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## Online First Articles

### Exploratory factor analysis on drivers of firm's growth among construction SMEs in Ghana

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The growth of construction SMEs is imperative if an economy is to develop. Numerous factors influence the growth of construction SMEs due to the nature of their operation. Their growth can also be driven their activities which can be classified as internal or external. This study explored the organic (internal) factors that drive the growth of construction SMEs. To achieve the goal of the study, the exploratory factor analysis (EFA) technique was adopted. The study used a sample size of 228 out of the 315 questionnaires (a response rate of 72.3%) which were administered to a population consisting of firm owners, SME managers and construction industry professionals engaged by SMEs operating within the ten regional capitals in Ghana. The study established entrepreneurial features, firm characteristics, the business environment and stakeholder involvement as the vital factors which influence the growth of construction SMEs. Findings from the study ranked stakeholder involvement (SKI) as the most important factor in the growth of construction SMEs and the business environment of a firm (BEF) as the least important. Given the explored factors which influence the growth of construction SMEs in Ghana, the results have established their respective values for both KMO and Bartlett's Test of Sphericity which makes the findings fit for further analytical test on firm's growth.

**Keywords:** analysis construction, firms, growth, small and medium size

#### Introduction

The growth of construction SMEs is imperative if a nation is to develop and meet the infrastructure needs of its economy. The importance and contribution of construction SMEs to economic growth have been long recognized as key in the literature. The proposition is in agreement with the study by Bowen, Pearl, and Akintoye (2007) which stressed the foundation of the sector in terms of a country's plan for transformation and development. Mahemba (2011) supported the view that in most economies SMEs have a vital role in the job creation, stimulation of innovation and new products, thus contributing to growth. Similarly, Ofori and Toor (2008) augmented the position that SMEs are essential to the structure of the construction industry due to the economic projects these firms embark on which are widely dispersed geographically. In Ghana, SMEs contribute at least half of the national output and employ around 60% of the labour force (The Business and Financial Times, BFT 2010). The economic indicators buttresses how important the SME sector is to the Ghanaian economy. Further, they explain that growth within the SME sector results in a direct impact on the economy. A firm's growth is an organizational outcome arising from the specific resources, operations and capacities. Gopinath (2012) defined firm's growth as increased indefinite features such as sales, employment or profit between double points in time, and asserted they are significant determinants of a firm's performance. Massey et al. (2006) supported that company's growth is not consistent amongst SMEs. Therefore, the growth trend can change over time. Growth within firms such as market position, quality of the product and goodwill of the customers can also be measured qualitatively. Moreno and Casillas (2007) demonstrated that the growth of firms varies and may be measured by peaks in sales and employee growth over a particular period. In line with this assertion, Coad (2007)

stressed that a firm's growth opportunities are highly related to the company's production and managerial activities. Gopinath (2012), however, postulated that a firm's growth depends on the prevailing macroeconomic conditions affecting the firm backed by the microeconomic issues set at the organizational level. Despite the significant impact of the construction SMEs within the Ghanaian economy, the undesirable performance of these firms in most developing countries results in their failure to growth (Gyadu-Asiedu 2009). Based on this premise, and because of the overwhelming role these SMEs play in the socioeconomic requirements of a nation, a study on the factors of growth of construction SMEs needs to be explored to ascertain a reliable growth pattern. Similarly, recognizing the growth factors of construction SMEs that act as a pivot on which the developmental activities of a country spins is significant. This study essentially elucidates the factors which influence the internal growth of construction SMEs as a result of the general macroeconomic issues within firms.

