THE EFFECT OF ENTREPRENEURIAL AND COMPLEMENTARY FACTORS ON EMPLOYMENT: EVIDENCE FROM UGANDA'S MANUFACTURING FIRMS

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ABSTRACT

In a rapid socio-economic and demographic change in an increasingly complex world, it is widely recognized that manufacturing firms need more attention than usual in order to provide employment opportunities for an increasing population. Uganda is known to have one of the highest unemployment rates and a declining manufacturing sector despite having one of the Highest Total Entrepreneurial Activity and government continued support. The objective of this study was to establish the effect of entrepreneurial and complementary factors on employment in Uganda's manufacturing firms. The data used was from 2006 Manufacturing Survey carried out by World Bank's Regional Program on Enterprise Development in collaboration with Uganda Manufacturers' Association Consultancy and Information Services. The firms covered by the survey were from the Bureau of Statistics Business Register. Data collected was analyzed using negative binomial regression model. The results showed that some entrepreneurial and complementary factors positively affected the level of employment. The study recommended lowering of interest rate on loans, supporting existing firms by carrying out business education, and supporting elites in starting up manufacturing firms. Promotion of export production and investment in technology are also of paramount importance in Uganda's quest to increasing employment.

Key Words: *Firm factors, Intervening factors, Complementary factors, Entrepreneurial factors Employment*

Introduction

Employment structure in Uganda's manufacturing firms is such that more than half of the enterprises are small sized in terms of the numbers employed. Only about 9 percent of the firms employ more than 50 works, while 30% employ between 21 and 50 employees (UBOS, 2002). This shows the predominance of small sized firms in Uganda. The overall median employment of about 27 employees per firm is low compared to Uganda's neighbors Kenya and Tanzania

with 55 and 30 employees per firm respectively (Benn et. al. 2005).

In 1989, the government of Uganda estimated manufacturing firms' contribution to employment to be only about one-third of post independence peak levels achieved in 1970 and 1971, when 75% of non-farm export earnings and 80% of non-farm employment came from commerce and manufacturing firms (Legget, 2001). Legget explains that the main problem during this time was acute shortage of qualified and skilled Ugandans to work in manufacturing firms. Further more, only 11 out of 82 manufacturing establishments surveyed by the Ministry of Finance Planning and Economic Development (MFPED) were operating at more than 35 percent capacity. Between January 1986 and June 1989, overall employment increased and the contribution from manufacturing increased from 5 percent to more than 11 percent during the same period (MFPED, 2003b).

In a bid to increase employment opportunities in manufacturing firms, the government of Uganda joined the US tariff free Africa Growth Opportunity Act (AGOA) initiative. This began in 2001 and the main exports were textiles and apparels. However, Uganda's performance was not impressive and most of the textile firms involved closed shop leading to massive laying- off of workers. This failure points to the need to invest time and money in research to make better products instead of stampeding the market to make a shilling today instead of one thousand next week (Salinger and Lynn, 2001).

Evidence from data on manufacturing firms in East Africa suggests that foreign owned firms contribute a lot to increased employment and potentially add to future growth. This contrasts with the complaint that foreign firms exploit local labor and make no contribution to the wider economy, either through creating jobs, training workers, or in using local suppliers (Benn et. al. 2005). Uganda like many other Sub-Saharan countries has a very dynamic growing manufacturing sector which is by far among the most important employer in Uganda. It is estimated that the manufacturing sector employs about 23% of the total non-farm private sector workers (PSD/MSEPU, 1999). At present, manufacturing firms represent perhaps the best alternative for employment provision and economic growth. Growth in the manufacturing sector though currently higher, has remained modest at around 2.9% up from 0.1% in 2005/2006 (UBOS, 2008). The share of industry to Gross Domestic Product (GDP) has remained virtually unchanged at 21% in 2005/2006 and 2006/2007 (UBOS, 2008). The overall employment in the sector has remained quite low despite government effort to promote manufacturing as a means to increase non-farm employment.

Statement of the Problem

Though Uganda has a high Total Entrepreneurial Activity (the sum of the number of persons starting business and the number of owners of business that were established less than 3.5 years before the reference date, as a percentage of the labor force) of 29.2 within the context of Global

Entrepreneurship Monitor (GEM), entrepreneurship in Uganda is quite a different type of phenomenon compared to other countries (GEM, 2003). This is because entrepreneurship in Uganda neither boost wealth creation nor employment, it is a survivalist mechanism based on '**necessity**' and not on '**opportunity**'. In addition, most highly educated Ugandans have a reputation for aspiring for white-collar employment and are reluctant to "make their hands dirty" (Farstad, 2002). While the number of graduates has been increasing over the years, the small number of highly educated Ugandans in business such as manufacturing firms is quite striking.

Although supporting entrepreneurial (factors which relate to defining features of entrepreneurs) and complementary factors (those which are interdependent or additive to the entrepreneurial ones, and include firm and intervening factors) have been portrayed as a way for increasing the number of jobs in Uganda's manufacturing firms, they have done little to increase the job availability (MFPED, 2003a). The existing evidence, however, is based largely on descriptive or correlational studies based on self-report data. No study has looked at the effects of these factors on employment in the Uganda's manufacturing firms using empirical evidence. This study therefore seeks to fill this gap.

