



Approach to Assess and Select Small and Medium Enterprises (SMEs) for Incubation on the Base of Angel Model – a Case on Developing Economies and ENGINE Program

Joseph Asare^{1*}

¹*Department of Management and Administration, University of Economics and Law 'KROK', Ukraine.*

Author's contribution

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ABSTRACT

One key strategy to achieve economic development is to grow the Small and Medium Enterprises (SMEs) sector of the economy. Small and Medium Enterprises (SMEs) scalability (growth or expansion) have become an area of concern for economic growth in developing economies. In view of this many researchers have attempted to come up with some of the indicators that can be used to determine SMEs success. This research literatures reviewed on small and medium enterprises (SMEs) revealed that all SMEs go through different stages of growth, commonly termed as life cycles. Also, a careful study of business theories and common approaches used by institutions to select SMEs for incubation has well established that many factors contribute to SMEs success. The critical question is, "do Business Plan and or other business documents contain all the factors that determine SMEs success?" This study through the use of the Project Angel Model and the Chaos Theory [1,2] has conducted a careful study into what determines SMEs success and found that no single business document can be used as a perfect gauge of SMEs success. Further, this study has developed SMEs Success Prediction Model and SMEs Business – Project Success Rater to

*Corresponding author: E-mail: asaredada@gmail.com;

help gauge SME success. This study also summarizes the many determinants of enterprise growth and classifies them into ten (10) dimensions. The study also proves that individual competencies such as SME owners' innovativeness, technical knowledge, growth motivation and many more contributes to SMEs success, and enterprise's scalability (its preparedness to grow) is found to have a positive impact on a firm's success but not a business plan.

Keywords: Small and medium enterprises; nongovernmental organization; project funding; incubation; business plan; enterprise success determinants; innovativeness.

1. INTRODUCTION

Small and medium enterprises (SMEs) are an important job originator [3]. Hence, a study into the determinants of SMEs success is important from government policy and NGOs intervention programs perspective. It's very common over the last two decades that, these determinants have been studied in various disciplines such as economics, project management, strategy, finance, network theory and innovation. On the other hand, it is observed that knowledge of firm growth is still limited [4]. Further studies have shown that growth is an organizational outcome resulting from the combination of firm-specific resources, capabilities and routines [5]. It must be noted also that an enterprise growth opportunities are highly related to its current organizational production activities and that path-dependency is an important theme of firm growth [6]. Additionally, a firm growth is also uncertain, therefore environmental conditions such as competition and market dynamics play their roles, and a small firm growth is also influenced by personal desire of an entrepreneur such as innovativeness and technical knowledge.

Enterprises growth is an important gauge of a booming economy. Realization of this has motivated national governments, state agencies and nongovernmental organizations to introduce several interventions to help promote the SMEs sector of the economy. One major intervention aimed at promoting the SME sector of most developing economies is 'SMEs Incubation Programs' run by most nongovernmental organizations (NGOs) operating in developing economies. Evidence has shown that most NGOs operating in developing economies believes SMEs are the ENGINE for growth of every economy. This conviction has seen most international NGOs operating in developing economies providing various forms of support (like projects funding, business management and business plan writing training, mentoring, product development, marketing, cash management etc.) under their SMEs incubation programs.

Most international donors (such as governments, state agencies, private organizations and individuals) who provide funding to NGOs that support SMEs in developing economies believes that 'SMEs incubation programs' are that best way they can contribute to grow the sector. Further, most donor agencies that fund NGO projects have approved SMEs incubation strategy and in most cases they have made it a policy requirement to be adopted by all NGO's they fund. Most NGOs that initiate development projects through SMEs support in developing economies, select SMEs for incubation through many processes such as 'SMEs Business Plan Competition'. Successful SMEs who get selected for incubation are those who are able to present a well and convincing business plan to the 'Selecting Committee' set up by the NGO. This process of selecting SMEs for incubation could be prone to many flaws, biases and in most cases could leave the most promising SMEs out of the competition.

The factors influencing the success of SME's cannot be gauged based on a well presented business plan. The reasons for these are in three-fold. First, the project model clearly shows that certain factors influences a project success, while the chaos theory make it known that social, ecological, and economic systems also tend to be characterized by nonlinear relationships and complex interactions that evolve dynamically over time. Secondly, growth of every firm is gradual and a vital source of job creation. Thirdly, firm growth is influenced by a number of factors which has attracted much research interest. It is very paramount to note that none of the researches reviewed did suggest that a well presented business plan is an indication of a firms' success.

2. STATEMENT OF THE PROBLEM

A Firm's success (growth and scalability) can be measured by several indicators such as innovation, level of technology, economic factors, management team, environmental factors, age

and firm size, government policies, business strategies, resources, competitive advantage, personality traits. A global market rapid growth has been observed over the last decade, this rapid growth has stimulated competition in both developed and developing countries, forcing nongovernmental organizations and policy makers to adopt growth-oriented policies to help promote the SME sector. The rapid changes in the global market have caused much instability to the various indicators which determine a firm's success. The fact that the number of SMEs has increased in most countries suggests that efficient SMEs have actually been able to set up new strategies that enable them to grow, and face competition in the current knowledge economy. Formerly defined, a knowledge economy is characterized with the generation and adoption of new knowledge created by scientific research, technological development, investments in intangible assets, adoption of best practices, and openness to socio-economic, and cultural innovations [7]. Currently, some SMEs operating in developing economies are successful, while others are not. One major factor that could be attributed to this success is the innovative behavior of the entrepreneur; which the study found as not having any connection with their skills in developing successful business plan.

Also, the significant contributions of SMEs to economic growth have motivated a considerable number of international NGOs operating in developing economies to devise several non-scientific means to select SMEs for incubation. This mode of selecting SMEs for incubation lacks uniformity and credibility because they are not based on any scientifically proven theory or model. Further, there are many factors that allow an enterprise to move from one stage to another. History has revealed that factors affecting SMEs differs in terms of characteristics, agencies (such as market, government, etc) and geography, all these factors also influences SMEs growth. It must be noted also that the determinants of SMEs growth have been studied in various disciplines, but integrated analysis on these determinants have not been presented in a comprehensive model. These knowledge gaps have created a lot of challenges to NGOs in determining which SMEs would be success to be selected for incubation. Even though past researches indicated that many factors determine firms chances of growth, those factors have not been put into a comprehensive model to serve as a measure of SMEs success.

3. ACTUALITY OF THE STUDY

Small and Medium Enterprise development is one key issues in the cooperation between developing countries and international NGOs. It must be noted that, every leading business organization has had the experience of starting their business as an SME. The development of the SME sector is dependent on supports from government, academic scholars, international NGOs and other stakeholders' participation. The contributions of SMEs to economic growth cannot be overlooked, OECD estimates that SMEs account for 90% of firms and employ 63% of the workforce in the world, Munro (2013). This contribution of SMEs to national economy has prompted many governments to focus their development programs at promoting the SMEs sector through partnership with international NGOs to rollout many interventions.

Furthermore, economic growth has long been the goal of all governments and most international NGOs, only recently have scholar devoted much of their works to reveal the key role play by SMEs, and to what constitute SMEs success. *If economists and scholars claim that small and medium enterprises are the backbone of the economy, how come they don't have a universal definition of SME, and a well-accepted model that allows for gauging the success of SMEs?* It is unfortunate to mention that most government and international NGOs who are passionate about SMEs growth do not have a uniform means of assessing SMEs success. This lack has compelled most international NGOs to adopt certain none scientific-base methods such as *business plan competition* to select SMEs for incubation. This study can state that none of the literatures reviewed did mention that a business plan can be used to determine SMEs success. Benson H. & Mikael S. [8] in their study strongly opposed the use of business plan to predict a firm's performance. They concluded that 'business plans are not a reliable predictor for venture level performance'. They further indicated that those that do plan appear to be loosely coupled, in that their planning activities fail to coordinate with their operational outcomes. They also stated that even changing (constant update) of business plans had little or no effect on firm's performance [8]. Also, Honig [9] stated clearly that planning gives a false illusion of control and yields potentially harmful predictions due to the inability to gather and analyze information about the future. Honig further indicated that business planning interferes with

the efforts of time-constrained Entrepreneurs to undertake more efficient activities in the nascent process [9]. Furthermore, Bhide [10] argues that there are often more efficient uses of entrepreneurs' time than writing a business plan. Bhide went a step further and gave an example that particularly in new markets for novel products/services it is not possible to gauge customer demand, unless one actually tries to sell to them. Bhide also indicated that business plans are a poor means of reducing uncertainty [10]. Further, Honig and Karlsson [11] also indicated that this widespread writing of business plans by entrepreneurs has more to do with coercive and mimetic forces to legitimize their business venture; that the expectation amongst outside agents is that new ventures ought to have a business plan because of an isomorphic imperative to mimic other organizations [11]. The points above clearly prove that most information contained in business plans may not be realistic. These therefore, suggest that business plan competition cannot be used as a reliable tool for selecting SMEs for incubation. Additionally, not much study has been conducted on the project angel model and the chaos theory to prove how well the two help to determine SMEs success. These knowledge gaps calls for a research to be conducted on 'approach to assess and select small and medium enterprises (SMEs) for incubation on the base of angel model'

This research summarizes all the determinants of SMEs success to provide a clear picture of what determines SMEs success. Also, the study through the Project Angel model and the Chaos theory has developed 'SMEs Success Prediction model'. This is a scientific model that would help national governments and NGOs gauge at a glance which SMEs will be success when supported. Further, the study through the developed model has proved that business plan competition is not a perfect gauge to determine SMEs success or selection for incubation. Additionally, this study contributes to help close the knowledge gap on what determines SMEs success, and its information are very useful for national governments and NGOs who want to promote SME growth.