#### Small- and medium-sized construction firms

The construction industry is not merely a critical constituent of a nation's economy but also an essential factor in the eminence of people's lives and the capability of the government to accomplish many of its policy objectives (Bosher et al. 2007). The sector comprises a cluster of firms that operate under the categories of micro, small to medium sized and large. The sector, however, is dominated by the small- to medium-sized firms (SMEs). These SMEs are engaged in construction activities such as altering, erecting, repairing, demolishing, civil engineering works and other similar functions. The operation of the SMEs also embraces assembling, installation on-site prefabricated components, building and other engineering services. Dlungwana and Rwelamila (2004) argued that construction

SMEs undertake specialist work outsourced by large construction firms through a subcontract arrangement. Also, should the SMEs lack a specifically needed skill to execute a unique section of a project, it merely outsources that part to a subcontractor with the specialized skill (Dlungwana and Rwelamila 2004). Definitions of construction SMEs vary from one country to another. Small and medium construction firms do the majority of the actual work in many construction industries but often receive the least attention. Although there are a variety of definitions attached to the SMEs globally, SME construction firms however fall under the category stressed in the study by Dlungwana and Rwelamila (2004) this widespread definition. Nevertheless, the most commonly used definition for these SMEs in Ghana is based on the criterion of the number of employees (Avevor 2016). Table 1 illustrates the adopted definitions of SMEs in Ghana.

### Drivers of firm's growth

The growth of SMEs depends utterly on the policies set out by the firms supported by external forces acting on them. Zhou and De Wit (2009) hypothesized that factors that determine a firm's growth are classified into three integrated themes namely: organizational, environmental and individual determinants. According to Triki et al. (2011), one of the key drivers of sustainable growth in developing countries is the growth and productivity of firms. Hashi and Krasniqi (2011), on the other hand, recognized that the determinants of the growth of SME are grouped into three categories, namely factors related to the entrepreneurial features of the firm, those linked to other features of the firm and factors related to the business environment within which the firm operates.

### Entrepreneurial features

The internal activities of a firm emanating from the entrepreneurial features impact not only on the internal growth of the firm, but also on the economic growth of the nation

(Kritikos 2014). This is because entrepreneurs often create new technologies, develop new products and open new markets that drive growth in their firms and the whole economy. According to Barringer and Bluedorn (1999), entrepreneurs are described as individuals who discover the environment, discover the opportunities and exploit them after appropriate evaluation. Hence, entrepreneurs also transfer their entrepreneurial skills and features to the firm to make value. Entrepreneurial features depend on the features of the person or persons that provide the key resources used in establishing the business.

The literature on strategic entrepreneurship in a study by Moreno and Casillas (2007) suggests that a firm's productivity and growth rely on the owner or entrepreneur's behaviour. Further, the study stressed that the owner or entrepreneur's entrepreneurial behaviour that tends to reflect on the firm's features are determined by the owner or entrepreneur's knowledge, skills and competencies. These unique characteristics allow some entrepreneurs to enter profitable niches and enjoy sustained performance which brings about the growth of their firms. There is sufficient evidence to suggest that the ambition of owners to innovate as an entrepreneurial feature of a firm is crucial to the growth of the firm. For instance, Shane (2009) emphasized that a large majority of firms that have no growth ambition to innovate do not survive within the industry. This desirable quality of entrepreneurs is vital. However, this feature may not necessarily result in the actual growth of a firm. Personal traits, which are mostly intrinsic such as being passion driven and having the ability to take risks and withstand the fear of uncertainty and potential failure, amongst others, are also important. Thus Zhou and de Wit (2009) stressed that the personality traits contribute more to a firm's growth motivation. On the other hand, Pajarinen, Rouvinen, and Ylä-Anttila (2006) argued that firms with entrepreneurs with higher academic background are more innovative and will use modern methods and models to do business with the firms. For