Objectives of the Study

The general objective of the study was to investigate the effect of entrepreneurial and complimentary factors on employment in the Uganda's manufacturing firms.

Specific objectives of the Study

1. Determine whether entrepreneurial factors have an effect on employment
2. Establish whether complementary factors have influence on employment

Literature Review

There has been quite a considerable amount of literature on entrepreneurship and employment both in Uganda and on the international scene. For instance, Blalock and Gertler (2004) described entrepreneurs as the bedrock of the capitalist system, and their growth has to be seen in the context of the development of societies that allow and encourage private accumulation of capital for investment. In short, entrepreneurs are a source of employment in any economy.

Entrepreneurial Factors

Using 6094 responses from Spanish manufacturing firms to investigate the relationship between a firm's strategy, its resources and its employment performance, Vega-Jurado (2008) found that only education of entrepreneur had a positive effect on employment generation and social capital of entrepreneur was not significant. Therefore, firms whose owners had higher education were found to have had more employees than those firms whose owners had little education.

Soderbom and Teal (2001), in their discussion about worker's schooling and experience in Sub-Saharan Africa found that worker's schooling and experience is not what drives employment per se, but investment in technology with which the firms operate that is the stronger determinant of employment. They emphasized that to achieve steady increase in employment; investment in technology needs to be given priority in order to enhance production of quality products. Badagawa (2002), also clearly pointed out that investment in technology is a key requirement for productivity enhancement and catch-up in Uganda's manufacturing firms. Technology was therefore found to promote employment in Uganda's manufacturing firms.

Studies carried out in most Sub-Saharan African countries by Barr (1997) revealed that firms owned by non- Africans employed more workers than those owned by Africans. The explanation was that entrepreneurs from other countries would have large networks, a wider capital base and business skills. Moreover these non-indigenous entrepreneurs, in addition to having experience, they would have more global linkages necessary to begin on the transition from commerce to modern manufacturing hence availing more avenues for employment. European entrepreneurs in Nigeria first began to shift into larger-scale, import-substitution industries (ISI) after 1957 as a defensive reaction to new tariffs on imports. In Kenya, manufacturing in the 1920 had already been started by Indians. This trend continued up to the 1950 and by the mid-1980 one study concluded that "Kenyan Manufacturing Industry is almost exclusively owned by multinational corporations and Kenyan Asians". African Kenyans owned very few medium or large-sized manufacturing firms.

On the issue of gender based entrepreneurial studies, research on women in business was first popularized by Allen and Truman (1993). Their research showed extensive revelations in developed countries especially the USA and Canada. These studies developed a body of knowledge from which theories are emerging and prescriptions for success are derived. Allen and Truman's study concluded that women entrepreneurs in developing countries are very scarce and this presents a problem in understanding women entrepreneurship. This therefore limits the role women entrepreneurs play in modernizing developing economies as well as facilitating enterprise development in transition economies. They suggested that since theories on women entrepreneurs have emerged primarily from research in developed countries, it is important to examine the extent to which these studies apply in the context of developing countries.

According to studies carried out in USA, there is a big variation on sex of employers of various large manufacturing firms and their states of origin. While running the logistic model, Zelterman (1999) made the assertions that overall, 64% of employers were males and that most of them came from the Mid-Atlantic States and Pacific States than elsewhere and that the North East States had least number of employers. The reason given was that the Mid-Atlantic and Pacific States had a concentration of industries serving overseas markets.

On the firm ownership, the study carried out in Kenya on 800 firms by Coughlin (1988), found out that firms whose owners had experience in manufacturing had a lesser propensity to employ than those who have just entered in business. This was confirmed by a study carried out by Bernard and Jensen (2004) who also found that persons who had owned firms for a long time were more likely to employ fewer people. The explanation being that employers with experience were in position to remove loop- holes that are a hindrance to their business and concentrate only on few workers with high marginal productivity.

Complementary Factors

Firm factors: the affiliation to an association by small firms for technological development, promotion and sales permits them to share resources and experience, thereby simplifying entry into foreign markets thus enlarging their employment capacity. Research conducted on Italian manufacturing firms by De Toni and Nassimbeni (2001) affirm that utilization of external services fosters internal capacity which a small company alone would be unlikely to achieve. These cover critical areas such as product design and technological development where small companies may not possess competency. The researchers found that these firms had higher chances in employing people than before affiliation.

