ANALYSIS OF RELATIONSHIP BETWEEN SME’S EMPLOYMENT GROWTH AND FIRM SPECIFIC CHARACTERISTICS

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Abstract
This study examined the relationship between of firm specific characteristics and employment growth of SMEs. The objective of the study was to investigate specific characteristics of a firm that influences its employment growth with particular reference to the SME sub sector. Questionnaire administration technique via a structured questionnaire was used to source for data and information from 200 SMEs owners that have been registered with National Association of Small and Medium Enterprises (NASMEs) in Kwara Central Senatorial district comprising Ilorin West, Ilorin East, Ilorin South and Asa Local Government Areas and had been active since the past five years (2010–2014). Multiple regression analysis was used to analyse the data with the aid of Stata 11 computer statistical package. The study revealed that the number of firms in a geographic cluster, access to formal finance, firm technology innovation which constitute firms specific characteristics were all significant at 1%. The study concludes that employment growth of SMEs is affected by a web of factors namely age of firm, number of firms in a geographic cluster, access to formal finance, firm technology innovation. It recommends that in order to close this gap and counter SMEs finance malaise; SME development fund should be created and made available through development institutions, commercial banks and micro finance banks. Also, entrepreneurs should adapt new technology system in their business operations

Keyword: Entrepreneurship, SMEs, Employment Growth, Firm Characteristics.

1.0 INTRODUCTION
The effective and efficient production of goods and services has continued to be one of the most viable and reliable options for development, growth and survival of any economy and small and medium scale enterprise have been recognized as a driver, engine and panacea of economic growth and development and in fact a major factor by extension in promoting the realization of placing Nigeria as one of the top 20 economies by the year Small and Medium Enterprises (SMEs) occupy a place of pride in virtually every country or state. Because of the significant role SMEs play in the growth and development of various economies, SMEs have aptly been referred to as “the engine of growth and development” and “catalysts for socio-economic transformation of any country” (Ajose 2010).
It provides the industrial leaders of the future, improves the competitive edge of the economy by maximizing the range of choice available through market provision and challenges the dominance of existing large industrial units thereby forcing them to innovate. It would not be an exaggeration therefore to mention that the overall health of the economy depends on a large extent on the health of SME sector in a country (Arinaitove, 2006; Odubanjo, 2000; Onwumere, 2000; and Nnanna, 2001) all support that SMEs help in the achievement of improvement in rural infrastructure, improved living standard of the rural dwellers thereby creating employment, utilization of indigenous technology, production of intermediate technology and increase the revenue base of the private individuals and government (Wahab and Ijaiya, 2006). China has tenaciously understudied these facts and aggressively capitalizes on it. The SMEs with fewer than 300 workers account for 99.5% of the factories in Tokyo and employs 74 percent of work force there. Korea and Taiwan prospered as both countries manufacture and export with the aid of its SMEs. In the United State of America, the SMEs account for 87 percent of the countries workforce.

Following the aforementioned benefits and recognizing the importance of SMEs in economic development and in order to realize the benefits of promoting small and medium scale enterprises, the Federal Government made several attempts via the introduction of various policies at developing SMEs in Nigeria. It has employed monetary, fiscal and industrial policy measures to achieve its desired goals. Sagasi (2006) noted that despite the huge amount spent in the development of these policies for SMEs growth, not much changes and improvements have been recorded. They have not been able to perform their roles as catalyst for employment generation, national growth and development, poverty reduction and economic development. Onugu (2005) in his studies discovered that most SMES die within their first five years of existence. Another smaller percentage goes into extinction between the sixth and tenth year thus only about five to ten percent of young companies survive, thrive and grow to maturity. Furthermore, the US Small Business Administration in a study to determine the business survival rate and redefining small business success posits that statistically, roughly 66% of new business survive two years or more, 50% survive four years or more and 40% survive six years or more. The growth, performance and productivity of Nigeria’s manufacturing firms have deteriorated at present and even beyond the rate at which they grow in the past three decades when manufacturing still play significant roles in the Nigerian economy there is high rate of failures among SMEs. In 2009, the Manufacturers Association of Nigeria (MAN) declared that almost 80 percent of SMEs have closed down in the past nine years (between 2000 and 2008) of civilian rule and rendered thousands of people jobless, the high exist rate was blamed on tough operating environment, unstable electricity, high interest rate and exchange rate, smuggling, high cost of diesel and petroleum to power firms generators, high taxation and levies. This implies that there are not growth propelling resources at the disposal of SMEs in Nigeria over the years and this tends to deteriorate their growth mechanisms (African Vanguard, 2009).