**Table 1:** Summary of definitions of SMEs commonly adopted in Ghana.

| Item | Source of definition SME  | Definition   |
|------|---|--|
| 1    | Ghana Statistical Service (GSS)   | Firms with less than 10 employees are considered small and those with more than 10 employees are medium or large   |
| 2    | National Board for Small Scale Industries (NBSSI) (1996)  | Micro enterprises are defined as enterprises employing 1–5 workers with fixed assets (excluding realty) of value not exceeding \$10,000 and Small and Medium Scale Enterprises as those that employ 6–29 persons or have fixed assets (excluding realty) of value \$100,000  |
| 3    | Bank of Ghana under the Funds for Small and Medium Enterprises Development (FUSMED) (Boch-Ocansey 1996) | Businesses with assets of 5million cedis and 25 million cedis in constant 1988 prices (US \$20,000 and US \$100,000 equivalent), respectively  |
| 4    | Ayeetey et al. (1994)   | Micro businesses as businesses employing 1–9 persons; small as those employing 10–29 persons; and medium as those employing 30–40 persons  |
| 5    | Mensah (2004)   | Micro businesses as businesses employing up to 5 persons with fixed assets (excluding realty) not exceeding \$10,000 in value; small businesses as those which employ 6–29 people with fixed assets (excluding realty) up to \$100,000 in value; and medium businesses as those which employ 30–99 persons with fixed assets of up to \$1 million in value |
| 6    | Eyiah and Cook (2003), Eyiah (2004)   | Defined construction SMEs as contractors registered in financial classes 2, 3, and 4   |

*Source:* Adapted from Kheni (2008)

**Table 2:** Entrepreneurial features as a factor of firm's growth with its sub-constructs influencing the factor.

| Item                                   | Factor driving firm's growth | Code  | Sub-constructs influencing factor of firm's growth |
|--|------------------------------|-------|--|
| Entrepreneurial features of firm (EFF) |                              | EFF 1 | Strong ambition of owner for growth                |
|  |                              | EFF 2 | Owner's strong entrepreneurial personality         |
|  |                              | EFF 3 | Strong desire to produce high standards            |
|  |                              | EFF 4 | Good development of internal ideas                 |
|  |                              | EFF 5 | Strong human factor capital                        |
|  |                              | EFF 6 | High level of skill amongst employees              |
|  |                              | EFF 7 | High worker motivation                             |
|  |                              | EFF 8 | High level of manager competencies                 |
|  |                              | EFF 9 | Exceptional level of education of entrepreneurs    |

that reason, businesses owned by entrepreneurial teams have a more diversified and skilled resource base and also may have a wider and larger network of contacts, leading them to exploit business opportunities more efficiently and hence exhibit a better performance. Table 2 depicts the summary of sub-factors that influence entrepreneurial features as a factor of a firm's growth.

### **Firm characteristics (FCS)**

The growth of a business depends mainly on the significant features of the firm which to an extent may be classified as tangible or intangible. A firm's characteristics are all inclusive (tangible and intangible) features of the firm which contribute to the firm's growth. The study by Gupta, Guha, and Krishnaswami (2013) supports that firm characteristic include all the relevant constructs in firm growth. Table 3 presents some explored constructs that influence firm characteristics. According to Kirkwood (2009), research indicates that it is growth intentions and desires which are very valued characteristics in terms of actual growth. Wiklund and Shepherd (2003) similarly stressed that studies have established that growth desires are positively related to actual growth. According to the resource-based view of the firm, formulated by Penrose (1959), resources are the primary source of a firm's performance and provide the direction for a firm's strategy as its characteristics. The characteristics, however, include features such as the firm's core values, mission, human capacities and strategic intent, among others as presented in Table 3. Grusenmeyer (2009) postulated that a firm could not have values, beliefs and missions outside the people who make up that business. Therefore, it is important that the company establishes a clear mission and vision comprehensible to all employees to drive the firm towards its growth.

### **Business environment of the firm (BEF)**

The business environment is referred to as the external influence on the firm (Humphrey 2003). The external environment where firms function is considered a crucial issue in their growth Zhou and de Wit (2009). This environment is affected by the government, competitors, institutional stakeholders and other sources external to the firm as summarized in Table 4. The business environment, in some cases, enhances the growth of a firm and brings about the associated yields of growth such as employment creation, facilitation of socioeconomic development and poverty reduction, among others, whereas in other cases, these environments can constrain a firm's growth (Humphrey 2003). Also, it has been found that a firm's performance is determined by the response of the business environment to the actions of the entrepreneurs (Bouazza, Ardjouman, and Abada 2015). A favourable business environment is an important enabler of an effective SME sector and growth (Bouazza, Ardjouman, and Abada 2015). Given growth literature on firms, Wiklund et al. (2009) noted the importance of a firm's environment in facilitating both economies of scale and innovations in promoting growth.