4. DESK REVIEW

Related literatures reviewed revealed that predicting the success of a business depends on its stage. That is, start-up or existing business, and each of it requires a different approach.

However, the indicators and theories for analyzing SMEs success cannot be well understood without an understanding of what SMEs mean, since it is very crucial to this study. Despite the huge contributions of SMEs to economic growth such as job and market creation and income generation, there is no universally accepted definition of SMEs. The differences in SME definition extend in three flanks: Definitions by international institutions, definitions by national laws and by industry definitions. Finding a universal standard poses a sharp and acute critic to institutionalists, economists, academics and industrialists [12]. Studies have shown that small and medium enterprises in most cases are defined by adjectives indicating size, for instance economists tend to divide them into classes according to some quantitative measurable indicators. However, the most common decisive factor to distinguish between large and small businesses is the number of employees [13].

The Bolton Report, 1971 is one of the first attempts to provide a definition of SMEs [14]. The Bolton report suggests two approaches to define SMEs: quantitative approach and qualitative approach. Most International institutions, academics, statistical agencies and policymakers, mainly apply quantitative criteria in defining SMEs. The European Commission defines small enterprise as having 10 to 50 employees and medium enterprise as having 51 to 250 employees, with an annual €10 million and €50 million respectively [15]. However, the case is different in most developing economies. In Ghana for instance, the Registrar General's Department of Ghana define Small enterprises as those employing between 6 and 29 employees and with fixed assets of up to one hundred thousand dollars (\$100,000), whilst medium enterprises as those employing between 30 and 99 employees with fixed assets of up to one million dollars (\$1,000,000) [16].

Most SMEs operations entails activities which can be describe as development project. Despite the billions of dollars spent on economic development assistance each year by national governments and donor agencies, there is still very little known about the actual impacts of these interventions on the SME sector. The IPMA define a project as a unique, temporary, multidisciplinary and organized endeavor to realize agreed deliverables with predefined requirements and constraints [17]. This means that every support from the government or NGO

to SMEs should acknowledge certain predefined requirements and constraints. Many governments institutions, NGOs and SME managers are reluctant to carry out impact evaluations on the support they offer to SMEs because they are deemed to be expensive, time consuming, and technically complex, and because the findings can be politically sensitive, particularly if they are negative. Many evaluations have also been criticized because the results come too late, do not answer the right questions, or were not carried out with sufficient analytical rigor. A further constraint is often the limited availability and quality of data [18]. Yet with proper SMEs incubation selection process and early planning, the support of NGOs to SMEs would be very impactful and effective in promoting the SME sector for economic growth.

In an attempt to establish what determines SMEs success, this study discovered that SME development requires a crosscutting strategy that touches upon many areas (e.g. ability of governments to implement sound macroeconomic policies, capability of stakeholders to develop conducive microeconomic business environments, inter alia, through simplified legal and regulatory frameworks, good governance, abundant and accessible finance, suitable infrastructure, education, sufficiently healthy and flexibly skilled labour as well as capable public and private institutions, and the ability of SMEs to implement competitive operating practices and business strategies). Thus, SME development strategy must be integrated in the broader national development strategy and or poverty reduction and growth strategy of transition and developing countries [19]. The above shows that no single business plan or business document can be used to determine the success of SMEs.

The 'Noisy' Selection Theory: one key factor to consider when analyzing the success of a firm is its start-up and operating costs. Boyan Jovanovic (1982) indicated that costs are random, and different among firms. For each firm, the means of its costs may be thought of as the firm's true cost, Boyan further indicated that the distribution of true costs among a potential firm is known to all, but no firm knows what it's true cost is. If the firm has low true costs, it is likely that the evidence will be favorable, and the firm will survive, if the costs are high and the evidence adverse, the firm may not waste time to withdraw from the industry [20]. It is a well known fact that all international NGOs and other stakeholders

who support SMEs pay critical attention to the financial aspect of the SMEs business plan to make informed decisions. But if we are to go by the above theory, one can conclude that the financial aspect of a business plan is a 'false hope'. Other studies have revealed that there is no relationship between a firm's size and growth rate [21,22] On the contrary, another study found that the growth and survival of a firm seem to be proportional to their size because adjustment of costs with constant return to scale have proven that firms should grow in proportion to their size [23]. This study shows that the prediction of a firm's success is very delicate and goes beyond just the analysis of a business plan.

Johan W and Dean A. Shepherd (2009) also indicated that there is agreement in existing literature on how to measure firms growth, and that some of the common elements that scholars have used to measure firms' growth potential are growth of sales, employees, assets, profit, equity etc. and the time span, over which growth is analyzed, varies considerably and ranges from one to several years. They further suggested that the attitudes, industry, task environment, entrepreneur's resources, firm resources, network resources, firm age, subsidiary growth and entrepreneurial orientation play key role in firms' success and growth. Also, Aldrich and Auster [24]. suggested that the strategy of a small business with respect to entrepreneurial orientation affects its growth to a substantial degree, even when other factors are taken into account. Most often, there is this feeling that small firms are subjected to strong environmental pressures that determine their development and performance. But Carroll and Hannan [25] makes us believe that the future growth of the small firm is largely a function of previous growth due to inertia and path dependence. Once the firm has been launched in a particular environment, managers can do little to affect the future of the firm due to environmental pressures and internal inertia. Ecological research has also proved that findings of researchers have influence on purposeful action on firm outcomes, and can be largely attributed to methodological artifacts.

The model for SME sector development by Saburo K [26], maintain that finance, management reform, strengthening of management infrastructure, environment and micro enterprises are fundamental determinants of SMEs success. Saburo further indicated finance as fundamental to SMEs growth, and describe these factors as tools for SME

development [27]. In financing SMEs there is the need to examine the success of the SME and its business-project or activities. Gordon M, [1] stated that there is no singular definition of project finance, and that the financing of a project is said to be nonrecourse when lenders are repaid only from the cash flow generated by the project or, in the event of complete failure, from the value of the project's assets. He further indicated that government, project sponsors and owners, the project company (the SMEs business), contractor and operators (SMEs workers), suppliers, customers, financial institutions, the capital markets, equity investment funds, multilateral agencies and export credit agencies play a crucial role in determining projects success. This approach to analyze SMEs growth and projects success makes it clear that the success of SMEs is gradual, runs through time and involves many actors. However, these models failed to pay detailed attention to the key role that technology plays in SMEs success in this current knowledge economy. However, with the right technological application, not much finance and many actors would be needed to boost SMEs growth. It is based on this conviction that this study would develop SME success prediction model that captures all the elements that determines SMEs success and growth found in most studies.

Also, Miroslav and Yanko [28] stated that many different theories have attempted to identify the main factors underlying firm growth, and that they can be divided into two main schools: the first addresses the influence of firm size and age on growth, while the second deals with the influence of variables such as strategy, organization and the characteristics of the firm's owners or managers. They further mentioned that when firm size is proxy by a firm's number of employees the observed effect is marginal. Rather, firm's specific characteristics such as leverage, current liquidity, future growth opportunities, internally generated funds, and factor productivity are found to be important factors in determining a firm's growth and performance. And that age and ownership do not seem to be able to explain firm growth [29]. Further, Najib H. [30] revealed that the principal factors promoting firm growth are business strategies that are focused on product diversification and market share expansion; Location in large urban centers; Legal status as a limited liability company; The presence of price competition; presence in markets with high demand; and certain government policies such

as labor regulations, anti-trust and environmental policy. He further indicated that the principal factors impeding firm growth are lack of access to qualified workers and managers; Location in smaller population centers; and certain other government policies such as regulation of foreign trade and policies that promote domestic price volatility [31].

