I. (2015). *Small and Medium sized Enterprises and decent and Productive Employment Creation*. Report IV of the International Labour Conference, 104th session. Geneva: Author.
- Lang, L., Ofek, E., & Stulz, R. M. (1996). Leverage, Investment and Firm growth. *Journal of Financial Economics*, 40 (1), 3-29. [http://dx.doi.org/10.1016/0304-405X\(95\)00842-3](http://dx.doi.org/10.1016/0304-405X(95)00842-3).
- Liedholm, C. (2002). Small firm dynamics: Evidence from Africa and Latin America. *Small Business Economics*, 18(1-3), 225-240.
- Loveman, G. and W. Sengenberger. (1991). The Re-emergence of Small Scale Production: An International Comparison. *Small Business Economics*, 3, 1-37.
- Maloney, W. F. (2004). Informality revisited. *World Development*, 32(7), 1159-1178.
- Mead, D. C., & Liedholm, C. (1998). The dynamics of Micro and Small Enterprises in Developing Countries. *World Development* 26(1), 61-74.
- Munikrishnan, T. U. & Verakumaran, B. (2009). Job Creation in Small, Micro and Medium Enterprises (SMMTEs). *Taylor's University College, Selangor Darul-Ehsan, MALAYSIA. TEAM Journal of Hospitality & Tourism*, Vol, 6, Issue 1.
- Murat Seker and Paulo Guilherme Correa. (2010). Obstacles to Growth for Small and Medium Enterprises in Turkey. *Paper by World Bank*.

- Muritala Taiwo A1, Awolaja Ayodeji M2, Bako yusuf A. (2012). SMEs and Economic Growth in Nigeria. *OECONOMICA*, Vol 8,no 3, PP.45-53.
- Myers, S. C. (1984). The Capital Structure Puzzle. *Journal of Finance*,39(3),575-592.<http://dx.doi.org.102307/2327916>.
- OECD. (1987). The Process of Job Creation and Job Destruction. *Employment outlook*,97-220.
- Ohaka,J. and Agundu, P. (2012, July). Tax incentives and Corporate Financial Performance of quoted Manufacturing Sector Firms in Nigeria. *Index African Journal online:www.ajol.info.*, Vol.6(3) serial No.26, pp.42-58.
- Olivera, B., & A. Fortunato. (2006). Firm growth and Liquidity Constraints: Adynamic Analysis. *Small Business Economics*,27(2-3),139-156. <http://dx.doi.org/10.1007/s1187-006-0006-y>.
- Organization, I. L. (2014). *World of work report 2014: Developing with Jobs*. Geneva:Author.
- Parker, J. (1994). Patterns of Business Growth: Micro and Small Enterprises in Kenya. *PhD Dissertation*.East Lansing: Michigan State University.
- Rafel.K.K., Joch.Kastaneer. (2014). Boosting the Development of efficient SMEs in Netherlands. *Paper relates to the OECD Economic Survey of Netherlands*.
- Reeg.C. (2013b). Micro, Small and Medium Enterprise upgrading in India. *Learning from success cases(Studies 78)*.bonn:German Development Institute/ Deutsches Institute/Deutsches Institut fur Entwicklungspolitik.
- Research, D. E. (2001). The Role of Small and Medium Enterprises in Transition. *Growth and Entrepreneurship* .
- Reynolds, P. D. (1996). SMEs: Employment,Innovation and Growth. *The Washington Workshop*.Paris:OECD.
- Rwanda, T. N. (2013/14). *Integrated Living Condition Survey(EICVII,III,IV)*. Kigali Rwanda.

- Schreyer, P. (1996, 04). SMEs and Employment Creation. Overview of Selected Quantitative Studies in OECD Member Countries. *OECD Science, Technology and Industry Working Papers*.
- Singh, A., & Whittington, G. (1975). The Size and Growth of Firms. *Review of Economic Studies*, 42(1), 15-26. Hutchinson, J., & Xavier, A. (2006).
- Spilling, O. (1995). Do Small Firms Create Jobs? *Paper presented at the 6th ENDEC World Conference on Entrepreneurship, Shanghai, Dec. 1995. Statistics Sweden (SCB) (1997)*.
- Storey, D. and Johnson (1987). *Small and Medium sized Enterprises and Employment Creation in the EEC Countries: Summary Report*. EC Commission, Programme of Research and Actions on the Development of The Labour Market, Study No. 85/407.
- Syerige, N. (1996). New firms in Sweden from 1995 to 1996. *Statistica Meddelanden F 15 SM 9701. Orebro: SCB, publishing Service*.
- The Ministry of Finance and Economic Planning, EDPRS I. (2008). Kigali Rwanda.
- The Ministry of Finance and Economic Planning, EDPRS II. (2013). Kigali Rwanda.
- Tyler Biggs. (2000). Is Small Beautiful and Worthy of Subsidy? *Review on working papers about Development Facilities to assist small and medium enterprises (SMEs) in USA*.
- USAID and The IRIS Center. University Research Corporation International. (2008). The Role of Micro, Small and Medium Enterprises in Economic Growth. *A Cross-Country Regression Analysis, University of Maryland*.
- Veselin Kuntchev, Rita Ramalho, Jorge Rodriguez-Meza, Judy S. Yang Version. (2012). Enterprise Surveys regarding access to finance by SMEs. *Finance and Private Sector Development Vice-Presidency of World Bank Group*.
- Yazdanfar, D. (2011). The Growth determinants among Swedish SMEs: Evidence from Firm level data. *International Journal of Business and Globalisation*, 6(3-4), 313-328. <http://dx.doi.org/10.1504/IJBG.2011.039390>.

**AUTHORISATION OF SUBMISSION OF POST GRADUATE THESIS**

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