### **Stakeholder's involvement (SKI)**

Gopinath (2012) asserted that the environmental determinants of dynamism, hostility and heterogeneity determine the growth potential of SMEs. To some extent, growth is externally determined by the environment in which the firm functions. This is because the business climate is a multidimensional environment with prevailing institutional and regulatory frameworks as well as the involvement of stakeholders. Stakeholders refer to an individual, a group or an institution with interest in the firm. Similarly, stakeholders can contribute to a firm's growth or success

**Table 3:** Firm characteristics as a factor of firm's growth with its sub-constructs influencing the factor.

| Item                       | Factor driving firm's growth | Code  | Sub-constructs influencing factor of firm's growth |
|----------------------------|------------------------------|-------|--|
| Firm characteristics (FCS) |                              | FCS 1 | High desire of the firm to grow                    |
|                            |                              | FCS 2 | High level of human capital                        |
|                            |                              | FCS 3 | Clear mission                                      |
|                            |                              | FCS 4 | Clear vision                                       |
|                            |                              | FCS 5 | Good management structures                         |
|                            |                              | FCS 6 | Good team  |
|                            |                              | FCS 7 | Good human relations in the firm                   |
|                            |                              | FCS 8 | High level of knowledge of teams                   |
|                            |                              | FCS 9 | Positive culture in the firm                       |
|                            |                              | FCS10 | Good location of the firm                          |

**Table 4:** Business environment as a factor of firm's growth with its sub-constructs influencing the factor.

| Item | Factor driving firm's growth       | Code  | Sub-constructs influencing factor of firm's growth |
|------|------------------------------------|-------|--|
|      | Business environment of firm (BEF) | BEF 1 | High level of strategic competition                |
|      |                                    | BEF 2 | High degree of political stability                 |
|      |                                    | BEF 3 | Good accessibility to financial assistance         |
|      |                                    | BEF 4 | Stable environment                                 |
|      |                                    | BEF 5 | Good availability of critical skills               |
|      |                                    | BEF 6 | Good customer feedback system from customers       |
|      |                                    | BEF 7 | Positive economic changes                          |

and can be internal to the organization or external. Smith and Lewis (2011) stressed that new management theories urge the management of firms to take into consideration not only shareholders' interest, but also stakeholders such as suppliers, employees, project teams and professionals bodies, amongst others, in the context of the construction industry. Smith and Lewis (2011) further emphasized that this becomes vital when a firm's management understands the needs and the interests of their indefinable stakeholders fully. This is primarily the reason why stakeholder engagement is essential. Consequently, this means failure by firms to identify and understand fully their stakeholders' involvement will affect the benefits that emanate from stakeholders and hence impact the growth of the firm. Table 5 shows the explored constructs that affect stakeholder involvement as a factor of growth.

#### **Determinants of SMEs growth in developing countries**

SMEs growth is driven by many determinants in both developed and developing nations. Obeng, Robson, and Haugh (2014), were of the opinion that the growth of SMEs might vary according to firm size, the prevailing economic conditions, the geographical locality and the location of the firm. The recognized factors of SME growth differ in their effectiveness from country to country because of geographical, economic and cultural variances. Some of these factors have been verified as contributing to the success of SMEs in several countries (Isyaku and Chindo 2015). Iniodu et al. (2004) supported that there are also exogenous factors that affect the performance of these SMEs. These comprise government policy intervention, the availability of credit and the existence of sufficient customer demand (Iniodu et al. 2004). Further, Iniodu et al. (2004) asserted that the actual success and growth of most SMEs in developed and developing are pivoted on the access to credit and skills, as well as the capabilities of entrepreneurs to introduce and take-up risks in the presence of various uncertainties. Isyaku and Chindo (2015) however pointed out that SMEs' initiatives towards growth in most economies are usually

constrained by government regulations as well as by a limited demand by consumers for locally needed services and products. Iniodu et al. (2004) also pointed that an unfavourable macroeconomic environment is a principal constraint to the functionality of SMEs. Given the impact made by SMEs in both developed and developing nations regarding socioeconomic development and employment creation, it is imperative to understand the determinants of SMEs' performance, failures and growth. Al-Mahrouq (2010) augments this view in asserting that such an exploration is crucial for developing countries, as the findings could be useful for entrepreneurs and planners in the relevant countries.

