



SMEs Growth Influencers: An Exploratory Study on the Impact of Entrepreneur Character Traits on SMEs Growth in Ghana

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Authors' contributions

This work was carried out in collaboration between the two authors. The second author supervised the work and contributed in the analysis and concluding part. Both authors read and approved the final manuscript.

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ABSTRACT

Small and Medium Enterprises (SME) play vital roles in the economic growth, employment generating, and poverty reduction in both developed and developing countries. An improvement in the sector will therefore have positive impact on the lives of the people. Several factors may lead to the improvement and growth in SMEs, but the concentration of this research work, was to find out the impact of the characteristics of an entrepreneur on the SMEs growth in some selected Regions of Ghana. It also explains why there exist disparities in the performance of entrepreneurs in the sector.

The study used questionnaires, interviews and observation in data collection among 500 sampled entrepreneurs in selected Regions of Ghana. The data was analyzed by employing statistical tools such as factor analysis, correlation analysis and subsequently ordinal regression model was fit to the data to reflect the objectives of the study.

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The results showed that, there were generally a weak positive correlations between SMEs growth and factors such as innovation, team building and competitive aggressiveness of entrepreneurs. However, there was a moderate negative correlations between SMEs growth and the need to achieve as well as calculated risk taken. Moreover, all the five factors; innovation, need to achieve, calculated risk, team building and competitive aggressiveness of SMEs were statistically significant in the model. Therefore these factors are all relevant characteristics which contribute to the growth of SME firms.

Keywords: SMEs; Ghana; development; entrepreneur; growth influencers.

1. INTRODUCTION

Tones of research work have been dedicated to the field of SMEs in both developed and developing countries over the last two decades. The upsurge is in tandem with the fact the SMEs play a vital role in the economic development of countries [1] as SMEs are been noted to provide 85% of manufacturing employment, 70% of GDP and form 92% of businesses in Ghana [2,3].

These performances of SMEs are propelled by entrepreneur's personal trait, organizational structure and corporate culture among other factors [4,5] and recently confirmed by [6], when they acknowledge the positive impact of independent variables, such as, the characteristics of entrepreneurs on the growth of SMEs in associated research on SMEs growth.

Research on what drives people to start and run their own firms in Vietnam, using a sample size of 938 young students and entrepreneurs, revealed that, those with entrepreneurial traits of enthusiasm, risk-taking propensity, trust and need to achieve have the desire to start and run their own businesses [7], while similar research among young entrepreneurs in Malaysia by [8]. [9], shows that, beside the influence of sociological environment and cultural values, entrepreneurs' attributes and traits such as, risk taking, need to achieve, and hard work play a significant role in shaping and bringing out entrepreneurs.

Also, using a data from 229 entrepreneurs and 106 associates in a single industry on a longitudinal study, it was revealed that goals, self-efficacy, and communicated vision had direct effects on venture growth, and these factors mediated the effects of passion, tenacity, and new resource skill on subsequent growth [10].

[11] however had different opinion, he was of the view that, personality traits of entrepreneurs are important, but may not necessarily result in the actual growth of the firms, but rather the intrinsic motivation influences the entrepreneur's behavior which in turn fuel actual growth of firms [12]. In supporting this view, established that entrepreneurs are motivated by being their own boss' are less likely to pursue growth.

[13] also established that in addition to the characteristics of the entrepreneur, individual difference also determine entrepreneurial behavior, these differences identified include age, gender, education, experience and role models [14], in another research using evidence from over 181,000 entrepreneurs from the American population censuses also established a positive correlation between education, entrepreneurship and self-employment.

[15] asserted that there exist several literatures on the significant role entrepreneur traits play in the success of most SMEs across the globe, as they put it, "unique characteristics are very crucial in the day to day running of their business". Similar views were held by [16,17] when they established that, various entrepreneurial competencies and other factors have influence in entrepreneurial performance in SMEs in developing countries [18] also established a positive link between entrepreneurial optimism, competence and level of performance.

The rationale for this research is to assess some selected character traits of entrepreneurs and their effect on small and medium enterprise growth, as It assessed the impact and relationship between the five selected character traits of an entrepreneur (need to achieve, innovation, aggressiveness, calculated risk taken and team building) on growth of the firms they operates [5].

