

The relationship of personality to cognitive characteristics and SME performance in Tanzania

SME
performance in
Tanzania

667

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Abstract

Purpose – Focussing on the relationship between personality traits and small and medium enterprise (SME) performance in Tanzania's furniture sector, the purpose of this paper is to examine the effect of cognitive characteristics as a mediating variable.

Design/methodology/approach – A total of 300 SMEs in furniture sectors from four different regions in Tanzania were involved in this study. Structural equation modelling approach was used to test simultaneously the direct and the indirect effects of the characteristics of the entrepreneurs on the SMEs performance.

Findings – The findings show that personality traits have a significant influence on SMEs performance through cognitive characteristics.

Research limitations/implications – The study's data were collected from businesses in only one industry (furniture) in Tanzania. Future research may extend the approach to other business sectors.

Practical implications – Since entrepreneurial characteristics are considered an important driver of a country's economic development and performance, it is hoped that governments and sector associations implement suitable policies and incentives to develop an entrepreneurial culture among citizens.

Originality/value – Current knowledge about entrepreneurial characteristics and their relationship with SME performance in developing countries, especially Tanzania, is very limited. The present study suggests that cognitive characteristics are necessary mediators of the link between personality traits and SME performance.

Keywords Tanzania, Personality traits, Cognitive characteristics, SMEs performance

Paper type Research paper

1. Introduction

The question of why some firms grow while others do not is one of the most intriguing in the field of entrepreneurship. Researchers addressing this question have investigated a wide variety of factors potentially influencing firm performance (Storey, 1994; Baum *et al.*, 2001; Lee and Tsang, 2001; Baum and Locke, 2004; Barringer *et al.*, 2005; Aidis and Mickiewicz, 2006; Lim *et al.*, 2008; Danso *et al.*, 2016). These factors range from the entrepreneur's characteristics to issues related to the environment in which these businesses operate. Given the crucial role played by individuals, several studies worldwide have acknowledged the importance of entrepreneurs for small and medium enterprises' (SMEs) growth. Accordingly, Kuratko and Hodgetts (2001) propose that the effectiveness of programmes aimed at developing SMEs depends on a thorough understanding of owner-managers' (entrepreneurs') characteristics. In fact, most SMEs depend on the entrepreneur for their survival and development (Frese, 2000). Without that individual, not much happens in the firm as the entrepreneur is usually responsible for making important decisions concerning products, markets, employees' motivation, expansion plans, and other strategic matters (Frese, 2000). This suggests that a large proportion of the performance difference among SMEs could be explained by individual entrepreneurs (Hall, 1995; Shane, 2007; Zhao *et al.*, 2010; Danso *et al.*, 2016). Little exploration of this topic has focussed on Africa and, in particular, Tanzania. Furthermore, most of the previous research regarding personal characteristics and SME performance has only examined direct effects between the two, reporting mixed results (Cooper *et al.*, 1992; Koh, 1996; Begley and Boyd, 1987; Cromie, 2000; Watson *et al.*, 2003; Pinho and Sampaio, 2014; Asah *et al.*, 2015). Due of these inconclusive results, there has been a shift from personality



traits to a cognitive approach focussing on what entrepreneurs does, as opposed to who they are (Gartner, 1988), with focus, hence, turning to investigate behaviour, motivation, and cognition. Among the modern approaches to have received attention in entrepreneurship are the cognitive models of entrepreneurial behaviour, which focus on understanding how entrepreneurs think and behave and why they act as they do (Delmar, 2000; Zhao *et al.*, 2010; Leutner *et al.*, 2014; Vimolwan and Nusrat, 2017). However, this approach fails to properly address the source of cognitive properties, namely, why certain people develop particular cognitive properties that favour recognising opportunities and, hence, perform better than others (Danso *et al.*, 2016).