#### **Methodology**

Oppenheim (2003) asserted that it is always essential for questionnaires intended to yield research data to be easy to answer in an unbiased way, concise, clear and able to be easily analysed to address the research goal. Consequently, a questionnaire instrument was designed to express the rationale for the study to the respondents. Additionally, to retrieve reliable responses and to aid in measuring the perception of the population regarding the factors impacting a firm's growth, a survey questionnaire was adopted. In all, 315 questionnaires were administered, but only 228 were retrieved for analysis, representing a response rate of 72.3%. The questionnaire elicited responses from the study participants including firm owners, managers of SMEs and construction professionals engaged by SMEs through purposive sampling technique across the entire regional capitals in Ghana. The questionnaire was based on the drivers of or influences on a firm's growth, using a 5-point Likert scale rating. The questions were hinged on the Likert-scale type of degree of extremely influential or not at all influential. It was also based on the extent to which respondents agreed on the indicators which are characterized as drivers of a firm's growth. Further, the questionnaire assured respondents of the confidentiality of the study. The collated data and analysis followed suit by using exploratory factor analysis

**Table 5:** Stakeholder involvement as a factor of firm's growth with its sub-constructs influencing the factor.

| Item | Factor driving firm's growth    | Code  | Sub-constructs influencing factor of firm's growth     |
|------|---------------------------------|-------|--|
|      | Stakeholder's involvement (SKI) | SKI 1 | Good relationship with partners                        |
|      |                                 | SKI 2 | High degree of political stability                     |
|      |                                 | SKI 3 | High level of concern with the environment by the firm |
|      |                                 | SKI 4 | High level of empowerment of employees                 |
|      |                                 | SKI 5 | Strong level of accountability                         |
|      |                                 | SKI 6 | High level of belongingness                            |
|      |                                 | SKI 7 | High standards required by stakeholders                |



**Table 6:** Entrepreneurial features of firm (EFF).

| KMO and Bartlett's Test                         |                                  |
|---|----------------------------------|
| Kaiser-Meyer-Olkin Measure of Sampling Adequacy | 0.791                            |
| Bartlett's Test of Sphericity                   | Approx. Chi-Square<br>Df<br>Sig. |
|   | 740.762<br>36<br>0.000           |

(EFA). The EFA technique was used to explore the elements which constituted the drivers of growth in this study. The statistical package for social sciences (SPSS) version 23 was used to evaluate the Kaiser-Meyer-Olkin (KMO) and Bartlett's test. Also evaluated were the reliability (Cronbach alpha and composite) and validity (convergent and discriminate). Factor analysis is deemed appropriate when the KMO measure of sampling adequacy test index is higher than the satisfactory minimum limit of 0.5 and a desirable limit as 0.8 or greater (Kaiser 1970). Hair et al. (2010) also suggested a KMO cut-off value greater than or equal to 0.7. According to Hair et al. (2010), Bartlett's test with a significance level of less than 0.0001 substantiates the appropriateness of the factor.

#### Analysis and discussions

The analysis of this study was undertaken to reveal the impact of identified factors that influence the growth of construction SMEs in the Ghanaian context.

#### Entrepreneurial features of firm (EFF)

The entrepreneurial features (EFF) of a firm as an independent variable was subjected to an exploratory analytical test. Nine items measured entrepreneurial features as a determinant factor of growth for construction SMEs. The results revealed that the KMO of sampling adequacy as 0.791 suggested that the sample size was indeed satisfactory for factor analysis. Conversely, Bartlett's Test of Sphericity undertaken established a high significance level of 0.00 as illustrated in Table 6. Also, the total initial eigenvalues greater than 1 were determined from the selected factor as depicted in Table 6.