2. THEORETICAL PERSPECTIVE

2.1 Entrepreneurs Characteristics and Growth of SMEs

The competence of entrepreneurs in running businesses cannot be overlooked, since it makes the difference. Basing on the theory of the Big Five Model on the character traits of entrepreneur and firm's growth [19,20] a robust indicator of individual character of entrepreneur, which include Extraversion, Emotional stability, Agreeableness, Conscientiousness and Openness to experience studied, and from these, need to achieve, risk taking, team building, innovation and aggressiveness were selected. This was in line with the recommendations of [21,13,22,23].

A study in the United State of America of successful entrepreneurs revealed that entrepreneurial competencies influence SMEs growth positively than monetary incentives, especially at the startup stage and success is strongly associated with detailed planning, which is one of the attributes of an entrepreneur [24,25], on a study of SMEs in Finland, also concluded that, the need to achieve, job satisfaction and quality of life of entrepreneurs play a pivotal role in the success of their businesses. This confirms the much held idea in the South Pacific Island, where the success of SMEs is pinned to management skills, entrepreneur competence, access to finance and institutional support [6].

Research by [26], on the impact of entrepreneurial skills and entrepreneurs' character traits on the growth of SMEs in Ghana, indicated a positive correlation between the two, for it was revealed that, entrepreneurial character, access to finance and other factors impact positively on the firms' growth. This findings is in line with earlier report by [27] who discovered that, entrepreneurial orientation was positively associated with opportunity alertness and firm's growth.

While research by [28] indicated that, experience of the owner/manager, the state of the competition and access to credit, are three main characteristics of entrepreneur that correlates positively with employment generation and growth in general. On the other hand, [29] posited that, personal characteristics of entrepreneurs (education, experience, sex, gender) increase the performance of firm [30].

Entrepreneurial characteristics acquired through education, be it formal or informal has the tendency of increasing entrepreneur's productivity through knowledge management and innovation [31].

According to [32] entrepreneurs that exhibit high innovativeness and proactiveness represent entrepreneurial firms. Whiles risk taken propensity by entrepreneurs were also associated with performance [23,21].

Though several entrepreneurs may exhibit the same or similar competences, they may differ in strength, direction and performance [33]. Studies conducted by [34] on the personal background of some entrepreneurs which includes gender, age, education, experience, and marital status, revealed that male entrepreneurs outperformed their female counterparts, though the issue of gender still remain ambiguous [35,4].

2.2 Need to Achieve and SMEs Growth

The individual's desire for significant accomplishment, setting and meeting target, and: "intense, prolonged and repeated efforts to accomplish something difficult, to work with singleness of purpose towards a high and distant goal. To have the determination to win. Prime among psychological drives that motivate the entrepreneur is a high need for achievement usually identified as N-Ach. This need can be defined as a want or drive within the person that motivates behavior towards accomplishment." [36]. Need for Achievement is related to the difficulty of tasks people choose to undertake. Those with low N-Ach may choose very easy tasks, in order to minimize risk of failure, or highly difficult tasks, such that a failure would not be embarrassing. Those with high N-Ach tend to choose moderately difficult tasks, feeling that they are challenging, but within reach [37].

This personality trait is characterized by an enduring and consistent concern with setting and meeting high standards of achievement. This need is influenced by internal drive for action (intrinsic motivation), and the pressure exerted by the expectations of others (extrinsic motivation). Measured with the Thematic Apperception Test (TAT), need for achievement motivates an individual to succeed in competition, and to excel in activities important to him or her. Research conducted by [20]

involving 23 entrepreneurs, established a positive relationship among need to achieve, entrepreneurial activity and growth of firms [16] also found a strong positive relationship between the need to achieve and firm growth. Therefore, we offer the following proposition.

H1: There is significant positive relationship between need to achieve and SMEs growth and that, the level of growth is higher in firms where entrepreneurs show higher aptitude to achieve.

2.3 Innovation and SMEs Growth

Innovative entrepreneurship has been reckoned as the major driver of business and economic growth [38] as a result entrepreneurs must be innovative. Innovation in corporate or larger firms requires more innovative entrepreneurs and intrapreneurs to act as agent of change, due to the dynamic and competitive nature of the business field. [39,40,41] and lately by [42] acknowledged that, due to the peculiarity highly innovative environment and high degree of uncertainties about customers, competitors, products and the market, entrepreneurs must be innovative to be able to survive the heat. This assertion was backed by [43].