It is very paramount to state that enterprise growth can be identified in four theoretical perspectives: The resource-based perspective, the motivation perspective, the strategic adaptation perspective and the configuration perspective. The resource-based perspective focuses on the enterprises' resources like expansion of business activities, financial resources, educated staff, etc. the resource-based theory holds that there are unlimited sources of opportunities in the marketplace. Therefore, it is essential to manage the transition point at which the resources are being reconfigured by deploying firms' resources to identify and exploit the next growth opportunity [32]. Also, Pajarinen et al. [33] stated that entrepreneurs with higher academic background are more innovative and will use modern techniques and models to do business. Schumpeter [34] also indicated that an entrepreneur needs to be innovative, creative, and should be able to take risk. Further, Barringer and Bluedorn [35] described entrepreneurs as individuals who can explore the environment, discover the opportunities, and exploit them after proper evaluation. These studies clearly show that the success of SMEs largely also depend on owners capabilities rather than a business plan.

Analyzing the success of a new business is an important venture that entrepreneurs need to undertake before they seek funding. We all know that no business investor will want to fund a project that does not have evidence for potential growth. Go4funding [36] stated that the several common components that predict the success of a new business are strength of the management team, efforts of entrepreneurs, competitive advantage, marketing surveys, simulated test markets, web analysis and area of industry [37]. In other to achieve economic development, it is critical for SMEs to create, apply, and introduce innovation [38]. Other researchers have also proved that in the past, only 60% of the innovations were in the SME sector, but most of them were not successful due to lack of professionalism and inability to collaborate with

other enterprises [39-41]. However, the current trend has shown that innovativeness and creativity is very vital to the survival of all SMEs. To sustain in today's market and meet customers', it has become important for organizations to differentiate themselves on the basis of capabilities and competencies. They need to compete on different dimensions such as design and development of products, manufacturing, cost, distribution, communication, and innovative ways of marketing. These challenges call for reorientation of SMEs, so that the demand for high dynamism, flexibility, and innovativeness can be met [42].

The key role innovation play in determining SME success cannot be underestimated as elaborated in the work of Stenholm P. and Renko M. [43]. However, the dynamics in the market offer new growth opportunities, which may be exploited in innovative ways [44]. Also, Cho, Hee-Jae & Vladimir Pucik; Kirzner I; and Lumpkin, G.T. & Dess, G.G [45-47], mentioned that new market-product combinations, changes in demand and yet to be recognized market niches provide potential revenue generating and growth opportunities. However, research has shown that it may be impossible for SMEs to exploit these opportunities given its current resources and the dynamics in the business environment. In order to take advantage of the opportunities or to adjust its actions to configure them, SMEs need to focus on renewal and rethinking of the present and to act innovatively [48-50]. When analyzed critically these studies, the chaos theory's and project finance angle model, this study can assert that our environment is characterized by many dynamics which makes it very difficult to gauge the success of SMEs and its future.

Most scientific studies have shown a positive relationship between the growth intentions of firms' owner and the actual growth of the firm [51-55]. However, according to Saemundsson 2003; Wiklund and Shepherd 2003, the connection appears to be somewhat weak, meaning that the success of SMEs is also affected by other factors. Covin and Slevin 1997 and Sexton and Bowman-Upton 1991 maintained that the relationship between aspiration and actual growth is likely to be moderated by market constraints, entrepreneurial capabilities, and organizational resources. On the other hand, Covin and Slevin 1997; Davidsson 1991; Morrison, Breen, and Ali 2003; Sexton and Bowman-Upton 1991; Toivonen, Stenholm, and Heinonen 2006 indicated that two further

fundamentals abilities and opportunities, are decisive. They indicated that the fundamentals for firm growth, abilities, refer to the firm resources and managerial skills that are needed in pursuing growth, this has been supported by Brown and Kirchoff 1997; Gibb and Davies 1990; and Penrose 1959. Further, Barney 1991; Sexton and Bowman-Upton 1991; Wernerfelt 1984 makes it clear that managerial skills are necessary for directing and acquiring other growth-related assets, such as human resources, organizational routines, and financial resources.

In addition, Mazzarol 2003, and Le Brasseur, Zanibbi, and Zinger 2003, affirms also affirms that firm growth typically requires the delegation of managerial tasks and the fostering of potential new external relationships with customers and business partners. Furthermore, managerial skills are crucial in recognizing growth opportunities and in generating the growth strategies [56]. All these literatures reviewed point to the fact that, there are many factors to consider when analyzing, gauging or predicting a firm's success and growth. Therefore, this study see it as very necessary to merge all the factors identified through data collection and literature to develop a model based on the Chaos Theory, the Project Angel Model and the four theoretical perspectives of enterprise growth to prove that, business plan or document do not guarantee a successful SMEs business neither can it be used to predict SME success.

5. THE PURPOSE OF THE RESEARCH AND THE RESEARCH QUESTIONS

This study is conducted to systematically identify and examine the factors to consider before selecting SMEs for incubation. Also, this study is conducted to prove whether a business plan or other business documents are the best tools for assessing the success of SMEs. Further this study is intended to combine all the factors that determine SMEs success to develop a model based on the chaos theory, project angel model and the four theoretical perspectives of enterprise growth. Additionally, the study is conducted in other to come up with SMEs Success Prediction Model and SMEs Business – Project Success Rater to help gauge SME success. In other to achieve these, the study will try to find answers to the following five key questions:

- What are the key factors that determine SMEs success in a developing economy?

- Does a business plan contain all the factors that determine SMEs success?
- How can those factors that determine SMEs success and growth be developed into a model?
- To what extent does a business plan helps to predict an SME success?
- What business model would be ideal for predicting an SME success and growth in the constantly changing knowledge economy?

6. THE RESEARCH METHODOLOGY

This is a scientific study which uses a well structured survey, which describes the state of affairs as it prevails at the time of study, and analytic, thus, uses the already available facts and information and analyze them to make a critical evaluation of the subject [57]. The questionnaires to this research were given to a selected sample from a specific population of state institution, staff of the ENGINE program of Technoserve in Ghana and some SMEs owners. The term 'survey' as applied to this research is a methodology designed to collect data from a specific population, or a sample from that population and typically utilizes a questionnaire or an interview as the survey instrument [58]. A quantitative questionnaire was used to obtain data from individual respondents about themselves, their work (factors that have proved to have strong influence on SMEs success such as age and tenure of work). Further, some of the respondents were interviewed to allow for probing questions, the number of interviews conducted were less because the distinct advantages in using a questionnaire versus an interview methodology is that questionnaires are less expensive and easier to administer than personal interviews. Studies have also shown that questionnaires often lend themselves to group administration, and allow confidentiality to be assured [59].

Further studies have revealed that mislaid data and chaotic mistakes in data collection are often the leading causes of error in a survey [60]. In other to avoid mistake, the primary data of this study was gathered by means of interviews and questionnaire and involved quantitative techniques. A significant number of face-to-face interviews were conducted with state institutions and some ENGINE program heads and employees operating in Ghana. Also, some selected SMEs were interviewed, alongside well known academic professionals. Specific line of

questions which are not different from the questions in the questionnaire were asked during the interview and responses were entered against each question asked. All data collected were validated in excel to restrict the type of data that are entered into cells and to also ensure no invalid data is entered. Two different sets of questionnaires were given to each group as part of the data collection. Also, the interview and questionnaires were administered through e-mails, field visit, and phone calls. This study is believed to be a social study that employs empirical statements and methods. An empirical statement is a descriptive statement about what "is" the case in the "real world" rather than what "ought" to be the case [61]. Moreover, the quantitative aspect of the study consists of numerical data. The study used mathematically based methods to collect and analyze all data collected. All data collected from each population is presented separately to enable the study attain the desired results and level of importance. Further, analysis of all relevant data was done using models, charts, tables and Microsoft Excel software for both qualitative and quantitative analysis.

7. DEMOGRAPHIC PROFILE OF THE RESPONDENTS

It is very important to justify that the quality of a study is often better with sampling than with a census. This study used a simple random sampling to select 40 respondents, consisting of 3 heads of state institutions, 27 NGOs heads and employees who facilitate the process of selecting SMEs for incubation, 3 academic professionals who have well studied SMEs business climate in Ghana, and 3 SME owners who failed and 4 who passed the NGOs incubation selection process. The Table 1 represents the demographic characteristics of all the respondents.

The Table 1 which represents gender and age distribution, various positions, educational level and tenure of work of all the respondents indicated that male dominates the state institutions and international NGOs supporting the SME sector in Ghana. Same trend was observed under academic professionals who are knowledgeable in the SME sector in Ghana. The study also showed that male dominates the SME industry. The above demographic Table 1 revealed that male was the majority, 72.5% while; 27.5 of the respondents were female.