#### Firm's characteristics (FCS)

Exploratory factor analysis shown in Table 7 on a firm's characteristics as an independent variable of the firm's growth revealed that the KMO was 0.8, higher than the acceptable limit of 0.5, with Bartlett's Test of Sphericity at the significant level of 0.00. This justified the used of factor analysis in the current study and provided confirmation of the factor, as well as its appropriateness, for the model as established by Hair et al. (2010). Also, the eigenvalue of the factor (firm characteristics) was

worked out, and the result was 63.49% of the total cumulative variance while the total extraction was only three variables as shown in Table 7.

#### Business environment of firm

Analysis of the business environment of a firm was conducted using EFA to establish the adequacy of the factor. Eight items were subjected to the analytical test, but only four items were considered fit after extraction as shown in the pattern matrix in Table 8. Further, the KMO of 0.812 was established with a corresponding Bartlett's Test of Sphericity of  $p < 0.000$  shown in Table 8. The Kaiser-Meyer-Olkin Measure of Sampling Adequacy value justified the factor to be used for the test per the threshold established by Hair et al. (2010). Also, the total initial eigenvalues greater than 1 resulted from the determining factor as represented in Table 8.

#### Stakeholder involvement

Exploration factor analysis was conducted to assess the measurement of stakeholder involvement as a construct in a firm's growth. Table 9 shows the KMO of 0.815 with Bartlett's Test of Sphericity of  $p < 0.000$  were obtained. This indicates that the results from the factor analysis were fit to be conducted with the data. Out of the seven items subjected to the analytical test, only three were found adequate. Further, Bartlett's Test of Sphericity undertaken established a high significance level of 0.00 as illustrated in Table 9. Also, the total initial eigenvalues greater than 1 were established of the factor as represented in the pattern matrix in Table 9 which depicts the number of questions extracted .

#### Reliability of the study

The reliability of the study's instrument was measured using Cronbach alpha. Hair et al. (2009) established that Cronbach alpha values higher than 0.7 were considered reliable. In the context of this study, the lowest Cronbach alpha value was 0.750 while the highest was 0.812 as shown in Table 10. This further elucidates that the higher the alpha coefficient, the more reliable the test.

**Table 7:** Firm characteristics (FCS).

| KMO and Bartlett's Test                         |                                  |
|---|----------------------------------|
| Kaiser-Meyer-Olkin Measure of Sampling Adequacy | 0.800                            |
| Bartlett's Test of Sphericity                   | Approx. Chi-Square<br>Df<br>Sig. |
|   | 746.111<br>45<br>0.000           |

**Table 8:** Business environment of firm.

| KMO and Bartlett's Test                          |                    |         |
|--|--------------------|---------|
| Kaiser-Meyer-Olkin Measure of Sampling Adequacy. |                    | 0.812   |
| Bartlett's Test of Sphericity                    | Approx. Chi-Square | 661.864 |
|  | Df                 | 28      |
|  | Sig.               | 0.000   |

**Table 9:** Stakeholder involvement.

| KMO and Bartlett's Test                          |                    |         |
|--|--------------------|---------|
| Kaiser-Meyer-Olkin Measure of Sampling Adequacy. |                    | 0.815   |
| Bartlett's Test of Sphericity                    | Approx. Chi-Square | 595.089 |
|  | Df                 | 21      |
|  | Sig.               | 0.000   |

### Findings and discussion

Findings from this study successfully revealed the explored factors that determine the growth of construction SMEs in Ghana. The significant explored factors used the exploratory factor analytical technique. Further, the explored factors were comprised of the perceptions of the study's participants. Moreso, the exploratory factors divulged the level of factorial validity in a database regarding purported data. Further results established the relations among variables by comprehending the constructs that underline the factors. The factors were: entrepreneurial features of the firm (EFF), firm characteristics (FCS), the business environment of a firm (BEF) and stakeholder involvement (SKI). The outcome of the exploratory factor analytical test retained four factors of the EFF of a firm after the analytical test. Also, two factors for the BEF factor were retained with a Cronbach alpha of 0.750, indicating high reliability of the variable. The FCS variable, on the other hand, retained three factors after subjecting ten factors to exploratory analytical testing. Findings of the study also established that after subjecting the factors to the exploratory analytical test, only three factors were retained. The sSKI factor had a Cronbach alpha of 0.803, indicating a high reliability. All the established KMO for all factors were found suitable and enabled the analytical test to be carried out.