Firms that are members of a business association are stable and stay in business for long. Covin and Slevin (1991) have singled out associations as contributing to firm survival and performance and eventually employing many people. Using analyses from manufacturing firms in America, Latin America and Australia, these authors argue that there is sharing of ideas from many entrepreneurs and such attributes are necessary for firms of all sizes to prosper and flourish in competitive environment for a long time. Most firms, including manufacturing firms in Sub-Saharan Africa are small. Indeed, even the so called large ones in Africa are not large enough when compared to the ones in industrialized countries. Large firms in developed countries employ 500 people and more while in East Africa, they start at 100 employees (OECD, 2005). According to Harding (2008) this is because of lack of ingenuity among Africa's entrepreneurs for the past 50 years to set up large employing firms and ultimately boost exports. On the contrary, Wagner, 1995 postulates that, small businesses have played a positive role in promoting exports and employing many people in developed economies as well as developing economies (most notably South East and East Asia and the economies in transition). He however wonders "Why small businesses may not be an adequate engine in creating jobs and increasing exports in Africa?" According to McCormick and Atieno (1998), many of the small firms established in Africa appear to have developed out of family business. They are often characterized by family employment, very limited vertical specialization and diversification and may develop into clusters of petty commodity producers rather than full-blown industrial clusters. This they assert may be one reason for the limited success of many African private enterprises to offer employment to their citizens.

One the other hand, empirical research findings about inheritance of firms among European countries indicates that family background is extremely important, influencing the choice to become an entrepreneur, and how entrepreneurial roles are played. Based on 220 family businesses operating in Europe, the researcher found that these firms are often associated with employment advantages of different types. Dyer and Handler (1994), state that there is almost total agreement that the existence of a family business does encourage the development of entrepreneurship. They show that parents who own a business can literally use the family business as a laboratory where they develop and test the entrepreneurial skills of the offspring by making them work in the family business. The results also portrayed that such firms obviously have existed for a long time and have better reputation in handling workers than newly established firms.

Intervening factors: Governments have a duty to provide non-indigenous technology to their entrepreneurs through establishment of manufacturing firms in order to boost employment. Ruth (1992) described a business promotion program set up in the Philippines to provide expensive technology that could not be afforded by local entrepreneurs. She demonstrated that the government set up such projects or appropriation which yielded jobs or other benefits to the local people and provided other opportunities to its people. Therefore, entrepreneurs require an "enabling state" to provide the policy framework, supportive services, and the public goods of a social and physical infrastructure in order for manufacturing firms to thrive. For example, Jesudason (2000) notes that in Malaysia, the lack of the state to provide sufficient supportive services compromised the nation's ability to sustain manufacturing firms comparable to the Chinese firms. This seriously impeded the number of jobs created in the Malaysian economy. It is therefore noted that government's economic policies and bureaucratic decisions are frequently detrimental to the nation's long-term stance on industrialization and employment creation.

As a way for increasing number of jobs in manufacturing firms, virtually all developing Asian countries assist Small and Medium Enterprises (SME) in some way, including among, other things, intervention in finance (encompassing not only efforts to improve SMEs access to finance, but also to lowering the cost of finance) , provision of various types of training for workers and entrepreneurs, technology extension services like internet, marketing assistance and business development services (Rick ,1993). However, very little is done in Uganda though the Private Sector Foundation is trying to promote strategic investments in the manufacturing industry but with a lot of financial constraints (UNCTAD, 1999).

Another feature about advent of many entrepreneurs in Sub-Saharan Africa is the extension of credit to small manufacturing enterprises. For instance, Kenya enjoys this facility better than any other East African country through various micro-finance institutions such as Pride Africa Project, Kenya Women's Finance Trust, and the Equity Bank Kenya. This has empowered local communities to set up small and cottage industries hence absorbing originally redundant population (see www.doingbusiness.org). A careful look at World Bank's East Africa Ease of

Doing Business Indicators (2008) shows that getting credit ratings for East African countries are Rwanda -2, Tanzania -4, Uganda -2, and Kenya +19. According to this rating, the higher the rating figure the better for the country concerned.

Research Methodology

Research Design

In order to achieve the intended objectives, the study used exploratory research design and the data from the 2006 Manufacturing Survey carried out by RPED in collaboration with UMACIS (RPED, 2006).

Description of Variables used

The dependent variable was number of persons employed by various firms as was captured in the survey. The independent variables included entrepreneurial factors and complementary factors (firm factors and intervening factors).

Data Analysis

The data was analyzed at three levels using Stata Version10.0 software. At the Univariate level, descriptive statistics such as mean, variance, and box plots were used while at the bivariate and multivariate levels, the negative binomial regression model was used. The choice for this was based on the fact that this model unlike Poisson is the more suitable when the count data to be analyzed exhibits variances which are greater than the mean, and this was the case with our data.

The univariate analysis served two purposes; namely, description of variables and preparation for multivariate analysis. Bivariate analysis was used to select variables used at multivariate analysis after fitting a simple negative binomial model. Only 18 variables were significant and therefore assumed to have effect on employment. Multivariate analysis was employed to establish the net effect of entrepreneurial and complementary factors on employment. Dummy variables were created for explanatory variables that were deemed categorical in order to fit the model. Since the dependent variable was a count, the negative binomial regression model was the most appropriate and the model took the following format:

$\log(\lambda) = b_o + b_i x_i$. Where, $i = 1$ to 18

λ = mean number of employees per firm

b_o = Constant term

b_i = Parameter estimates that explain the rate of change of the number employed with respect to independent variables

x_i = Entrepreneurial or complementary factors

The results of the negative binomial model were discussed by looking at the p-values corresponding to different variables. The level of significance at multivariate level was at 5%. This meant that the p-values which were less than or equal to 0.05 were assumed to have a positive net effect on numbers employed by the firms.