Table 1. Demographic characteristics of the respondents

Profile	Category	Number					Frequency %
		State institutions	Local and international NGOs	Academic professionals	Successful SME owners	Filed SMEs owners	
Gender	Male	3	20	2	3	1	72.5
	Female	0	7	1	1	2	27.5
Total		3	27	3	4	3	100.0
Ages	20-39yrs	0	16	0	0	0	40.0
	40-49yrs	2	8	1	2	2	37.5
	50 yrs+	1	3	2	2	1	22.5
Total		3	27	3	4	3	100.0
Position		Deputy country Coordinators, directors, managers, project officers, supporting staff		Lecturers and researchers	SME Owner	SME Owner	
Educational Level	No Educ.	0	0	0	0	2	5.0
	Certificate / Diploma	0	6	0	1	1	20.0
	Degree	0	13	0	3	0	40.0
	Master / PhD	3	8	3	0	0	35.0
Total		3	27	3	4	3	100.00
Tenure of Work	Below 5yrs	2	15	1	1	0	47.5
	6-10yrs	1	12	2	2	2	47.5
	11-15yrs	0	0	0	1	1	5.0
	16 yrs +	0	0	0	0	0	0.0
Total		3	27	3	4	3	100.0

7.1 Age Distribution

Table 1 showed the age distribution and positions of the respondents as follows: Majority of the respondents were within the age group of 20-39 years, representing 40.0%. This is followed closely with those within the age bracket 40-49 years. This group makes up 37.5% of the respondents. Lastly, 22.5% respondent belongs to the 50 years and above category.

7.2 Positions Help

Respondents from the state institutions, international NGOs, academic professionals and SMEs hold various positions as deputy country coordinators, directors, managers, project field officers, supporting staff, lecturers, researchers, and SME owners.

7.3 Educational Level

Also, from Table 1 the level of education of the respondents revealed that only 2, representing 5% out of a total of 40 respondents do not hold any academic qualifications. 20.0% of the respondents hold certificates or diploma qualifications, this is followed by a further 40.0% of the respondents who hold bachelors degree. Additionally, a 35.0% of the respondents were found to hold either masters degree or PhD. These figures indicate that 95.0% of the respondents could read, write, and clearly understood the research topic, and every question posed to them. Further, the 5% who hold no higher academic qualification could read and write and clearly understood the purpose of this study.

7.4 Tenure of Work

Figures from Table 1 indicate that 47.5% of the respondents have worked below five years, while same percentage was recorded for those who have worked between 5-10 years. These figures indicate that majority of the respondents have thorough knowledge in the SME sectors. This figure is followed by those with 11-15 years working experience, constituting only 5.0% of the total respondents. Interestingly, only 2.5% of the respondents were found to have worked in the SME sector for more than 15 years. These dynamics with regards to the demographic characteristics of all the respondents have given the data gathered much credibility. The data recorded from all the respondents clearly

shows that all the respondents have thorough knowledge on the research topic and were able to provide adequate and right information.

8. DATA COLLECTION AND ANALYSIS

The collection of primary data for this study was gathered through questionnaire, face-to-face and phone interviews. The weighting method of Horvitz and Thompson, 1952 was used to analyze the numbers that was assigned to each SME success indicator. This method was adapted to ensure the quality of this study's data. On a Likert scale of 1 to 5, with 1 being the least and 5 highest, respondents were asked to assign weights to ten key identified determinants of SMEs success to indicate the extent to which they agree that those indicators contributes to SMEs success in developing economies. All the various weights were assigned to the indicators according to the individual respondent's level of agreement to the extent of influence it has on SMEs growth. A simple regression analyses was use to assess teach data. The dependent variable is firm success (scalability and or growth). The weight of W_j as used in this study was to ensure that the weights reflect a product of likelihood P_j , from intricate multistage selections and a response rate r_j in $W_j = 1/P_j r_j$. This shows that this research used mean statistics to normalize with the sum of weights as in $y_w = \sum w_i y_i / \sum w_i$ and in $\sum w_i y_i x / \sum w_i$ and $\sum w_i y_i^2 / \sum w_i$. Additionally, several reproductions were conducted to reduce the degree of variances in the individual weighting (Kalton, 1983).

Further, an inter-correlation matrix was constructed to find out how the various key indicators of SME success indicated in the project angel model, chaos theory and the theoretical perspective of firms growth dimensions. The logic behind this is to find out the possibility of collinearity in the regression model of data analysis. In testing the hypotheses, a t-test of significant difference level was performed on the mean of all the key indicators. A further independent t-test, which assumes unequal variance, was performed at 95% confidence interval to determine whether a business plan or any business document contains all the indicators that helps to gauge SMEs success, as against the indicators of project angle model, chaos theory and the theoretical perspective of firm's growth dimensions.

Form Table 2 is the difference between the mean scores of elements that determine SMEs success that are dependent on the project angel model, chaos theory and the theoretical perspective of firms growth dimensions elements. The T-values are significant at .02 levels for creativity & innovativeness, use of Technology, economic factors, management competencies, environmental factors, age and firm size, government policies, business strategies, competitive advantage, and personality traits to help gauge SMEs success. Further, a T-value amount of creativity & innovativeness, use of Technology, economic factors, management competencies, environmental factors, age and firm size, government policies, business strategies, competitive advantage, and personality traits are significant at .05 levels. This result clearly shows that the elements have significant impacts in gauging SMEs success in developing economies. Also, Table 2 shows the mean and standard deviation of the elements that determines SMEs success in developing economies.

Also, the Table 3 further attempts to predict the factors that determine SMEs success.

The Table 3 measures the predictor of SMEs success through the project angel model and chaos theory and the theoretical perspective of firm's growth dimensions. This measure reveals a positive significant correlation between the total scores of SMEs success prediction indicators (P < 0. 02). Additionally, the results in Table 3 show a significant P-value =0.000 (less than 0.05) for the prediction relation between the indicators and SMEs success.

Further, Table 4 confirms the occurrence of a prediction relation between the factors used to gauge SMEs success and the dependent variable (project angle model and the chaos theory).

One key point drawn from the relationship of the factors is shown in the above Table 4 with the help of the values of intercept (0.582) and slope for SME success regression line (0.880). This suggests that to gauge the success of an SME,

Table 2. Indicators of SMEs success

N	Factor	N	Mean	SD	T
1	Creativity & Innovativeness	40	20.9	.578	5.74.
2	Use of Technology	40	20.7	.516	4.43
3	Economic Factors	40	19.1	.306	2.52
4	Management Competencies	40	20.3	.415	5.20
5	Environmental Factors	40	18.6	.254	3.22
6	Age and Firm Size	40	16.4	.203	2.10
7	Government Policies	40	18.4	.343	3.58
8	Business Strategies	40	20.2	.543	4.78
9	Competitive Advantage	40	18.9	.432	3.87
10	Personality Traits	40	20.4	.466	5.34

P>.05, P>.02

Table 3. Predictor of SMEs success

Model	Sum of squares	Df	Mean squares	F	Sig
Regression	32.528	1	32.548	187.230	.000
Residual	53.251	189	0.354		
Total	88.779	189			

Table 4. Dependant variable: SMEs projects financing gap

	Un-standardized coefficient		Standardized coefficients	T	Sig
	B	Std error			
SMEs Success Factors	0.880	0.038	Beta 0.564	16.264	.000

the respective investors or funds providers (NGOs) can significantly predict 0.880 (88%) chances of an SME succeeding based on the above stated indicators. Auxiliary, a slope of 0.564 for SME success factor is formed when the test applies standardized independent and dependent variables. To measure the influence of a forecast relation through 'Beta' could indicate some vulgar results. Due to this a conventional measure 'coefficient of determination' was calculated. The SMEs success scores on prediction factors exhibit nearly high positive association ($r = 0.564$) with those factors that predict their success.

Last of all, shown in Table 5 is the summary regression for SMEs success prediction factors and SMEs success determinants.

The Table 5 revealed the presence of a well-built positive relationship between SMEs success and the determinant factors; This proves that SMEs success can be predicted based on the elements identified in this study. The above table further shows an 'R' value of 0.564, indicating that 56.4% of the variance in SMEs success prediction can be overcome by paying a critical attention to those determinants stated in this study.

8.1 SMEs Incubation Selection Process

Data gathered through this study revealed that most NGOs operating in developing countries have adapted a common non-scientifically proven process for predicting SMEs success and selecting them for incubation. The NGOs do this through common practices such as business 'plan competition'. The incubation selection process used by most NGOs is shown in Fig. 1.

The Fig. 1 describes the process used by most NGOs in developing economies that support SMEs. This study through literature review and careful data analysis has uncovered that the above process used to determine the success (scalability) of SMEs has no scientific verification or prove. The above process is also

not based on any well proven business theory or model. This study further discovered that the above process is prone to biases, most often leaves a more promising SMEs from being selected, does not conduct detailed risks and other business feasibility analysis and ignores the pivotal role that all the indicators of business success play in gauging SMEs success.