In view of the foregoing, for SMEs to actualize its potentials, boost employment generation and poverty alleviation, bridge the gap existing between SMEs in Nigeria and other countries, and play a lead role in ensuring that Nigeria’s position as one of the twenty (20) most industrialized countries in the world by 2020 is actualized, then there is an urgent need for researching into factors which may be determining SMEs growth in Nigeria. This rests in the belief that if factors which influence their growth are identified, then certain beneficial characteristics which contribute to growth process can also be identified; and policy measures could be employed to ensure that SMEs possess these characteristics. It is the contention of this study to examine the effect of firm specific
characteristics on employment growth of SMEs in the study area by providing adequate information on beneficial characteristics which contribute to growth process so that policy measures could be employed to ensure that SMEs possess these characteristics.

2.0 LITERATURE REVIEW

Theoretical Review: Gibrat’s Law of firm’s growth

Several studies have undertaken the task of assessing the relationship between firm growth and firm size. Early studies in the manufacturing industry found a relationship between growth and size. This fact stimulated the idea that the relationship between growth and size is a stochastic phenomenon. This concept is known as Gibrat’s law (Gibrat, 1931). The debate on Gibrat’s Law of Proportionate Effect has been going on for some time. A commonly accepted interpretation of the Law originally “discovered” by Gibrat (1931) is that the growth rate of a given firm is independent of its size at the beginning of the period examined. In other words, “the probability of a given proportionate change in size during a specified period is the same for all firms in a given industry – regardless of their size at the beginning of the period” (Mansfield 1962).

From a purely theoretical perspective, Gibrat’s Law proved consistent (or at least not in contrast) with some by now classic economic models of the firm size distribution. For example, Robert Lucas put forward an important updating of Jacob Viner’s original theory addressed to explain the size distribution of business firms. While Viner (1932) had seen business size distribution as the outcome of cost-minimizing firms (characterized by U-shaped long-run average cost functions and facing a given market demand), Lucas (1978) postulated size distribution as a solution to the problem of allocating productive factors over managers of different “talent,” so as to maximize aggregate output. His model predicted the “full” size distribution of firms, conditioning it to a given distribution of the managerial talents; in fact, in his view, firms were collections of assets whose matching to managers can change arbitrarily from period to period.

Empirical Review

Identifying the determinants of SME’s growth necessitates sourcing for a wide range of possible contributions in an empirical model (James et al. 2006). Thus, some of the most important studies that investigated SME’s growth and contributed to a large extent to literature of SMEs sub-sector are being reviewed. Hema and Harry (1996) examined firm and industry – specific variables contributing to the growth of SMEs in Australia. Their variables of interest include growth represented by annual sales growth which represented dependent variable. The independent variables used in the model included age of firm, size of firm (number of employees), market competition and export orientation. The model used multiple regression. The result indicated that age and size were significant. However, only firm characteristics were used and the model excluded owner/managers and environmental factors. Data on sales may not be accurate as firms do not keep records because most operate in the informal sector. Thus, data on sales may be influenced by owner’s perception.

Francisco and Roberto (2007) carried out analysis of determinants of firm’s growth in Tucumán, Argentina. The dependent variable employed is growth measured by firm’s sales. The independent variables includes initial size, returns on sales, financial resources, intermediate financial resources, diversification by products, sales in regional, national and international markets. Multiple regressions were applied. The result indicated that initial size is not significant which concludes Gibrat’s law. Returns on sales and diversification are significant. However, initial size is quite fundamental to growth of firms. At the inception, there is the need for firms to have adequate asset base, manpower and working capital. Only firms that have these capacities will be able to initiate and execute growth in terms or mergers, acquisitions, franchise or even diversification.
Mohammed (2012) carried out an impact of socio-economic factors on small business success using average profit per month as dependent variable. The independent variables in the model included education, experience, business profile, socio-cultural and investment. Multiple regressions were employed for analysis. The result of the regression indicated that investment, and experience is significant at 10% and 5% respectively. However, profit may not be the determinant of growth. In neoclassical theory, growth may either be revenue maximization or sales maximization. Baumol (1967) stipulates that managers are hired for sales or revenue maximization than for profit maximization. The optimal firm size stipulates other consideration such as structure of market, entrepreneur inclination other than profit. There is no more economic profit in the long run equilibrium of firms in a competitive market of which most SMEs belong.