Recognition have also been given to the opportunities and the pursuit of those opportunities by entrepreneurs with innovative character in pursuance of firms growth [44], which conforms to [45] idea on entrepreneurship as identification and pursuance of innovative opportunities for higher performance. Whiles [46], have also acknowledged the relationship between knowledge and growth on one hand, and entrepreneurship and growth on the other and also how entrepreneurship, innovation and knowledge are interrelated, with innovative entrepreneur diffusing the innovation.

Schumpeter believed that innovation is considered as an essential driver of competitiveness and economic dynamics and therefore anyone seeking profit must innovate. [47]. Therefore an entrepreneur should be an open minded person, willing to explore changes rather than to resist it, ability to sense and grab opportunities before others, these were the premises of Drucker's innovation [45]. Therefore, based on this theoretical background, we propose the following hypothesis.

H2: There is significant positive relationship between entrepreneurial innovativeness and SMEs growth and that the level of growth is higher in firms where entrepreneurs show high aptitude of innovation.

2.4 Calculated Risk Taking and SMEs Growth

Risk taking propensity is a one of the important character trait of an entrepreneur. Entrepreneurs are opportunity seekers, face uncertainties are therefore are bound to take risk, if they want to succeed [44]. Successful entrepreneurs are not gamblers. When they decide to participate in a venture, they do so in a very calculated, carefully thought-out manner. They do everything possible to get the odds in their favor, and they often avoid taking unnecessary risks. These strategies include getting others to share inherent financial and business risks with them for example, by persuading partners and visitors to put up money, creditors to offer special terms, and suppliers to advance merchandise.

To be ambitious without risk taken as an entrepreneur may lead to failure, since good and quick decisions may not be taken [48]. Research by [49] established a positive link between entrepreneurs' high level of risk taken propensity and the growth of firms. Such entrepreneurs with high risk taken propensity do not fear to take action concerning the growth of their businesses [50,51,52,53]. Entrepreneurs with weak risk taken propensity due fear of losing their capital do not experience growth and are crash out in competition [54,43]. Nevertheless, based on the relationship between risk taking propensity and growth ambition, we propose a positive impact of risk taking propensity on firm growth.

H3: There is significant positive relationship between calculated risk taken and SMEs growth and that the level of growth is higher in firms where entrepreneurs undertake calculated risk.

2.5 Team Building and SMEs Growth

The desire for independence and autonomy does not preclude the entrepreneur's desire to build a strong entrepreneurial team. Most successful entrepreneurs have highly qualified, well-motivated teams that help handle the growth and development of the venture. In fact, while the

entrepreneur may have the clearest vision of where the firm is (or should be) headed, the personnel are often more qualified to handle the day-to-day implementation challenges. Yet Entrepreneurs sometimes perform better when they are in a team of two or more professionals where ownership is shared [55,56] and [57]. It was further established by [58] and [57] that the failure rate of sole entrepreneurs are higher than jointly owned. This assertion has been supported by [56] where they indicated that team ventures had higher revenue, higher turnover, and higher income and outperformed sole entrepreneur ventures.

An entrepreneur team which comprises more professionals such as accountant, marketers, sales experts and the like, help reduce the risk of failure since team members can inject creativity and dynamism which may be absent in a single entrepreneur [59,60,61]. Several researches including that of [62], showed that there is a positive correlation between team building and venture performance. An entrepreneur who possesses team qualities and initiate it, stand the chance of growing their business. Therefore, we offer the following proposition.

H4: There is significant positive relationship between team building and SMEs growth and that the level of growth is higher in firms where entrepreneurs encourage team building spirit.

2.6 Aggressiveness and SMEs Growth

Been aggressive as an entrepreneur is the ability to challenge competitors to have upper hand over them, in entry and positioning so as to outperform rivals in the industry [22]. It is a strong strategy for start-ups as it helps overcome the dominance of the existing competitors in the industry. This involve challenging marketing strategies of rivals to acquire market share [63]. As put across by [33], been aggressive is to assume a combative and defensive posture in responsive to rivals action and inaction.

Entrepreneurs are not intimidated by difficult situations. In fact, their self-confidence and general optimism seem to translate into a view that the impossible just takes a little longer. Yet they are neither aimless nor foolhardy in their relentless attack on a problem or an obstacle that is impending business operations.