Also, data collected and analyzed revealed that creativity & innovativeness, Use of Technology, economic factors, management competencies, environmental factors, age and firm size, government policies, business strategies, competitive advantage, and personality traits are the key indicators of predicting SMEs success. The Fig. 2 is a bar chart representation of a percentage degree of impact that each of determinant have on the success of SMEs.

The bar chart in Fig. 2 was drawn based on date collected and it represents the various elements and the percentage level of impact each element has when predicting or analyzing SMEs success. The study revealed that the above element when analyzed in detail is the most perfect indicator for determining SMEs success. The study revealed that innovativeness and creativity has greater impact on SMEs success, constituting 20%. This was followed closely by technological application, with a 17.5% contribution to SMEs success. The study further uncovered that a business plan is a sub-element under business strategies which contributes 12.5% to SMEs success. This same percentage was recorded for management competencies. This is a clear indication that management competence level is directly linked to the level of business strategies developed and applied. Also, personality traits and economic factors had 10% and 9% impacts respectively in determining SMEs success. The results however proved that external environmental factors and government polices has 6% and 6.5% impacts respectively on SMEs success. Lastly, the above Fig. 2 through this study has proved that competitive advantage and firms age and size has 3.5% and 2.5% contribution impact respectively on SMEs success.

Table 5. Summary regression for Knowledge economy factors

R	R square	Adjusted R square	Std. Error of the estimate
0.564	0.446	0.454	0.3462

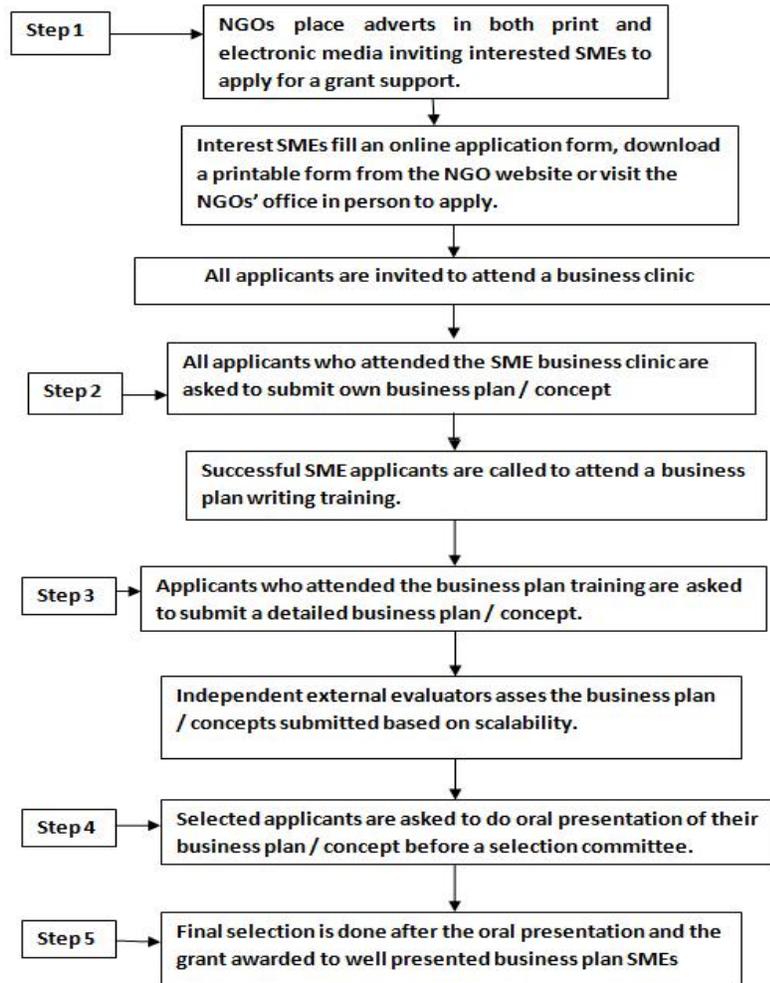


Fig. 1. SMEs incubation selection process used by NGOs

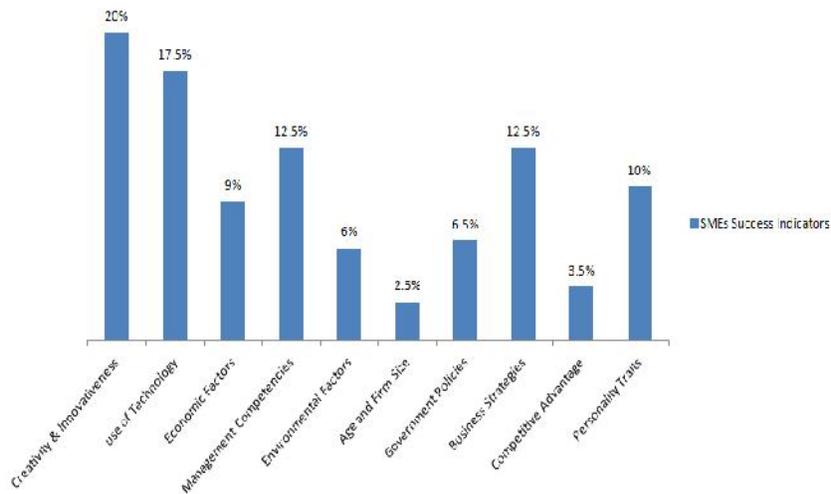


Fig. 2. SMEs success factors

8.2 Development of SMEs Success Prediction Model

The true representation, achievements and real application of the chaos theory, the project angel model and the theoretical perspective of firm's growth dimensions in multiple fields of study is what informed my decision to use them in this study. These theories and data gathered clearly shows that each factor that influence SMEs success has the ability to demonstrate how each simple set can form a deterministic relationship and reproduce unpredictable outcomes. Also, the chaotic factors in SMEs operations which determine their success never return to the same exact state, however they multiply over time because of the nonlinear relationships and the dynamic, repetitive nature of those chaotic factors. As a result, such factors tend to be extremely sensitive to initial conditions, which make prediction of SMEs success very difficult. The logic behind this analysis also proves that SME owners not only find it difficult to forecast but also do not even know their own costs. Therefore, the Fig. 3 presents SMEs Success Prediction Model to show the interconnectivity of all the various factors and their percentage impacts on SMEs success.

8.2.1 Government policies (legal and political)

The head of the model below in Fig. 3 of this study is the Government. The government is seen to have greater influence on tax laws, political and legal requirements, trade promotion law, specific SME sector growth strategies and fiscal Policy. Also, Yusuf [62] points out that in most developing economies; Satisfactory government support has been shown to be important for small firm success. It is a worrying situation to note that, dealing with legal requirements has forced most SMEs to allocate significant amount of financial resources due to corruption and bribery practices. Further, Mazzarol & Choo [63] maintained that legal aspect is often used in selection weapon and in decision making process by the government in order to ensure future business success. This study revealed that government constitutes 6.5% of SMEs success.

Government influence includes: Approval of SME business-projects, control of the state company and NGOs that sponsors the SMEs business-project, responsibility for operating and environmental licenses, tax holidays, supply

guarantees, industry regulations or policies and providing operating concessions. Most often certain government policies tends to believe that SMEs must sponsors their own business-project, however, it is possible for a single local government institutions, a consortium or an NGO to sponsor SMEs business-project. Typical sponsors include foreign multinationals, local companies, contractors, operators, suppliers or other participants. The World Bank estimates that the equity stake of sponsors is typically about 30 percent of project costs. Also, political risks such as changes within the country's political landscape, changes in national policies, change of administration, and laws regulatory frameworks. Further, certain environmental laws, tax policies, and energy policies are particularly important to SMEs growth. Additionally, most SMEs in developing countries continue to face significant political risks, such as market restrictions, working permits, negotiation of contracts etc. The model below has shown that government has 6% influences on personality traits and also proves clearly the crucial roles that government play when predicting SMEs success.

8.2.2 Personality traits

From the model in Fig. 3 shows that when predicting the success of an SME, personality traits of the owners play a crucial role in the SME success and constitute 10%. These traits include the individual competencies, growth intentions, self efficacy, extraversion, personal background, risk taking propensity, locus of control and experiences. Personality traits of the entrepreneur are the most important determinants that determine the success of SMEs [64]. Also, Hollenback & Whitener, and McClelland D. [65,66] stated that traits are important predictors of venture growth, which work primarily through competencies, motivation and strategy. According to Blackman (1991) the characteristics of an entrepreneur which contribute to firm's success can be grouped into two namely: Attribute, the attributes are characteristic that is in itself an entrepreneur, and includes religion, ag, family influence, and gender. The second characteristic is attained, this include education and experience of the owner/manager. Also, [67] indicated that several internal and external factors such as family, education, personal values, and work experience influence firm's success. The 10% results recorded for personality traits showed that all the above mentioned individual factors focuses on

the effects that environmental factors have on a firm's strategy.