Data Analysis and Discussion of Findings

Entrepreneurial Factors

On the average, the study showed that the largest shareholders owned about 74% of the shares. Percentages of shares owned by largest shareholder were therefore highly skewed to the left. The study also revealed that 25% of the firms had 50% of their shares owned by the largest shareholders and 50% of these had 85% of their shares owned by largest shareholders. Furthermore, the survey showed that many of the firms were owned 100% single handedly. This is common in Uganda where most businesses are owned by private companies with sole proprietors and very few by partnerships.

From the survey results, the average number of years in experience among owners of firms was 6.5 years. The maximum number of years of experience was 45 while others had no experience in the industry they owned. Further more, Figure 4.2 shows that number of years of experience was skewed to right with 75% of the owners of firms with experience of 10 years or less. Half of them also had owners with experience of 3 years or less while 25% of them had owners with no experience at all. Twenty five percent of the firm owners had experience of more than 10 years. By and large, a big number of firms had their owners with few years in experience. This may account for the low export base and poor quality products that do not compete favorably on the international market. However, findings show that there were some firms whose owners had experience of so many years and thus were offered as outliers or exceptions. These may be firms of say Indians and parastatals which have been in existence since the 1970s.

Based on information obtained from the study, Ugandan nationals owned most of the firms. Thus about 3 in 5 firms according to the survey were owned by Ugandans which is a good indicator as far as employment is concerned. Kenyans, Tanzanians, other African and other non-African owned the remaining firms.

Ownership of firms by sex revealed that majority of firms were owned by males. This is a common trend in the world of business and reflects societal perceptions towards women who are not allowed to carry out business risks. On the level of education completed by the firm owners, the survey results indicated that most firms were owned by those who had vocational training, university degrees and secondary school certificates. This indicates that a sound formal education is both a necessary and sufficient condition for one to succeed in setting up a manufacturing firm.

The other entrepreneurial factor is part of Uganda where Ugandan firm owners come from. The results indicated that 3 in 20 firms are owned by people from eastern region, 2 in 20 firms by those from the north, 9 in 20 firms by those from central and 6 in 20 firms by those from the west. This can be attributed to the fact that central region is located in an area which holds the nucleus of Uganda's business enterprises whereas the westerners strong attachment to the state may give them a comparative advantage to credit access.

Complementary Factors

Firm Factors: On average, the firms surveyed had been in existence for about years. This variable was highly spread with a minimum of 8 years and maximum of 100 years. The data was highly skewed to the right with 75% of firms having been in existence for less than 23 years. Half of these had been in existence for less than 15 years. This gives a picture of a young generation of firms due to the fact that many of them started coming up in the 1990s. The only firms which had been in existence for many years were those owned by Asian and the parastatals which started during the colonial era.

With the legal status of the firm, 15 in 25 firms were privately held limited companies while 6 in 25 firms were sole proprietorships. Publicly listed companies and publicly held limited companies were the least in number with about 1 in 25 firms. This may be attributed to government policy of privatization and liberalization of companies in Uganda since the 1990s. This policy encourages privately held limited companies and partnerships while suppressing publicly listed companies and cooperatives. However, a good number of firms are owned by sole proprietors due to the enterprising nature of Ugandans. As for a firm being a member of an association, the study reveals that 9 in 20 firms were part of a professional association whereas about 4 in 20 were part of other general association. This is a healthy trend as firms find it useful to belong to consortium in order to get some concessions from governments.

There is a low marginal propensity to export in Uganda because about 1 in 5 firms were exporting directly and about 1 in 4 firms were directly importing raw materials. This shows that firms spend a lot on importing raw materials while exporting little. Regarding whether firms are part of a family of firms or an industrial group, 73 in 100 firms were not and this explains why there are very few chains of manufacturing firms in Uganda. The survey also revealed that 39 in 50 firms had been started, 8 in 50 firms were bought and the rest either inherited or were acquired in other ways .This implies that most firms in Uganda are just started hence a high TEA value given that most of them are young.

On the employment structure of firms, the study shows that on average firms employ 143 people. The statistics also disclose that the distribution of employees among firms was highly spread with a minimum of one employee and a maximum number of 6500 employees. Most firms were employing 10 people or less whereas half of them were employing 23 people or less. This implies that most manufacturing firms in Uganda are quite small.

Intervening Factors:

Among the firms surveyed, on average 6% of the employees use computers on their jobs. The results of the study indicate that the percentage distribution of people who use computers at their workplace was highly skewed to the right. 75% of all the firms studied indicated that less than 5% of their workforce used computers.

Financial accounts of the firms were analyzed by looking at those which keep books of accounts on an annual basis. It was found about 3 in 4 firms kept books of accounts in order to guard against losses, 1 in 5 had loans and carried out pre-cautionary health checks whilst about 3 in 10 did carry out formal training. The low proportion of those with loans and health checks may be attributed to high interest rates in commercial banks and the poor workers' health while that of carrying out formal training reflects the use of poorly skilled workers in Uganda's manufacturing firms.