**Conceptual Clarifications**

a. **Firms Specific Characteristics**

Emphasizing the role of firm characteristics has become an increasingly important consideration in examining performance of firms. Geroski (1998) observe that size seems to be an important characteristic associated with systematic differences in firm performance. Based on this observation, he further argues that understanding and identifying the source of firm heterogeneities is a key to making some progress in explaining heterogeneity in their performance. Thus, the differences observed in firms’ performance can be explained by some specific factors attached to the firms (Rumelt, 1984; Barney, 1992).

b. **Limited Resources**

SMEs generally have limited resources. They lack sufficient finance to grow and respond to competitors and diversify business. Thus, SMEs are vulnerable to competition from counterparts who introduce new products or services or improve their production process because of lack of resources to respond rapidly. SMEs are characterized by small capital base hence tend to use the informal financial institutions. Often, they find it difficult to raise funds from these institutions because they are often viewed as relatively risky and absence of track record on the firm to entice the potential investors, bankers, commercial networks and institution networks. Hence they are highly dependent on the capability of the owners to generate resources. Consequently, their capital structure is such that they depend heavily on equity capital which is cheaper compare to loans and this becomes one of the obstacles to expand business. Firm resources are relevant in the earlier stages of firm growth in order to overcome the so-called liability of newness (smallness). In addition from a resource-based view, firm competitive advantages and developed on their resource platform.

c. **Skill intensity**

The skill intensity of employees may add to the resource and skill base of an enterprise. Firms that employ workers with tertiary and vocational status will experience more growth as the expertise of these workers will increase productivity. They will bring their expertise broader range of management and quality decision to bear which will promote the growth of the firm.

d. **Firm Technology innovation**
Firm technology innovation allows firms to produce goods at a lower cost than firms that use older technology. Improved technology allows firms to produce with a more efficient bundle of resources that reduces cost and/or allows the creation of improved products reach new markets and expand such firm will be more likely to be in a position to surpass competition and get more opportunities to grow. It would also allow firms to build networks both commercial and institutional. More specific or closely related contacts may provide more valuable resources or information in terms of markets, suppliers, competitors, etc.

e. Firm Age

The importance of firm age is mostly related to the experience and knowledge that a firm is able to accumulate. Theoretical explanations can be derived from Chaston (2010) which postulates that, over time, firms learn and improve their efficiency. The experience and knowledge essentially come from many sources, but mostly from networks of firms. These networks are particularly important because they facilitate peer-based learning and allow SMEs to reconfigure relations with suppliers. Firm age is also important because credit rationing can be expected to more adversely affect smaller firms.

f. Geographic Cluster

Concentration of firms in a particular place affects growth. Cost-saving benefits could be generated from such clustering. These benefits include not only the traditional economic factors such as wage-level and resource availability but also the existence and quality of infrastructure and infrastructure services. SMEs cluster provides firms to engage in collaborative efforts that would reduce cost and avail them of economies of scale. For instance, those in contiguous location or engaged in similar lines of business and are therefore faced with the same opportunities and threats could set up joint facilities for sharing, pool research and development resources for technological improvements and also undertake joint sales promotions to reduce marketing cost. Concentration of industry activity in a region affects growth because it introduces local competition which requires firms to innovate in order to remain competitive. Hence, it is expected that firms located in a geographic region within industry clustering would exhibit higher rates of growth, they have access to both customers and prospective partners, have access to knowledge spillovers (i.e. direct and indirect transfer of knowledge from one party to another in terms of best practice in technology and innovative activities that their counterpart are deploying).

3.0 METHODOLOGY

The study was conducted in Kwara State, Nigeria. This area is situated in the North Central geopolitical zone of Nigeria. It is located between latitude 11°2' and 11°45"N and between longitude 2°45’ and 6°4E, and lies midway between the northern and southern parts of the country. It is made up of three senatorial districts (i.e. Kwara North, South and Central and has 16 Local Government Structure). The research was carried out in the Kwara Central Senatorial District. The participants in the dominant activities in the SMEs in the study area are found in the manufacturing sub-sector of the real sector, and service related sub-sector because they form the main occupation of the people in Kwara central senatorial district. The research purposely targeted Kwara Central Senatorial district because it harbours the highest agglomeration of SMEs in the State. These include the manufacturing sector which consists of Agro-allied including primary agricultural processing of raw agricultural produce, Leather and leather products, Soap making, Textile products, Wood and wood products, Metal works, Printing and publishing as well as the Service sub-sector which consists of Fashion designers, Information and Communication Technology, Automobiles. Thus, the respondents covered participants in the real and services sub-sectors as detailed above.
Primary data through structured questionnaire was collected from 200 SMEs owners that have been registered with National Association of Small and Medium Enterprises (NASMEs) in Kwara Central Senatorial district comprising Ilorin West, Ilorin East, Ilorin South and Asa Local Government Areas and had been active since the past five years (2010–2014). It consists of information on the determinants of growth of SMEs in terms of entrepreneurs responses on growth determinants and firm specific characteristics. Though growth can be measured by a number of variables, we have limited our measurement to the study of employment growth as dependent variable which is more reliable, less volatile and captures human resources on growth and indicate the contribution of the firm to poverty alleviation initiative. Data was analyzed using descriptive and inferential statistics. Descriptive statistics involved the use of mean, standard deviation, minimum and maximum values. Inferential statistics was used to measure the relationship between variables. Dependent Variable – SME employment growth
b. Independent variable. Firm’s specific characteristics