### Lessons learned from the study

Lessons learned from the study include that SMEs are a crucial developmental tool for both developed and developing economies due to their vital impacts. Also, the study revealed that the growth of SMEs in developing nations differs from country to country in their effectiveness due to the geographical, economic and cultural variances. Principally, the lessons learned from SMEs in developing countries revealed that growth leverages on favourable government policy intervention, the availability of credit and the existence of

sufficient customer demand. Additionally, from the Ghanaian perspective, the study discovered that among the dominant factors explored that influence SME growth, stakeholder involvement is most prominent. This lesson suggests that when stakeholders are involved in the activities and operations of SMEs, supported by their valid contributions, goals and strategic intentions, the growth of SMEs could be attained. The study also revealed that the constraints hindering SME growth in developing nations were similar to those in Ghana as a sub-Saharan nation.

### Conclusion

It is vital to comprehend the factors that influence the growth of firms. This study has successfully explored the major factors that determine the growth of construction SMEs in the Ghanaian context based on participants' perception of various relevant variables. It is anticipated that the conclusions of this study will fill a gap in the literature on the vital factors which influence the growth of small and medium-sized construction firms. This study established that construction SMEs in Ghana contribute at least half of the national output and employ around 60% of the labour force, which makes the sector imperative in the growth of the national economy. The study concluded that entrepreneurial features, as a factor that influences a firm's growth, includes the internal activities of the firm. In addition, the study concluded that although the drive and ambition of entrepreneurs is important in the success of construction SMEs, this feature may not necessarily result in their actual growth. The explored sub-factors measuring the entrepreneurial features were found to be suitable and therefore enabled significant values of KMO and Bartlett's Test of Sphericity to be obtained. This study also concluded that a firm's characteristics are all inclusive (tangible and intangible) features of the firm which contribute to the firm's growth. This study supported that firm characteristics include all the relevant

**Table 10:** Reliability of factors measuring firm's growth.

| Construct                                 | Number of Items | Cronbach alpha value |
|---|-----------------|----------------------|
| Business environment of a firm (BEF)      | 4               | 0.750                |
| Entrepreneurship features of a firm (EFF) | 2               | 0.812                |
| Firm characteristics (FSC)                | 3               | 0.798                |
| Stakeholder involvement (SKI)             | 3               | 0.803                |



constructs in a firm's growth. The study further concluded that a firm's characteristics as an independent variable of a firm's growth revealed that the KMO was 0.8, higher than the acceptable limit of 0.5, with Bartlett's Test of Sphericity at the significant level of 0.00. This justified the use of factor analysis in the current study and provided confirmation of the factor for the study as well as its appropriateness. The external environment where firms operate is considered an important issue in their growth. The environment is affected by the government, competitors, institutional stakeholders and other external sources. Stakeholders are institutions or individuals who contribute to a firm's growth or success. Stakeholders are classified as either internal or external. The analytical test conducted to assess the measurement of stakeholder involvement as a construct in a firm's growth revealed KMO of 0.815 with Bartlett's Test of Sphericity of  $p < 0.000$ . This further indicated that the results were adequate and fit to be conducted with the data as well as revealing the importance of stakeholder involvement in the growth of construction SMEs in Ghana. In view of the explored factors which influenced the growth of construction SMEs in Ghana, the results established their respective values for both KMO and Bartlett's Test of Sphericity, which makes the findings fit for further analytical tests on a firm's growth.

#### Disclosure statement

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