Further, Miller & Rice [68] affirms that different external environments require different strategies matched with complementary internal environments and structures in order to promote success. Additionally, Endi Sarwoko & Christea Frisdiantara [69] also indicated that the strategy of innovative differentiation for instance, is most likely to be pursued in uncertain environments and correlates with the use of technocrats and liaison devices. And the strategy of cost

leadership is associated with stable and predictable environments and is correlated with the use of control. Furthermore, Cunningham J.B & Lischeron J. [70] stated that people who possess entrepreneurial characteristics will have a higher potential to perform entrepreneurial acts and can be identified by traits of personalities or 'psychological characteristics' that promote risk-taking. These are clear indications of the crucial role that personality traits play in determining SMEs success which this study found.

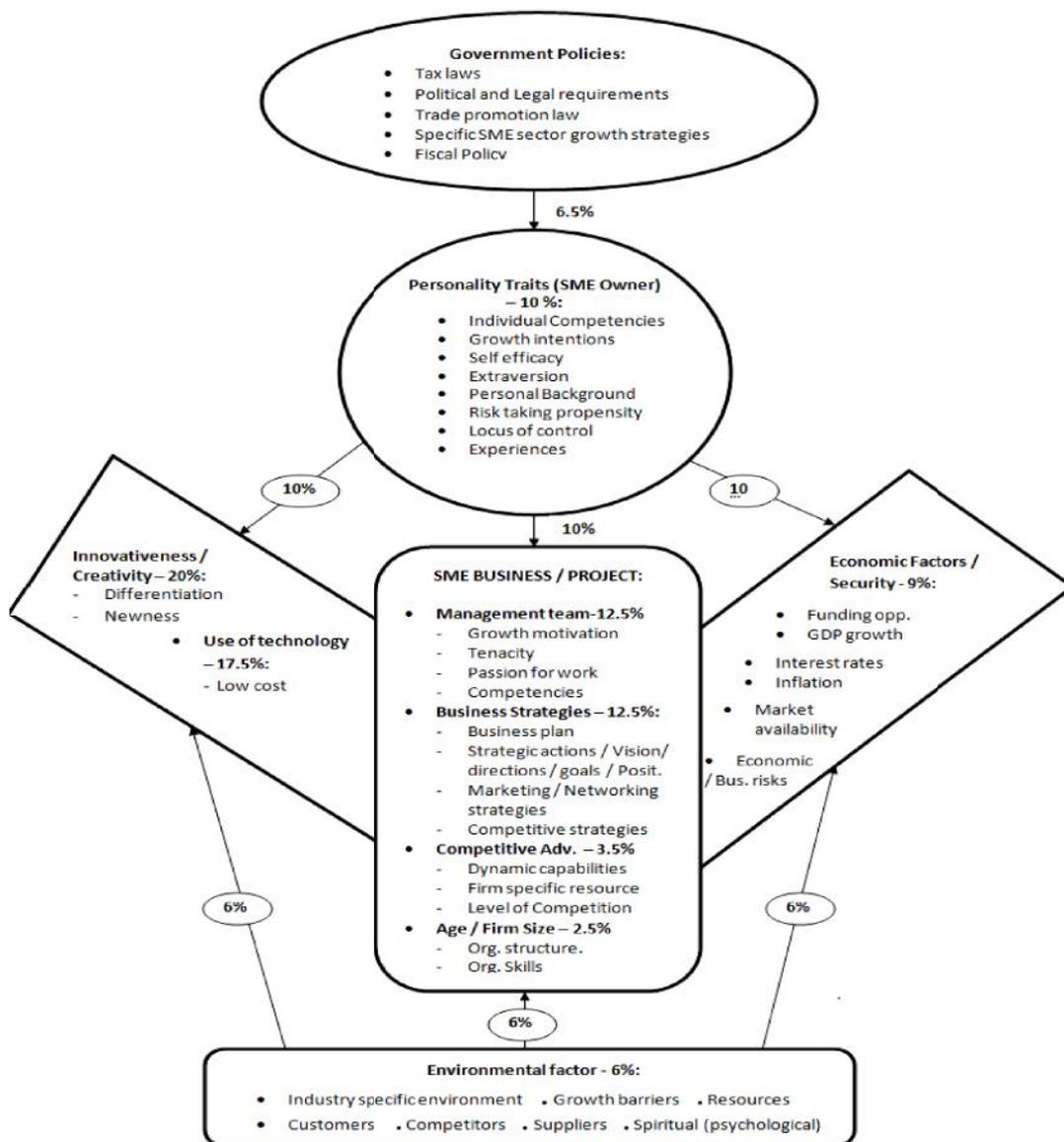


Fig. 3. SMEs success prediction model

8.2.3 Industry-specific environment and environmental factors

This study recorded that 6% of SMEs success is determined by the environmental factors within area of operations. Most studies have proved that it is very difficult to predict firm's success. It further proved that the unpredictability of firm success rates may also differ from industry to industry, depending upon the kind of competition and type of the product, etc. A study conducted by Dunne, Roberts, and Samuelson [71] showed that firms' success rate vary significantly among different industries in the manufacturing sector in the United States. Also, a study by Harhoff D et al. [72] in Germany confirms sectoral differences in success rate. The study also showed that firms in the services sector in particular are characterized by above-average employment growth. Another study by Johnson, Baldwin and Hinchley [73] discovered a close connection between success dynamics within a sector and firms' success rates. They further indicated that firms' success rates in a growing sector must be higher than those of firms in languishing sectors.

Other researchers have shown emerging markets portray low barriers to entry and exit. This therefore gives individual firms diverse growth opportunities depending on the sector. Also, Barney, and Penrose [74,75] makes us understand that a firm's ability to access resources influence its success and performance. They further stated that a firm's capabilities in accessing and connecting resources enables them to achieve a sustained high performance. Further, the Resource-Base approach view competitive advantage of a firm and its success as the result of the portfolio of resources it is able to connect for its performance within the industry. The above stated points clearly show that the success and challenges faced by SMEs varies from sector-to sector, and has greater effects on SMEs success. The crucial role both internal and external environment factors play in firm success has long been noted. Factors such as government and other stakeholder support, and legality frameworks, cultural values, resources, and social networks within the environments are the key strategic dimension in business success. According to Kristiansen [76] networks represent a means for entrepreneurs to reduce risks and transaction costs and also to improve access to business ideas, knowledge and capital. Kristiansen further stated that a social network consists of a series of formal and informal ties

between the central actor and other actors in a circle of acquaintances and represents channels through which entrepreneurs get access to the necessary resources for business start-up, growth and success.

8.2.4 Innovativeness, creativity and use of technology

This study discovered that innovation constitutes 20% of the success of every SME, while use of modern technology constitutes 17.5% to the success of SMEs. This proves that the innovativeness of the business owner and the owner's ability to acquire and use modern technology is very crucial in accelerating growth and success. This research accepts the notion that entrepreneurship and business creation is crucial for employment generation. Therefore, entrepreneurship must be innovation-driven and must also apply modern technology to help generate solutions to the economic problems of most developing economies. Innovation is at the heart of the spirit of enterprise. It means that successful SMEs are those who strive or are able to perform activities differently or performs activities differently to enable their business deliver a unique mix of value. Being innovative, the entrepreneur must be able to bring the best ideas into reality, and the idea must trigger a creative idea or generate a series of innovative events. This study also discovered that successful SMEs are those who are able to transform new ideas into new value for customers. It must be noted that no entrepreneur can be innovative without being creative. Without innovation the entrepreneur and what he provides will become obsolete.

Innovation and creativity also play a significant role in start-up businesses and it is regarded as the key driver in developing a business idea, organising resources, and creating a business to bring new product or service into the market. In most competitive business environment the entrepreneur must demonstrate the ability to come up with opportunities and convert them into new products or services. The concept of innovation in SMEs should aid the entire business create a competitive edge in the market. According to Joseph Schumpeter [77] the use of invention to create a new commercial product or service is the key force in creating new demand and thus new wealth. Joseph believes innovation creates new demand and entrepreneurs bring the innovations to the market. When analyzing the innovativeness of

the entrepreneur there is the need to consider the form it takes. Innovation in SMEs can take the form of processes, which includes changes and improvement to methods of production or the entire business operation. This often leads to increases in productivity, lower cost and helps to increase demand. Also, the innovation must be in products or services. Most progressive innovation tends to be predominant, radical, opens up new markets and in most cases leads to increases demand, investment and employment. Further, the innovation must be in management and work organization, and the exploitation of human resources, together with the capacity to anticipate techniques [78].

Technology, also in this study, it became evident that technology constitutes 17.5% of SMEs success. Elegant entrepreneurs are those who view technology as a means to an end, and not an end of itself. According to Jim Collins (2001) technology is an accelerator; this means that technology can accelerate both good and awful ideas towards success or failure. However this study discovered that most entrepreneurs who put good ideas or bad ideas into the technological accelerator are able to achieve success. All the above clearly shows that when analyzing the success of SMEs, critical attention must be given to the innovativeness and creativity of the entrepreneur.