Model Specification
In order to assess the contribution of different determinants of SMEs growth, the following Multiple Linear Regression Statistical tool was employed:

\[ Y = f(X_1, X_2, X_3, X_4, X_5, X_6) \] …… (1)

Equation (1) in its explicit form is expressed as follows:

\[ Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + e_i \] ……… (2)

In a more compact form equation (2) is expressed as follows:

\[ Y = \sum_i \beta_i X_i + e_i \] ………… (3)

Our primary objective is to estimate the following population regression function.

\[ E(Y) = E(\beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + E(e_i)) \] …… (4)

The foregoing population regression is not observable. Thus, the estimation was based on sample regression function since our analysis was based on single sample from the population. Thus, we have:

\[ Y_i = \beta_{0i} + \beta_{1i} X_{1i} + \beta_{2i} X_{2i} + \beta_{3i} X_{3i} + \beta_{4i} X_{4i} + \beta_{5i} X_{5i} + \beta_{6i} X_{6i} + u_i \] …….. (5)

\[ Y = \text{Firm employment growth} \]

\[ X_1 = \text{Firm age} \]

\[ X_2 = \text{Initial size} \]

\[ X_3 = \text{Number of firms in a geographic cluster} \]

\[ X_4 = \text{Access to formal finance (Bank Loans)} \]

\[ X_5 = \text{Skill intensity} \]

\[ X_6 = \text{Firm technology innovation} \]

\[ \beta_0 = \text{Constant} \]

\[ \beta_1 = \text{Regression coefficients} \]

\[ X_i = \text{Explanatory variables} \]

\[ e_i = \text{Error term which is assumed to be normally distributed with zero mean and constant variance} \]
4.0 RESULTS AND FINDINGS

Table 1: Descriptive Statistics of Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Observation</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Firm Employment</td>
<td>200</td>
<td>179.985</td>
<td>5.203827</td>
<td>168.1604</td>
<td>195.3986</td>
</tr>
<tr>
<td>Firm Age</td>
<td>200</td>
<td>1.250843</td>
<td>.2288144</td>
<td>.7567614</td>
<td>1.858891</td>
</tr>
<tr>
<td>Initial Size</td>
<td>200</td>
<td>2.243863</td>
<td>.2188687</td>
<td>1.68131</td>
<td>2.830062</td>
</tr>
<tr>
<td>Geographical Cluster</td>
<td>200</td>
<td>4.021931</td>
<td>.2831085</td>
<td>3.182851</td>
<td>4.764747</td>
</tr>
<tr>
<td>Access to Finance</td>
<td>200</td>
<td>3.996675</td>
<td>.2830431</td>
<td>3.234382</td>
<td>4.673748</td>
</tr>
<tr>
<td>Skill Intensity</td>
<td>200</td>
<td>2.976591</td>
<td>.2793884</td>
<td>2.205793</td>
<td>3.622781</td>
</tr>
<tr>
<td>Firm Technology</td>
<td>200</td>
<td>3.485499</td>
<td>.2793884</td>
<td>2.757686</td>
<td>4.191119</td>
</tr>
</tbody>
</table>