The study further showed that investment in technology in the last three years prior to the survey was about 9 in 20 whilst those that were located in an industrial estate where the government or private sector provides infrastructure were 8 in 20 firms. Firms that could utilize information from the internet were about 6 in 20 firms. This shows the low level of infrastructure development in the Uganda's industrial sector.

In relation to business environment, firms were asked if tax rates were a problem and the study revealed that around 9 in 10 firms regarded it as a problem. Further more, firms were asked to generally rate the efficiency of government in delivering services and 9 in 20 firms were dissatisfied with government's way of delivering services. This explains why the prices of many manufactured goods in Uganda are high.

Presentation of the Findings at Multivariate Level

Here a multivariate negative binomial regression model was fitted to the data in order to determine which variables actually have effect on the number of employees per firm. In order to gain some insight into which variables should explain the model, Table 4.3 offers the parameter estimates and their p-values. The entire model ($\log(\lambda) = b_o + b_i x_i, i = 1$ to 18) assumes the parameters or coefficients of the variables, given the other predictor variables in the model are held constant at 5% level of significance.

Discussion of the Findings at Multivariate Level

Entrepreneurial Factors

Years of Experience of Firm Owner: The study showed that increasing the numbers of years of experience of the owner of the firm by one would increase the mean number of employees by 0.02. In addition, the performance of these entrepreneurs improves leading to the high chances of the firms' survival. These findings are contrary to those of Bernard and Jensen (2004) who

found that the employers who had owned firms for a long time were more likely to employ fewer people because they had the ability to remove loop holes that their businesses progress and concentrate only on few workers with high marginal productivity.

Education Level of the Firm Owners: The study showed that the level of education completed by the owner of the firm was related to the level of employment in the firm. The owners completion of primary school, university first degree and university-post graduate degree would increases employment by 0.6, 0.7 and 0.9 times respectively than a firm whose owner had no formal education. The other factors were insignificant. The other observation to make is that there is a likelihood of firms owned by people with university first degree and post-graduate university degree being larger and more efficient than those with no formal education. This is in line with the study by Vega-Jurado (2008) who found that the education of entrepreneur had a positive effect on employment generation and social capital of entrepreneur was not significant. However, Soderbom and Teal (2001) disagrees with this and emphasizes investment in technology as the stronger determinant of employment than education. In spite of the above findings, most businesses in Uganda are owned by primary leavers especially those who drop out due to lack of school fees and whose only way of getting employed is to join business as a way of earning a livelihood.

Region of Origin of Ugandan Firm owners: The results of the study revealed that firms whose owners are Ugandan by nationality and come from South Western Uganda would employ 0.5 times less than firms whose owners is hail from Eastern region. The others are not significant. The reason for this could be that firm owners from eastern Uganda are associated with entrepreneurs of Asian descent who put up larger and medium plants than their South Western counterparts and therefore require more workers. Zelterman (1999), in a study among owners of US manufacturing industries, found that most firms were owned by people from the Mid-Atlantic States and Pacific States than elsewhere, simply because these states were purportedly concentrated with many industries serving overseas markets.

Complementary Factors Firm Factors

Years of Existence of Firm: The years in existence of a firm showed that a one year increase in years of firm‘s existence increased the number of employees by 0.01. Therefore, the more a firm stays the more people it is likely to employ given that it expands and gets a bigger share of the market. Covin and Slevin (1991) also in their study stressed that a firm’s survival and performance eventually leads to employment of more people.

A Firm as part of a family of firms or industrial group: The study found that a firm not being part of an industrial group meant that it employ 0.3 times less people than a firm which is part of an industrial group. The reason for this is that firms that are part of an industrial group are stable, large or medium and often have a large capital base and tend to employ many people. Quite often such firms have a comparative advantage in sharing technology, transport costs and there are inter-linkages in many sections. This is in conformity with De Toni and Nassimbeni (2001) who found that utilization of external services by firms fosters internal capacity which a

small company alone would not achieve. Such services cover critical areas such as product design and technological development where small companies may not possess competency.

Firm Acquisition Status: According to this study, a firm that was either bought, inherited or belonged to other categories employed either 0.7, 0.9 or 1.9 times more than a firm that was newly established. This can be a reflection of today's structure of manufacturing firms in Uganda whereby most newly established firms belong to Ugandans and are small in nature and tend to employ fewer people vis-à-vis other firms. Further more, these results confirm the assertion that new firms are established by people having no better options for work and often characterized by lower income levels. This concurs with McCormick and Atieno (1998), who found that many of the small firms found in Africa appear to have developed out of family business, often characterized by family employment. Further more, Dyer and Handler (1994), state that some firms have become successful in developed and developing countries because of inheritance. They found that parents who own a business can use the family business as a laboratory where they develop and test the entrepreneurial skills of the offspring by making them work in the family business.

Firm's Export and Import Status: The study further reveals that a firm that does not directly export its products would employ 1.0 times less than a firm that exports its products directly. However, a firm that does not import its raw materials directly was statistically insignificant. This illustration justifies the fact that firms which export their products often tend to employ many people. However, responses from the GEM survey (GEM, 2003) indicate that firms which meet international requirements are few in Uganda because of institutional constraints. This notwithstanding, Wagner(2005) points out that, small businesses have played a positive role in promoting exports and employing many people in developed economies as well as developing economies.