8.2.5 Economic factors

This study noted that economic factors constitute 9% of SMEs success. Olena Arefyeva (2004) stated that the activity of economic agents in emerging market relations requires a rapid determination of factors conditioning the availability of economic security of businesses, adaptation to dynamics of external environment through liquidation of existing threats are crucial to ensure every business success. Olena further indicated that elements of the state economic factors are reduction of science-based production; lack of developed banking and insurance system, as well as guarantees from trust organizations; state budget deficit; the outflow of capital; high taxes on producers; low level of economic statistics credibility; weak law enforcement agencies and mass media; poverty and misery of the majority of population; strikes. Further included in the economic factors are lack of legislative framework that regulates the rights and duties of the regions; Lack of the regional banks network; failure to change local taxes and charges; failure to compile a free regional

financial balance sheet; lack of economic infrastructure or its insufficient level of development.

Also, consumer confidence, employment, interest rates, inflation and GDP growth rate play a key role in SMEs success. The consumer confidence which is an economic indicator that measures overall consumer optimism about the state of the economy, also tend to measure the willing of customers to spend money shows that consumers with low confidence are more likely not to spend and business tend to prosper when consumer confidence is high. Additionally, employment in an economy tends to follow a business cycle of economic booms followed by periods of stagnation or decline. During boom periods, jobs tend to be plentiful, since companies need workers to keep up with demand. When unemployment is low, consumer spending tends to be high because most people have income to spend. Further, high interest rate tends to affect business profitability. Most SMEs rely on loans from banks or other financial institutions as a source of financing. Higher interest rates result in higher total business expenses. Also, high interest rates can also reduce consumer spending, because high rates make it more expensive for consumers to take out loans to buy things in the market. On the other hand, inflation causes increases in business expenses such as rent, utilities, and cost of materials used in production [79].

8.2.6 Management team

Through this study it came to light that team involved in the management of every SME contributes or must contribute 12.5% to its success. This study also discovered that management team is the main human capital of the business. Empirical research have shown that a manager's primary challenge is to solve problems creatively and should view management as the art of getting things done through the efforts of other people. The principles of management, then, are the means by which leaders actually manage, that is, get things done through others - individually, in groups, or in organizations. Formally defined, the principles of management are the activities that plan, organize, and control the operations of the basic elements of people, materials, machines, methods, money and markets, providing direction and coordination, and giving leadership to human efforts, so as to achieve the sought objectives of the enterprise. The Neoclassical, Organization,

and Human Relations management theories have made it clear that the management of a successful organization require managers who have the ability to achieve the organizational goal through employees [80,81]. Let us not forget the numerous challenges that managers face as they coordinate organization's activities can largely be attributed to the current knowledge economy.

Most organisations that are able to effectively exploit the cognitive abilities of their human resources can assure its economic security and success. Analoui et al. [82] stated that for an organization to achieve continuity and success, that organization must be innovative, creative and strategic when thinking in providing its services and products. According to Liu Y. and Ravichandran [83] managerial human capital is made up of the ability and knowledge embedded in the organization's managers, upper level perspective posits that managerial characteristics of top managers, such as education, age, and experiences, can predict the strategic outcomes of organization. More so, Gupta and Govindarajan [84] have argued for the need to link managerial characteristics with job requirements. Further, Radell [85] stated that when managers leave an organization, they take with them their embodied skills, knowledge, and experience. Those skills, knowledge, and experience are accumulated, where, individuals gain more experience in organizing and executing work. All the above clearly proves that the success of every SME largely depend on the management team.

8.2.7 Business strategies

This research proved that business strategies contribute 12.5% to SMEs success. It must be noted that the scores of business strategies and management team are the same (12.5% score for both), meaning there is a direct connection between the qualities of the management team and the effectiveness of the business strategies that are put forward to run the SME. According to Raymond and Croteau [86] SMEs must develop themselves strategically in order to remain competitive, grow and prosper in the current complex environment; they further stated that the biggest challenge lies in SMEs taking advantage of the enlarged economic area. They concluded that SMEs need to adopt new planning and control tools to secure and strengthen their competitiveness. Also, O'Regan and Ghobadian [87] indicated that the business environment has been more challenging, as increased change

brings greater uncertainty. The impact of policy directions tends to be short-lived, as the environment continues to assume its own form; all these require SMEs to act strategically.

Also, Kenneth Andrews [88] defines Corporate strategy as the pattern of decisions in a company that determines and reveals its objectives, purposes, or goals, produces the principal policies and plans for achieving those goals, and defines the range of business the company is to pursue, the kind of economic and human organization it is or intends to be, and the nature of the economic and non-economic contribution it intends to make to its shareholders, employees, customers, and communities. Further, Szabo [89] stated that, the main restriction faced by SMEs is a lack of managerial, marketing and entrepreneurial skills. These lacks are more likely to affect the conduct of SMEs in general and in implement strategies. Szabo also mentioned that while most SME owners and start-up entrepreneurs are experts in terms of their products and services, they often lack wider managerial skills which hinder their long term success, strategic planning, identification of customers, acceptance that they will not get rich within a short time, medium term vision, patience, marketing, management of innovation, commitment to quality, knowledge of quality systems, knowledge of foreign languages, cash flow management, and information technology, all of which are critical skills in confronting the challenges in the knowledge economy [91]. These clearly proves that the success of every SME largely depend on the ability of the management team to develop effective business strategies and acts strategically.

8.2.8 Age and size of the firm

This study discovered the age and size of an SME contributes 2.5% to its success. According to the theory of *noisy selection*, by Jovanovic [90] state that efficient firm grows and survives while inefficient firms decline and fail. From the above research findings and the finding this research; I can conclude that the old age of a firm is a justification of its efficiency. Jovanovic further maintained that entrepreneurs are unsure about their ability to manage a new firm (startup) and their prospects for success. In spite the fact that entrepreneurs may launch a new business based on an unclear sense of expected post-entry performance, they only discover their true ability after operating for some time in terms of managerial competence. Most entrepreneurs

base their businesses on an idea that is viable on the market after their business is established. Those entrepreneurs who discover that their ability exceeds their expectations expand the scale of their business, whereas those discovering that their performance is less than appropriate with their expectations will possibly exit from the sector. Also, Audretsch [91] recognized that the likelihood of a new entrant surviving is quite low, and added that the likelihood of survival is positively related to firm size and age. Additionally, Caves (1998) in his work found that firm growth was scientifically related to certain firm specific characteristics. All the above studies affirm the findings of this research which has proved further by assigning the percentage contributions of firms' size and age to its success.

8.2.9 Competitive advantage

This study recorded that competitive advantage of a firm contributes 3.5% to its success. This figure is 1% higher than the contribution of a firm's size and age to its success, an indication that the contributions of firm's size and age always yield a direct 1% competitive advantage per each additional year of operations. Most studies have proved that there is a well-built link between a firm's unique advantage and its sales. Also most studies have concluded that there is an affirmative link between the unique advantages of a firm and its performance. A study by Wang & Lo [92] proved the relationship of competitive advantage and the sales performance of a firm by measuring profitability, return on investments, sale growth, yield, product added value, share in market and performance by the level of sale revenue. Also, according to Raduan et al. [93] there is a positive relation between competitive advantage and firm's success. Raduan further stated that the competitive edge enables a firm to significantly predict the variance in its performance. It also established that the resource-based View of the firm's competitive advantage is one of the key of strategic management theories related to explain the organizational consequences. Additionally, Ismail, Rose, Abdullah et al. [94] stated that the competitive advantage is a part of a firm's high level performance, and further added that this relationship will be exaggerated by moderating variables such as age and size of firms. The moderating effects of these variables provide precious information about strategic management in the attainment of unique edge

and to increase performance. Another study by King and Zeithaml [95] suggested that competitive advantage has a reasonable effect on the association between the ambiguity and the performance of a firm. The above studies conducted by high leveled academic scholars also justify the logical findings of this study on SMEs competitive advantage.

9. SMEs SUCCESS RATING SCORE CARD

One of the objectives of this study was to develop an SME success rating score card, which is based on the developed SMEs success prediction model. A snapshot of the developed SMEs Success Rater excel sheet program is presented in Fig. 4.