If the task is extremely easy or perceived to be unsolvable, entrepreneurs will often give up

sooner than others. Simple problems bore them, unsolvable ones do not warrant their time. Moreover, although entrepreneurs are extremely persistent, they are realistic in recognizing what they can and cannot do and where they can get help in solving difficult but unavoidable tasks.

Competitive aggressiveness is an important mechanism to explain the aggressive competition of the markets, support firms to create effective strategies in a rigorous environment, and promote unique competitiveness and superior profitability [64].

SMEs with the stronger level of competitive aggressiveness actually promote potential capabilities and competencies to gain higher performance and receive better competitiveness. Thus, competitive aggressiveness is likely to have a positive and direct influence in competitiveness [65]. Consequently, we offer the following proposition.

H5: There is significant positive relationship between competitive aggressiveness and SMEs growth and that, the level of growth is higher in firms where entrepreneurs show higher competitive aggressiveness.

2.7 Performance and SMEs Growth

The character traits of entrepreneurs contribute to the SMEs growth results from an increase in firms 'sales, employment, and profit among other factors [66]. Research by [67], on the impact of entrepreneur character traits on the growth of SMEs in developing countries, shows a significant positive relationships between psychological traits and entrepreneurial orientation, and further revealed a positive firm's growth. This findings is in line with the earlier study by [26] which concluded that, entrepreneurial traits assist SMEs to generate growth and development of new businesses in Nigeria, since such qualities results in proper book keeping and enhances access to external finance.

Another study by [68,11], indicate that an entrepreneur's personality traits such as, need to achieve, risk taken, aggressiveness, innovation, and personal background influences firms' growth positively.

[69], is of the view that firm's growth opportunities are related to its organizational production activities which revolves around the entrepreneur, especially with SMEs.

In reorganizing the significant role the entrepreneurial traits play in the growth of businesses, [61], in defining entrepreneurship, highlighted on the entrepreneurs' ability to build a team spirit as a complement to their on skills and talent, while [45] was of the view that, the entrepreneurs' character traits are important to the growth of business, which can be learnt, and acquire, for it is not a magic.

There is every indications that, for small firms, growth is influence by personal aspiration and dynamisms of the entrepreneur, yet studies conducted by [70] indicated that, less than 20% of entrepreneurs of small firms in Netherlands aim to grow their businesses. According to [68] there are other stronger factors rather than the character traits of the entrepreneur, when it comes growth issues of the firm. This conflicting findings must be settled through in-depth research into the actual determinates of SMEs growth Islam [71].

2.8 Entrepreneur Characteristics and SMEs Growth Model

The entrepreneur's character traits (need to achieve, innovation, calculated risk taken, team building and aggressiveness), affects the strategic activities of the entrepreneur, which in turn impacts on the SMEs growth positively. Our proposed model of entrepreneur characteristics and SMEs Growth, incorporating the propositions outlined is presented in the Fig. 1.

3. METHODOLOGY

The National Board for Small Scale Enterprise has a data base of over 5000 registered SMEs in

the five Regions of Ghana, out of these, a sample size of 500 SMEs were selected and reached with questioners, interviews and observations on quota sampling (10% quota) within the administrative divisions of the selected Regions.

3.1 Research Setting

This research work was conducted in the Five Regional capital of Ghana, with a population of 10.6 million and over 5000 registered SMEs (Population census 2012, NBSSI 2010).

The questionnaire covered four areas:

1. Demographic and industry/ business information
2. Entrepreneurial characteristics
3. General management issues
4. General performance/growth of the firm

These measures were consistent with the research objectives and the hypotheses. Potential respondents were approached in their business locations and questionnaires used to register their responses.

3.2 Target Population

The population for this study was made up of Small and Medium size Enterprises (SME's) in the building, construction, mining and manufacturing operating in Ghana. A total of five hundred SME operators in the five Regions were randomly selected from the group for the research. The focus was however limited to Regional capitals where SMEs are concentrated and are thriving.