Intervening Factors

Keeping Financial Accounts: For the case of a firm that keeps financial accounts, the study established that a firm that did not keep financial accounts on an annual basis would employ 0.3 times less than a firm that kept financial accounts. From the study most firms which keep books of accounts do so as a measure against losses hence credible firms which employ more people fall in this category. This again entails firms to recruit qualified and skilled staff in order to remain in business. According to Gibb (1993), European firms are assisted by their government to provide business development services like book keeping, internet as a way for increasing the number of jobs in manufacturing firms.

Source of Capital: Analyses of the study results further show that a firm which did not have bank loans at the time of the survey was employing 0.5 times less than a firm that had bank loans. There are higher chances that firms which employ more people have the capacity to provide sufficient collateral security to obtain loans since in most cases these are large, or medium firms. Most importantly, without money capital a firm can hardly stay in business except for a few micro firms which operate on a family or individual basis. This is confirmed by

the World Bank study on East Africa Ease of Doing Business (2008) which showed that extension of credit to manufacturing enterprises saw the advent of many entrepreneurs especially in Kenya. Similarly, Ruth (1992), states that vibrant credit markets in Malaysia and Indonesia made it possible for their companies to advance beyond the single family firm toward complex partnerships and corporations.

Investment in Technology: Considering a firm investing in technology, a firm that did not invest in technology would employ 0.2 times less than a firm which did invest in technology. This is common with large firms that have a large capital base and would want to improve on quality so that they can favorably compete on world market. Such firms quite often employ many people compared to firms that do not invest in technology. In fact Ruth (1992) described how provision of expensive technology to manufacturing firms by the Philippines government increased the number of jobs and other opportunities to her economy. Similarly, Soderbom and Teal (2001) and Badagawa (2002) found that investment in technology within which the firms operate is a strong determinant of employment in manufacturing firms.

Conclusions

The study found that number of years of firm in existence, number of years of experience of firm owner; firm acquisition status and education level completed by firm owner had positive effect on firm employment. On the other hand, the region of origin of Ugandan firm owners, firm as part of a family of firms or industrial group, export status of firm, keeping financial accounts, source of capital and investment in technology had negative effect on employment.

Policy Implications

Uganda government ought to facilitate credit markets such as micro-finance institutions and commercial banks where entrepreneurs can get credit for establishing manufacturing firms. The government through UDB should avail credit to people interested in setting up manufacturing firms so as to widen ‘opportunity’ based entrepreneurs to provide employment.

Government should also look for ways to improve entrepreneurship and access business education to entrepreneurs such as on-job training, refresher courses on sensitive issues like record keeping.

Government through private foundation schemes and line ministries ought to encourage graduates to get involved in manufacturing firms as a way of increasing jobs.

Policy measures ought to be put in place to support the existing firms through financial bail outs, availing land for expansion and special tax considerations. There is also need to put more emphasis on firms that export their products directly.

Lastly, government should help firms to get new and appropriate technologies so as to permit them strengthen their innovative practices.

References

Allen, S. and Truman, C. (1993), Women in Business: Perspectives on Women Entrepreneurs. Routledge Publishers, London.

Badagawa, G. (2002), "Situational Analysis on Governance: Industrial Governance, Policy Development, Economic and Corporate Governance in Uganda." Private Sector Foundation Working Paper

Barr, Abigail. (1997), "Social Capital and Technical Information Flows in the Ghanaian Manufacturing Sector," Unpublished Paper, Center for the Study of African Economies, Oxford University (May).

Benn Eifert, Alan Gelb and Vijaya Ramachandran. (2005), "Business Environment and Comparative Advantage in Africa: Evidence from the Investment Climate Data." Working Paper 54. (Washington, DC: Center for Global Development).

Bernard, A.B., and Jensen, J.B. (2004), "Why Some Firms Export", Review of Economics and Statistics 86: 256-9.

Blalock, G. and Gertler, P. (2004), 'Learning from Exporting Revisited in a Less Developed Setting,' Journal of Development Economics, Vol. 75(2), pages 397-416, December.

Coughlin, Peter. (1988), "Toward a New Industrialization Strategy in Kenya?" in Peter Coughlin and Gerrishon K. Ikiara, eds. Industrialization in Kenya: In Search of a Strategy Nairobi: Heinemann.

Covin J.G. and Slevin, D.P. (1991), A Conceptual Model of Entrepreneurship as Firm Behaviour. Entrepreneurship Theory and Practice 16(1):7-25.

De Toni, A., Guido Nassimbeni, G. (2001), "The export Propensity of Small Firms: A Comparison Of Organizational And Operational Management Levers In Exporting And Non-Exporting Units." International Journal of Entrepreneurial Behaviour & Research, 7(4): 132 – 147.

Dyer, W. G. & Handler, W. (1994), "Entrepreneurship and Family Business: Exploring the Connections." Entrepreneurship Theory and Practice, 19, 1. Fall 1994.