Source: Author’s Computation by Stata II

The foregoing the depicts the summary descriptive statistics of variables

4.2 Result of Multiple Regression Analysis

<table>
<thead>
<tr>
<th>Firm Employment</th>
<th>Coef.</th>
<th>Std. Err.</th>
<th>T</th>
<th>P &gt;</th>
<th>t/</th>
<th>[95%</th>
<th>Conf.</th>
<th>Interval]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Firm Age</td>
<td>8.281429</td>
<td>.3196064</td>
<td>25.91</td>
<td>0.000</td>
<td>7.650931</td>
<td>8.911926</td>
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<td></td>
</tr>
<tr>
<td>Initial Size</td>
<td>-.5719319</td>
<td>.3352103</td>
<td>-1.71</td>
<td>0.090</td>
<td>-1.233212</td>
<td>.0893478</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Geographical Cluster</td>
<td>1.84924</td>
<td>.2566661</td>
<td>7.20</td>
<td>0.000</td>
<td>1.342907</td>
<td>2.355573</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Access to Finance</td>
<td>1.494283</td>
<td>.2688852</td>
<td>5.56</td>
<td>0.000</td>
<td>.9638452</td>
<td>2.024722</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Skill Intensity</td>
<td>-.0290524</td>
<td>.2529151</td>
<td>-0.11</td>
<td>0.909</td>
<td>-.5279858</td>
<td>.4698811</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Firm Technology</td>
<td>6.684179</td>
<td>.2639847</td>
<td>25.32</td>
<td>0.000</td>
<td>6.1634009</td>
<td>7.20495</td>
<td></td>
<td></td>
</tr>
<tr>
<td>_cons</td>
<td>13.01901</td>
<td>3.385201</td>
<td>3.85</td>
<td>0.000</td>
<td>6.340915</td>
<td>19.6971</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Author’s Computation using STATA II

Discussion of Findings

Age of firm is significant at 1%. Age is mostly related to experience and knowledge that a firm is able to accumulate as firm learns and improves their expertise and efficiency overtime. Time is also required to establish network with suppliers and formal financial institutions. Older firms may be better placed to achieve stronger growth because of their greater expertise and experience. Initial size is not significant and thus Gibrat’s law is applicable to the study area. Thus, the effect of size is not significant in this model. That is growth at any given period of time is independent of initial size.
of the firm. According to the results of this research there are other factors more important than size of the firm to determine the opportunities for growth that firms face and the chances of successfully fulfilling those opportunities.

Geographical cluster is significant at 1% cluster allows firms to pool products and services to meet customers demand thus guaranteeing a steady or ready markets for their products. This is also knowledge spillover among firms and firms can benefit from bootstrapping by way of borrowing equipment from each other. Access to formal finance is significant at 1%. The ability of a firm to access resources has been found to influence its growth performance. The resource based view of the firm subscribes that it is the firm’s capabilities to accessing and harassing resources that enables it to achieve a sustained high performance (Barkey; 1991, Penrose; 1959). Hence, the competitive advantage of a firm and ultimately it performance, is the result of the portfolio of resources it harnesses. However, credit rationing crowded out SMEs from opportunities to access formal finance. Most of the SME belong to the informal sector and do not have sufficient information required by most potential lenders (formal) on managerial capabilities hence SME are likely to be screened out. Therefore majority of loans granted are issued to large corporate and governments and SMEs mostly resort to informal financing. Firms endowed with a richer platform would experience a superior growth performance.

Number of skillful workers is not significant. Firm technology innovation is significant at 1%. Firm that uses the latest technology tends to captures its customers more than its competitors by application of new technology. Technology innovation also allow firms to produce goods at a lower cost than firms that use older technology, and produce more efficiently, come to the market with better products and get more opportunities to grow. Thus, the lower the number of years since the last investment in technology, then the newer the technology the firm is using to produce and therefore, the larger the expected impact on growth.

**Research Hypotheses Testing**

**H0:** There is no significant relationship between employment growth of SMEs and firms specific characteristics.

Number of firms in a geographic cluster, Access to formal finance, Firm technology innovation constitute firms specific characteristics and are all significant at 1%. Null hypothesis is rejected and alternative hypothesis of accepted. Thus there is therefore a significant relationship between employment growth of SMEs and firms specific characteristics.

**5.0 CONCLUSION AND RECOMMENDATION**

The research examines the determinants of employment growth of SMEs in the Kwara State. It is hereby concluded that in this research, employment growth of SMEs is affected by a web of factors namely Age of firm, Number of firms in a geographic cluster, Access to formal finance, Firm technology innovation. It is recommended that Entrepreneurs should adapt new technology system in their business operation. Provision of world class technology and research infrastructure outputs through government research institution, be disseminated to the SME to produce a critical mass of highly skilled manpower and stimulate intellectual property and entrepreneurial culture of SMEs. Government is to provide low interest rate for new technologies acquisition and provide tax incentive for SME procuring new technologies.

Geographic cluster serviced with necessary infrastructure be provided in each local governments to ensure that SMEs engage in collaborative effort that would reduce cost and avail them of economies of scale. They will be in addition be able to utilize the opportunities and fend up threats. In order to close this gap and counter SMEs finance malaise, it is recommended that a SME
Development Fund be created and made available through development institutions, commercial banks and micro finance banks with a single digit interest rate and period of repayment of 7 years.

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