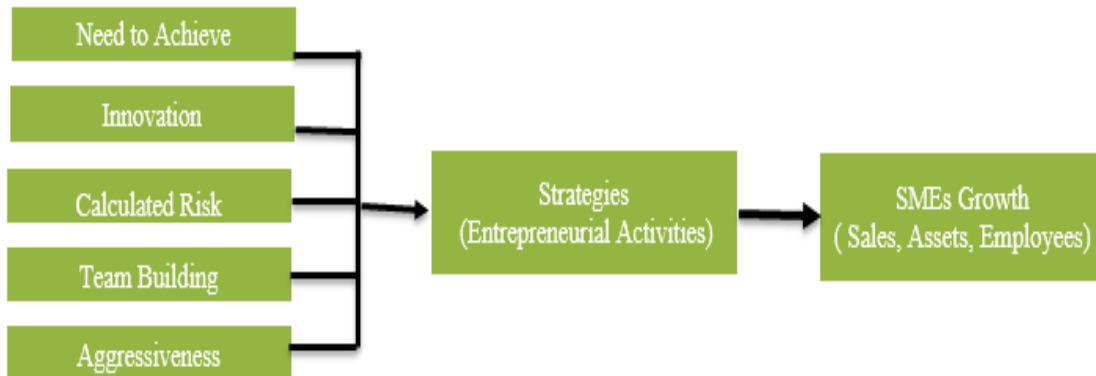


Fig. 1. Entrepreneur character traits and SME growth model

3.3 Sample Size

A sample of 500 SMEs in Ghana were randomly selected from the regional capitals of Ashanti, Greater Accra, Central, Western and Northern Regions. These Regions are considered as the power house of Ghana's SME and hence the sample size is a true reflection of the activities of SMEs in the country. This sample was taken from the population of the manufacturing and retailing SMEs in the regions through the assistance of the National Board for Small Scale Industries, the mouth piece of SMEs in Ghana.

3.4 Analytical Methods

Since so many variables were identified in this study, **factor analysis** was first used in grouping the various factors which affect innovativeness, calculated risk, need to achieve, competitive aggressiveness and team building of SMEs. Also the **correlation analysis** was employed to assess how the growth of SMEs correlates with the other characteristics variables. Subsequently, an **ordinal logistic regression** was used to measure the impact of these factors on SMEs growth.

4. RESULTS

4.1 Factor Analysis Interpretation

The Bartlett's test of sphericity is used to test for the adequacy of the correlation matrix, i.e., the correlation matrix has significant correlations among at least some of the variables. If the variables are independent, the observed correlation matrix is expected to have small off-diagonal coefficients. Bartlett's test of sphericity tests the hypothesis that the correlation matrix is an identity matrix, that is, all the diagonal terms are 1 and all off-diagonal terms are 0. If the test value is large and the significance level is small ($p < 0.05$), the hypothesis that the variables are independent can be rejected. In the present analysis, the Bartlett's test of sphericity yielded a value of 14898.633 and an associated level of significance smaller than 0.000 ($p < 0.05$). Thus, the hypothesis that the correlation matrix is an identity matrix is rejected.

The communalities table presents the communality of each variable (i.e., the proportion of variance in each variable accounted for by the common factors). Since the principal components method of factor extraction was

used, as many factors as possible were computed as there are variables. When all factors were included in the solution, all of the variance of each variable was accounted for by the common factors. Thus, the proportion of variance accounted for by the common factors, or the communality of a variable is 1 for all the variables.

Table 2, the total variance explained presents the number of common factors computed, the eigenvalues associated with these factors, the percentage of total variance accounted for by each factor, and the cumulative percentage of total variance accounted for by the factors. Although twenty factors have been computed, it is obvious that not all twenty factors will be useful in representing the list of twenty variables. In deciding how many factors to extract to represent the data, it is helpful to examine the eigen-values associated with the factors. Since fifty (50) variables were considered for this study, the criterion of retaining only factors with eigenvalues of 3 or greater was used and the first five factors were retained for rotation. These five factors account for 13.012%, 12.008%, 9.927%, 8.437% and 7.265% of the total variance, respectively. That is, almost 50.65% of the total variance is attributable to these three factors. The remaining forty five (45) factors together account for only approximately 49.35% of the variance. Thus, a model with five factors may be adequate to represent the data. From the Scree plot, it again appears that a five-factor model should be sufficient to represent the data set.