The expected scores from the above Success Rater Card would help to gauge whether an SME would be successful or not. The figures to be used in computing the actual scores column of the above score card would be generated from the Success Score Card Assessment Forms, which is found in appendix one (1) of this study, a snapshot of an excel sheet program I have developed through this research findings. Section 'A' of the success score card assessment form contains seven (7) key indicators which this study discovered contribute to and also helps to predicts the success of SMEs. This study also revealed that those indicators are internal and inherent, that is could be controlled by SMEs owner or inborn characteristics of SMEs owners. Further, section 'B' of the success rater card contains three (3) major indicators which this study revealed contribute to and also helps to predict SMEs success. The study also discovered that these indicators are external or with limited control options, because of the chaotic nature of the business environment within which the entrepreneurs operate. Also, Fig. 5 represent the likely expected outcome of success rate scores that the SMEs business-project success Rater Card is capable of generating, depending on the entrepreneur's data imputed.

The Fig. 5 below makes it so clear that any start up or existing business that score 0.7 - 1 has all it takes to be successful and have or is fully utilizing all those success potentials. Also, a score rate of 0.5 - 0.69 indicates that the start up or existing business has all the potentials needed to succeed but those potentials are not fully

SMEs business – project success rater						
Success measuring indicators		Standard score (SS)	Actual score (AS)	Success score (AS/SS)	Success rate score (SS/STSS)*100	Remarks
Section 'A'	Internal indicators:					
i.	Personality Traits	10				
ii.	Innovativeness and Creativeness	20				
iii.	Use of Technology	17.5				
iv.	Management Competencies	12.5				
v.	Firm Strategies	12.5				
vi.	Competitive Advantage	3.5				
vii.	Age and Size	2.5				
Total standard scores (TSS)		TSS = 78.5	TAS =78.5	TSSS = 7	TSRS = 70	
Section 'B'	External indicators:					
viii.	Legal and Govt. Policies	6.5				
ix.	Economic Factors	9				
X	Environmental Factors	6				
Total standard score (TSS)		TSS = 21.5	TAS = 21.5	TSSS = 3	TSRS = 30	
Sum of A and B		STSS = 100	STAS = 100	STSSS = 10	STSRs = 100	

Fig. 4. SMEs business-project success rater

RATE	ZONES	Indication
0.70 - 1 70% - 100%	A	Active Success / Scalability Would be successful with or without any external support.
0.50 - 0.69 50% - 69%	B	Inactive success / Scalability Potentials Requires moderate external support to become successful.
0.35 - 0.49 35% - 49%	C	Marginal availability of success / scalability potentials Have some forms of uncertainties that require special attention and support to succeed.
0.20 - 0.34 20% - 34%	D	Evidence of likely unsuccessfulness / no scalability potentials Requires intensive support in some aspects of the business to become successful
0.10 - 0.19 10% - 19%	E	Manifestation of unsuccessfulness / no scalability potentials Requires extensive support in all aspect of the business.

Fig. 5. SMEs business-project success rate zones

unused, this requires moderate external support. Further, any score between 0.35 - 0.49 is a sign of the existence of no growth potentials or potentials that are not needed to succeed in the current sector the entrepreneur finds himself. This calls for NGOs, government institutions and other private organizations that are experts in the SME sector to act swiftly to make it more competent. This also calls for an immediate short-term support. Additionally, a score of 0.2 – 0.34 means the entrepreneur lacks certain key characteristics needed to succeed. This calls for an immediate medium-term support to help solve

the challenge. Lastly, a score of 10 – 0.19 is a clear indication that the business has failed and therefore requires an immediate long-term external support.

10. CONCLUSIONS

This study has systematically conducted a scientific research analysis on the approach to assess and select small and medium enterprises (SMEs) for incubation on the base of angel model. This was done through the use of the Project Angel model, the Chaos Theory, the

Noisy Selection theory and other theories. The study has developed SMEs Business– Projects Success Prediction Model and SMEs Success Rater. Also, the study has developed an excel program to help NGOs, government agencies and other organizations who support SMEs business to easily gauge SMEs success. Further, the many determinants of enterprise growth and success has been classified into ten (10) dimensions, namely: SME owner personality traits, government, Economic factor, Innovation, Use of technology, Management team, Firm Strategies, Competitive Advantage, Age and Size and environmental factors. Furthermore, empirical studies of this research have proved that a well-presented business plans or business documents do not guarantee SMEs success. However, individual ones such as SME owners' innovativeness, technical knowledge, growth motivation and many more do. Additionally, an enterprise's scalability (its preparedness to grow) is found to have a positive relationship with a firm's success.

The study has also proved that the many factors influencing SMEs success can effectively and accurately be gauged base on the developed SMEs success rater card. Further, factors such as social, ecological, and economic systems tend to be characterized by relationships and complex interactions that evolve dynamically over time and tend to affect business growth. More so, growth of every firm is gradual and a vital source of success which requires a holistic analysis because it is influenced by a number of factors that are not captured in business plans or documents. Additionally, a business plan is part of the strategies entrepreneurs adapt, therefore, to accurately predict SMEs success or selection for incubation one must use the SMEs Business– Projects Success Prediction Model and SMEs Success Rater; an excel program which is the output of this study. Lastly, NGOs, government agencies and private organizations which support SMEs must conduct thorough business success feasibility analysis based on the models this study has developed rather than the use of *business plan competition* and other none scientific-based methods. This is because what differentiates successful and unsuccessful entrepreneurs are the presence and the understanding of business success indicators which this study has identified.

COMPETING INTERESTS

Author has declared that no competing interests exist.

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APPENDIX 1

Success indicators scores calculator

	Indicating factors	Weight	Actual scores
Section 'A'	Internal Indicators:		
i.	Personality Traits	<ul style="list-style-type: none"> • Individual Competencies 2 • Growth intentions 1 • Self efficacy 1 • Extraversion 1 • Personal Background 1 • Risk taking propensity 2 • Locus of control and Experiences 2 	
	Total = 10		
ii.	Innovativeness and Creativeness	<ul style="list-style-type: none"> • Understanding of Creative process 4 • Relative advantage 1 • Compatibility 2 • Complexity or simplicity 3 • Trialability 1 • Observability and Proactivity 3 • Opportunistic mindset 1 • Social capital 2 • Newness 3 	
	Total = 20		
iii.	Use of Technology	<ul style="list-style-type: none"> • Method of production / activities 4 • Low cost of production 3 • Human vs machines at work 5 • Low cost of technology applied 3 • E-market (use of internet, social media etc.) 2.5 	
	Total = 17.5		
iv.	Management Competencies	<ul style="list-style-type: none"> • Growth motivation 2 • Passion for work and Tenacity 2 • Organisational Knowledge 2 • Client Focus Influencing 1 • Analytical Thinking 2 • Managing Resources 1 • Teamwork 2.5 	
	Total = 12.5		
v.	Strategies	<ul style="list-style-type: none"> • Strategic Goals / Plans 2 • Tactical Goals / Plans 2 • Strategic Networking skills 2 • Strategic Thinking 2 • Competitive Strategies 2.5 • Other strategic Actions 2 	

	Indicating factors	Weight	Actual scores
Section 'A'	Internal Indicators:		
	(Marketing, distribution etc.)		
	Total = 12.5		
vi.	Competitive Advantage	<ul style="list-style-type: none"> Dynamic capabilities (differentiation, cost leadership etc.) 1.5 Firm specific resource 2 	
	Total = 3.5		
Vii	Age and Size	Day One – One Year / Small 1 Above One Year – Four Years / Medium 1 Above Four Years / Large 0.5	
	Total = 2.5		
Standard Total Score (ETS) = (iv+v+vi+vii+viii+xv+x) ----- ETS = 78.5			
Section 'B'	External indicators:	Weight	Actual score
viii.	Legal and Govt. Policies	<ul style="list-style-type: none"> Tax laws 1 Political and Legal requirements 1 Trade promotion law 1 Gov. Specific SME sector growth strategies 2 Level of Political risk 0.5 Level of Knowledge and expertise on Legal and Gov Policies 1 	
	Total = 6.5		
vx.	Economic factors	<ul style="list-style-type: none"> Funding opportunities 1.5 National Economy growth 0.5 Interest rates 1 Inflation 1 Market availability 2 Economic/ Business risks 1 Knowledge on economic info and analysis skills 1 Knowledge on Accounting and financial info analysis skills 1 	
	Total = 9		
x.	Environmental Factors	<ul style="list-style-type: none"> Industry specific Environment Level of Risks 2 Growth barriers 1.5 Resources 1 Customers / Suppliers 1 Competitors 0.5 	
	Total = 6		
Standard Total Score (ETS) = (viii+vx+x) = ETS = 21.5			
Sum of Totals (Section 'A' + Section 'B') = 100			

APPENDIX 2

Full meanings of Abbreviations

Index	Abbreviation
Standard Scores	SS
Actual Score	AS
Success Score	SSS
Success Rate Score	SRS
Total Standard Score	TSS
Total Actual Score	TAS
Total success score	TSSS
Total success rate score	TSRS
Sum of total standard score	STSS
Sum of total actual score	STAS
Sum of total success score	STSSS
Sum of total success rate score	STRS

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