Ease of Doing Business Indicators (2008), World Banks's East Africa Ease of Doing Business Indicators, www.doingbusiness.org, accessed on 12th June,2010 at 9:00 PM

Eifert, B, A. Gelb and V. Ramachandran (2005), Business Environment and Comparative Advantage in Africa: Evidence from the Investment Climate Data

Fastaad, H. (2002), Integrated Entrepreneurship Education in Botswana, Uganda and Kenya, World Bank Publication, Oslo

GEM Uganda (2003), Assessment of Uganda's Entrepreneurial Climate: Executive Report MUBS-Kampala

Gibb, A. A. (1993), "Key Factors in the Design of Policy Support for the Small and Medium Enterprise (SME) Development Process: An Overview". Entrepreneurship and Regional Development, Vol. 5, pp. 1-24.

Harding, R, (2008), "The Role of Entrepreneurship in Stimulating Sustainable Economic Development in Kenya and East Africa". Delta Economics, Inaugural Report to the World Entrepreneurial Summit, East Africa, May 26th and 27th 2008, Nairobi

Jesudason, J., (2000), Financial Crisis in Malaysia: Did FDI Flows Contribute to Vulnerability? Journal of International Development Volume 19 Issue 7, Pages 949 - 962

Legget, I, (2001), The Background, the Issues and the People. Oxfam Country Profile. Kampala: Fountain Publishers, 2001

McCormick, D., and R. Atieno, (1998), Linkages Between Small and Large Firms in Kenyan Food Processing and Tourism Industries. Paper Presented at the Workshop of European Association of Development Institutes. Institute of Social Studies, The Hague, 18-19 September

McVey, Ruth, ed. (1992), Southeast Asian Capitalists. Ithaca, NY: Southeast Asia Program, Studies on Southeast Asia.

MFPED (2003a), Uganda Poverty Status Report, 2003: Achievements and Pointers for the PEAP Revision, Kampala

MFPED (2003b), Medium-Term Competitive Strategy for the Private Sector (2000-2005), Making Institutions Support Private Sector Growth, Kampala

Myers Raymond, (1990), Classical and Modern Regression with Applications. Second Edition PWS-KENT Publishing Company Boston.

OECD Economic Surveys, France, 2005: www.oecd.org Accessed on 17th /10/2010 at 8:00 P.M.

PSD/MSEPU (1999), Urban Formal Sector In Uganda: Presented During the Labor Market Issues Course April/May 1999 at UMI GDLC (Uganda

Rick, Doner (1993), "Politics and the Growth of Local Capital in SEA: Auto Industries in the Philippines and Thailand," in Ruth McVey, ed. Southeast Asian Capitalists.

RPED, (2006), World Bank's RPED Manufacturing Survey in Association with Private Sector Foundation Uganda, 2005/2006

Salinger, B. Lynn. (2001), "Can African Clothing Companies Learn to Compete?" htt://just-style.com/features detail.asp? Art=304, Accessed on 12th November, 2010 at 4:00 P.M

Soderbom, M. & Teal, F., (2001), "Are African Manufacturing Firms Really Inefficient? Evidence from Firm-level Panel Data." Working Papers Series 2001-14. Oxford, UK: Centre for the Study of African Economies, University of Oxford.

UBOS (2002), Uganda Business Inquiry, www.bizstat@ubos.org, Accessed on 3rd July, 2010 at 11:00 A.M.

UBOS (2008), Statistical Abstract, September 2008, Kampala

UIA (2010), Investment Performance Report, www.ugandainvest.com. Accessed on 10th March, 2011 at 3.00 PM

UNCTAD (1999), Medium-Term Competitive Strategy for the Private Sector (2000-2005). Investment Policy Review of Uganda, UNCTAD Geneva, August 1999

Vega-Jurado, (2008), The Effect of External and Internal Factors on Firms' Product Innovation. Research Policy 37, 616-632.

Wagner, Joachim (1995), "Exports, Firm Size, and Firm Dynamics." Small Business Economics 7:29-39.

Zelterman Daniel, (1999), Models for Discrete Data. Oxford Science Publications

Appendices

Appendix I:

Table 1: Summary Statistics for Continuous Variables

Variable	Mean	Std. Dev	Min	Max	Mode
Years of firm in existence	20.174	13.972	8	100	13
Largest shareholder (%)	74.024	29.240	0	100	100
Years in experience of owner	6.455	8.451	0	45	0
No. of employees per firm	143.255	562.477	1	6500	10
Workers using computers (%)	6.297	14.387	0	100	0

Table 2: Summary Statistics for Non-continuous Variables

Variable	Freq	%
Legal status of firm		
1. Public listed company	5	1.45
2. Public held limited company	6	1.74
3. Private held, limited company	205	59.42
4. Partnership	26	7.54
5. Sole proprietorship	81	23.48
6. Cooperative	10	2.90
7. Other	12	3.48
Firm part of industrial group		
1. Yes	93	26.96
2. No	252	73.04
Firm acquisition		
1. Established	272	78.84
2. Bought	58	16.81
3. Inherited	10	2.90
4. Other	5	1.45