The pattern matrix shows the loadings of each of the variables. This shows the variable loadings on the three (3) factors with eighteen variables loading more than 0.35 on component 1, five variables loading on components 2 and 3 respectively. Now critically looking through the matrix for the highest loading variables on each component to identify and label the component. Here, the main loadings on component 1 are variables: *there is a strict procedure for decision making, all staff are involved in decision making, there is a clear role for each staff, and meetings are held with loadings 0.936, 0.930, 0.917 and 0.916 respectively. However, the main loadings on component 2 are variables: Office accommodations are divided according to classes and owner(s) is/are decision makers with loadings 0.870 and 0.843 respectively. Also, the main loading on component 3 are variables: number of employees are more than ten and the*

customer base is large with loadings 0.936 and 0.619 respectively.

The main loadings on component 1 are variables: *I take my time to assess pros and cons before taken a decision, I adapt to current and future changes, I believe in having lunch and snacks together with all staff, Business is separate from personal issues, New technology enhances productivity, I review the strategic plan often, Uniforms and tags are used to identify staff on class and grade, Looses are associated with bad or failed opportunities and Every staff has a clear role to play*, with loadings 0.842, 0.801, 0.747, 0.728, 0.720, 0.664, 0.615, 0.583 and 0.460 respectively. The main loadings on component 2 are variables: *I follow the strategic plan of the business, Appraisals are made on individual performances, I reward staff when targets are met, I use every opportunity to win, I do not rest until targets are met, Matters only the victory, non-important the way to reach, New markets are always been sort for, I use the most effective and efficient distribution channels and Good opportunities reward*, with loadings 0.801, 0.722, 0.716, 0.620, 0.612, -0.604, 0.567, -0.532, 0.518 and -0.462 respectively. The main loadings on component 3 are variables: *I am not afraid to be reprimand by staff or any superior, I use new approaches in solving a problem, The is a lay down rules in decision making, In other my goal it is necessary to press ahead without looking outside and each member has specific role to play towards the goals of the business*, with loadings -0.761, -0.754, -0.739, 0.545 and -0.497 respectively. The main loadings on

component 4 are variables: *I feel satisfaction if I succeed in causing damage to my rivals, When I consider my works are wrong I say to them, I fear venturing into more risky areas even though profit may be high, I try to be the first to introduce a new product, 'To press ahead' is the purpose in my life, Losers in business are failures and Succeeding, to me is "do/die"*, with loadings 0.771, 0.769, 0.634, 0.583, -0.524, 0.521, and -0.444 respectively. The main loadings on component 5 are variables: *Staff are free to share their ideas and feelings with me, I promote participation by the team in key decision making, I believe in product differentiation as a marketing strategy, I do not destroy my rivals but I challenge them and make sure I win, I research into other people's patent and I believe in try and error*, with loadings 0.741, 0.713, 0.602, 0.582, -0.471 and 0.466 respectively. Thus the first component was identified as organization's **calculated risk**, the second component identified as the organization's **innovation**, the third component identified as the organization's **need to achieve**, the forth component identified as the organization's **competitive aggressiveness** and the fifth (last) component identified as the organization's **team building**.

4.2 Correlation Matrix

Table 1 shows the relationships between the dependent variable (SMEs growth) and the independent variable (Need to achieve, innovation, calculated risk, team building and aggressiveness).

Table 1. KMO and Bartlett's test

Kaiser-Meyer-Olkin measure of sampling adequacy	Bartlett's test of sphericity		
	Approx. chi-square	df	Sig.
0.713	14898.633	190	.000

Table 2. Total variance explained

Component	Initial eigenvalues			Extraction sums of squared loadings		
	Total	% of variance	Cumulative %	Total	% of variance	Cumulative %
1	6.506	13.012	13.012	6.506	13.012	13.012
2	6.004	12.008	25.021	6.004	12.008	25.021
3	4.963	9.927	34.947	4.963	9.927	34.947
4	4.219	8.437	43.384	4.219	8.437	43.384
5	3.633	7.265	50.650	3.633	7.265	50.650

Table 3. Spearman's rho correlation coefficients

			Innovation	Need	Risk	Team	Aggressive	Growth
Spearman's rho	Innov.	Correlation	1.000	.114	.001	-.040	.284**	.300**
		Sig. (2-tailed)	.	.063	.986	.516	.000	.000
	Need	Correlation	.114	1.000	.190**	-.212**	-.256**	-.380**
		Sig. (2-tailed)	.063	.	.002	.001	.000	.000
	Risk	Correlation	.001	.190**	1.000	-.232**	-.126*	-.520**
		Sig. (2-tailed)	.986	.002	.	.000	.040	.000
	Team	Correlation	-.040	-.212**	-.232**	1.000	-.330**	.209**
		Sig. (2-tailed)	.516	.001	.000	.	.000	.001
	Aggr.	Correlation	.284**	-.256**	-.126*	-.330**	1.000	.360**
		Sig. (2-tailed)	.000	.000	.040	.000	.	.000
	Growth	Correlation	.300**	-.380**	-.520**	.209**	.360**	1.000
		Sig. (2-tailed)	.000	.000	.000	.001	.000	.

** Correlation is significant at the 0.01 level (2-tailed)

* Correlation is significant at the 0.05 level (2-tailed)

From Table 3, entrepreneurial innovativeness has about 0.3 correlation with the SME growth. This indicates that there is a weak relationship between entrepreneurial innovativeness and the SME growth. Thus innovation correlates positively with SMEs growth and the correlation is significant at $p < 0.01$. It can also be observed that -0.38 Spearman's rho correlation coefficient shows a weak negative relationship between *need to achieve* and SMEs growth. At $p < 0.01$, there is sufficient evidence to conclude that the correlation presence between *need to achieve* and SMEs growth is significant. Also, calculated risk taken by entrepreneur's has about -0.52 correlation with SMEs growth. This indicates that there is a moderate relationship between entrepreneurial innovativeness and the SME growth. Thus calculated risk taken by entrepreneur's correlates negatively with SMEs growth and the correlation is significant at $p < 0.01$. Moreover, SMEs growth has about 0.209 correlation with team building spirit of entrepreneur's. This indicates that there is a weak relationship between SMEs growth and team building spirit of entrepreneur's. Therefore SMEs growth correlates positively with team building spirit of entrepreneur's and the correlation is significant at $p < 0.01$. Further, SMEs growth has about 0.306 correlation with competitive aggressiveness spirit of entrepreneur's. This indicates that there is a weak relationship between SMEs growth and competitive aggressiveness spirit of

entrepreneur's. Therefore SMEs growth correlates positively with competitive aggressiveness spirit of entrepreneur's and the correlation is significant at $p < 0.01$.

4.3 Regression Analysis

Table 4 shows the analysis of ordinal logistic regression. The analysis was run to found out the impact of the predictor variables (Need to achieve, innovation, calculated risk, team building and aggressiveness) on the criterion variable (SMEs Growth).

From the observed significance levels ($p < 0.05$) in Table 4, it can be seen that all five factors; innovation, need to achieve, calculated risk, team building and competitive aggressiveness of SMEs are statistically significant in the model. Therefore these factors are all relevant in contributing to the growth of SME firms. Meanwhile, entrepreneurs who strongly agree to innovation are more likely to assign higher ratings on SMEs growth than their counterparts who do not innovate. Also, entrepreneurs who strongly agree on the *need to achieve* are more likely to assign higher ratings for SMEs growth than entrepreneurs who think otherwise. Again, entrepreneurs who agree on taking *calculated risk* are more likely to assign moderate ratings for SMEs growth than entrepreneurs who strongly agree.

Table 4. Ordinal logistic regression parameter estimates

		Estimate	Std. error	Wald	Df	Sig.	95% confidence interval	
							Lower bound	Upper bound
Threshold	[Need to A = 1]	2.576	.175	507.5	1	.007	4.922	9.770
	[Need to A =2]	4.987	1.965	346.5	1	.007	18.765	78.791
	[Need to A =3]	2.953	2.702	309.2	1	.099	24.270	98.364
	[Need to A =4]	1.24	.435	273.5	1	.088	42.396	48.396
	[Need to A =5]	0 ^a	.	.	0	.	.	.
	[Innovation =1]	51.399	4.377	337.7	1	.005	1678.471	1688.673
	[Innovation =2]	34.987	5.965	346.5	1	.007	1078.765	1708.791
	[Innovation =3]	12.953	3.702	309.2	1	.099	1824.270	1898.364
	[Innovation =4]	1.24	2.435	273.5	1	.088	20486.396	20486.396
	[Innovation =5]	0 ^a	.	.	0	.	.	.
Location	[Risk =3]	1.578	3.356	355.6	1	0.50	34.666	137.823
	[Risk =4]	0 ^a	.	.	0	.	.	.
	[Team=1]	72.800	6.383	638.3	1	.003	113.997	169.396
	[Team =2]	39.020	2.634	263.4	1	.006	154.079	166.040
	[Team=3]	0 ^a	.	.	0	.	.	.
	[Aggr.=1]	-21.402	1.413	141.3	1	.005	-629.057	623.253
	[Aggr.=2]	31.878	.000	.	1	.074	31.278	39.878
	[Aggr.=3]	0 ^a	.	.	0	.	.	.
[Aggr.=4]	0 ^a	.	.	0	.	.	.	