Table 2: Continued

Sex of firm owner		
1. Male	295	85.51
2. Female	50	14.49
Nationality of firm owner		
1. Kenyan	32	9.28
2. Ugandan	217	62.90
3. Tanzanian	18	5.22
4. Other African	25	7.25
5. Other non-African	53	15.36
Region of Ugandan firm owner		
1. East	49	14.20
2. North	32	9.28
3. West	63	18.26
4. Central	158	45.80
5. South West	37	10.72
6. Other Ugandan	5	1.45
7. Other	1	0.29
Education level completed		
1. None	14	4.06
2. Primary school	33	9.57
3. Secondary school	65	18.84
4. Vocational training	97	28.12
5. University first degree	88	25.51
6. University post-graduate degree	46	13.33
7. Other university program	2	0.58
Firms with financial accounts		
1. Yes	253	73.33
2. No	92	26.67
Have bank loan		
1. Yes	67	19.42
2. No	278	80.58
Have pre-employment health check		
1. Yes	67	19.42
2. No	278	80.58
Did offer for mal training		
1. Yes	100	28.99
2. No	245	71.01

Table 2: Continued

Invested in technology		
1. Yes	156	45.22
2. No	189	54.78
Located in industrial estate		
1. Yes	132	38.26
2. No	213	61.74
Have internet access		
1. Yes	99	28.70
2. No	246	71.30
Products directly exported		
1. Yes	63	18.26
2. No	282	81.74
Raw materials directly imported		
1. Yes	88	25.51
2. No	257	74.49
Tax rates		
0. No Obstacle	44	12.75
1. Minor Obstacle	65	18.84
2. Moderate Obstacle	81	23.48
3. Major Obstacle	93	26.96
4. Very Severe Obstacle	62	17.97
Government delivery of services		
1. Very inefficient	36	10.43
2. Inefficient	58	16.81
3. Somewhat inefficient	61	17.68
4. Somewhat efficient	151	43.77
5. Efficient	35	10.14
6. Very efficient	4	1.16
Member of a business association		
1. Professional Association	157	45.51
2. Other General Association	132	38.26
3. Both	56	16.23

Appendix II:

Table 3: Multivariate Output of Number Employed as a Function of Independent Variables

Variable	Coefficient	Significance (5%)
Years of firm in existence	0.013	0.001
Legal status of firm		
1. Public listed company**		
2. Public held limited company	-0.315	0.589
3. Private held, limited company	0.190	0.655
4. Partnership	-0.052	0.910
5. Sole proprietorship	-0.632	0.156
6. Cooperative	0.781	0.133
7. Other	-0.567	0.267
Firm part of industrial group		
1. Yes**		
2. No	-0.266	0.040
Firm acquisition		
1. Established**		
2. Bought	0.686	0.000
3. Inherited	0.878	0.030
4. Other	1.927	0.000
Largest shareholder	-7.180	0.997
Sex of owner		
1. Male**		
2. Female	0.010	0.965
Nationality of firm owner		
1. Kenyan**		
2. Ugandan	-0.153	0.469
3. Tanzanian	0.450	0.123
4. Other African	0.141	0.595
5. Other non-African	-0.020	0.932
Region of Ugandan firm owner		
1. East		
2. North	-0.321	0.151
3. West	0.026	0.894
4. Central	-0.179	0.276
5. South West	-0.542	0.009
6. Other Ugandan	-0.469	0.296
7. Other	0.216	0.807

Table 3: Continued

Education level completed		
1. None**		
2. Primary school	0.604	0.039
3. Secondary school	0.383	0.154
4. Vocational training	0.335	0.214
5. University first degree	0.663	0.016
6. University post-graduate degree	0.898	0.004
7. Other university program	-0.849	0.217
Years in experience of Firm owner	0.015	0.032
Keeping financial accounts		
1. Yes**		
2. No	-0.339	0.017
Have bank loan		
1. Yes **		
2. No	-0.513	0.000
Have pre-employment health check		
1. Yes**		
2. No	-0.120	0.369
Did offer formal training		
1. Yes**		
2. No	0.086	0.493
Invested in technology		
1. Yes**		
2. No	-0.234	0.041
Workers using computers (%)	-0.004	0.499
Located in industrial estate		
1. Yes**		
2. No	-0.009	0.954
Have internet access		
1. Yes**		
2. No	-0.090	0.620
Products directly exported		
1. Yes**		
2. No	-0.956	0.000
Raw materials directly imported		
1. Yes**		
2. No	-0.104	0.471

Table 3: Continued

Tax rates		
0. No Obstacle**		
1. Minor Obstacle	0.489	0.098
2. Moderate Obstacle	0.332	0.242
3. Major Obstacle	-0.151	0.586
4. Very Severe Obstacle	0.101	0.735
Government delivery of services		
1. Very inefficient**		
2. Inefficient	-0.161	0.427
3. Somewhat inefficient	0.292	0.166
4. Somewhat efficient	0.253	0.160
5. Efficient	-0.141	0.539
6. Very efficient	0.548	0.402
Member of a business association		
1. Professional Association**		
2. Other General Association	-0.083	0.483
3. Both	-0.229	0.128
	4.642	0.000

**= Base category