Link function: Logit.

a. Redundant parameter

b. Dependent variable: SMEs growth

Moreover, entrepreneurs who strongly agree on *team building* are more likely to assign higher ratings for SMEs growth than entrepreneurs who just agree. Further, entrepreneurs who strongly agree on the *competitive aggressiveness* are more likely to assign higher ratings for SMEs growth than entrepreneurs who just agree.

The assumption that the regression coefficients are the same for all three categories is tested using the test of parallel lines. If you reject the assumption of parallelism, you should consider using multinomial regression, which estimates separate coefficients for each category. Since the observed significance level in Table 5 is large ($p > 0.05$), it implies that there is no sufficient evidence to reject the parallelism hypothesis. Therefore we conclude that the regression coefficients are the across response categories.

Before proceeding to examine the individual coefficients, an overall test of the null hypothesis that the location coefficients for all of the variables in the model are 0 must be ascertained. Therefore, in Table 6, it can be seen that the difference between the two log-likelihoods with Chi-square distribution has an observed significance level of less than 0.05 ($p < 0.05$). This means that we can reject the null hypothesis that

the model without predictors is as good as the model with the predictors. Therefore we conclude that the model without predictors is not as good as the model with the predictors.

Table 5. Test of parallel lines

Model	-2 Log likelihood	Chi-square	Df	Sig.
Null hypothesis	387.092			
General	264.088	60.872	12	.308

In Table 7, it be observed that the observed significance level for the goodness-of-fit statistics is large ($p > 0.05$), this means that we fail to reject the null hypothesis that the model fits the data set. So we can conclude that the model fits the data set used at 95% confidence level.

There are several-like statistics that can be used to measure the strength of the association between the dependent variable and the predictor variables. The Nagelkerke R-square value of 93.6% in Table 8 implies that most of the variability in SMEs growth (response) are explained by the predictors. There is however about 6.4% of the variability which is unaccounted for, which may be due to errors.

Table 6. Model fitting information

Model	-2Log likelihood	Chi-square	Df	Sig.
Intercept only	314.423			
Final	3.876	31.547	12	.000

H_0 : The model without predictors is as good as the model with the predictors

H_1 : The model without predictors is not as good as the model with the predictors

Table 7. Goodness-of-fit

	Chi-square	Df	Sig.
Pearson	170.706	12	.107
Deviance	196.962	12	.101

Table 8. Pseudo R-square

Cox and Snell	Nagelkerke	McFadden
.692	.936	.877

5. CONCLUSIONS

It was found that the factor analysis identified five characteristics factors from the list of variables regarding growth processes in respect of SMEs. Thus the first component was identified as organization's *calculated risk*, the second component identified as the organization's *innovation*, the third component identified as the organization's *need to achieve*, the fourth component identified as the organization's *competitive aggressiveness* and the fifth (last) component identified as the organization's *team building*. Again, there was generally a weak positive correlations between SMEs growth and factors such as innovation, team building and competitive aggressiveness of entrepreneurs. However, there was a moderate negative correlations between SMEs growth and the need to achieve as well as calculated risk. Moreover, all five factors; innovation, need to achieve, calculated risk, team building and competitive aggressiveness of SMEs were statistically significant in the model. Therefore these factors are all relevant characteristics which contribute to the growth of SME firms.

5.1 Implications of the Study to SMEs in Ghana

The SMEs in Ghana and most developing countries must pay particular attention to the development of the character traits of entrepreneurs as well as their employees, since

this study have proven that, there is a correlation between entrepreneur characteristics and SMEs growth. Entrepreneurs must attend workshops and also learn from their peers to build a strong entrepreneurial character for effective growth of their businesses. There is also the need to introduce Entrepreneurship Education at the early stages of the academic structure.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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