Although results about personality traits have been inconclusive, researchers tend to believe that entrepreneurs' characteristics either directly or indirectly influence firm performance. As argued by other entrepreneurship scholars (Hisrich, 2000; Rauch and Frese, 2007b; Shane, 2007; Danso *et al.*, 2016), the use of psychological aspects has found a prominent place in entrepreneurship literature and, hence, cannot be ignored. However, a more comprehensive prediction of venture performance is needed (Naffziger, 1995; Baum *et al.*, 2001; Baum and Locke, 2004; Unger *et al.*, 2009; Ignas, 2012). For instance, it is suggested that personality traits affect actions through other mechanisms (Shane, 2007; Yan, 2010; Hajizadeh and Zali, 2016; Danso *et al.*, 2016). Responding to this idea, Baum *et al.* (2001) constructed a multi-dimensional model aimed at exploring the direct and indirect causes of venture growth. Baum and Locke (2004) later found that entrepreneurs' personality traits affect venture growth through a set of goals, communicated vision, and cognitive characteristics. Similarly, it is suggested that personality traits influence the type of firm that will be created and the way it will be managed. For example, it is demonstrated that entrepreneurs with a high sense of self-efficacy are more likely to engage in entrepreneurial activities, such as taking on the challenge of introducing new products, which, in turn, leads to SME growth (Poon *et al.*, 2006; Adomako *et al.*, 2016; Danso *et al.*, 2016). Given the observed indirect effects of personality traits, scholars have called for investigation of how these might explain business outcomes (Shane and Khurana, 2003; Rauch and Frese, 2007b; Yan, 2010; Ignas, 2012; Leutner *et al.*, 2014; Vimolwan and Nusrat, 2017). This paper will contribute by examining cognitive characteristics' mediating effect on the relationship between owner-managers' personality traits and SME performance.

The present study contributes to the entrepreneurship literature in two important ways. First, regarding developing countries, especially Tanzania, current knowledge about personality traits, cognitive characteristics, and their relationship with SME performance is very limited. This paper builds upon existing knowledge by identifying a few specific entrepreneurial characteristics that, matched with the task of entrepreneurship, can effectively predict SME performance. Second, the study examines the mediating role of cognitive characteristics in the relationship between owner-manager personality traits and SME performance. It thereby offers an explanation of why other researchers have failed to find significance in this relationship. Their failure might be attributed to most of these studies only testing for a direct relationship, and so neglecting to consider an indirect relationship.

The next section presents a review of the relevant literature and the research hypotheses concerning owner-manager personality traits, cognitive characteristics, and firm performance. This is followed by description of the research method, presentation of the study findings, and discussion of the theoretical and managerial implications. Finally, the study's limitations and future research directions are identified.

Literature review

For decades, researchers have sought to identify certain characteristics common to entrepreneurs. Their approach traditionally was grounded in the study of successful entrepreneurs who tend to show similar characteristics, focussing on which of these

characteristics can be used to distinguish them from the general population (Koh, 1996; Littunen, 2000; Rauch and Frese, 2007a; Chell, 2008; Hajizadeh and Zali, 2016; Danso *et al.*, 2016; Robert, 2017). However, researchers such as Gartner (1988) and Timmons (1990) have challenged this approach. Among their key criticisms is researchers' tendency to derive characteristics based on the distinction between entrepreneurs and managers, with the assumption that some characteristics are unique to the former (Chell *et al.*, 1991). In reality, these characteristics may also be common to successful individuals other than entrepreneurs (Robinson *et al.*, 1991; Zhao *et al.*, 2010; Adomako *et al.*, 2016; Robert, 2017). Thus, these characteristics may be important for distinguishing successful from unsuccessful people. Other scholars have raised concerns regarding the instruments used to measure these characteristics (Robinson *et al.*, 1991; Frese, 2007; Vimolwan and Nusrat, 2017). Indeed, they suggest that most of the instruments used to measure personality traits lack convergent validity. Responding to this issue, Rauch and Frese (2007a, b) suggest researchers should use specific traits linked to entrepreneurial tasks. In addition, they should use a questionnaire that has been previously tested (Gartner, 1988; Robinson *et al.*, 1991; Chell, 2008; Zhao *et al.*, 2010; Zhang and Bruning, 2011).

Despite these criticisms, there is some empirical evidence that entrepreneurs' characteristics are among the factors influencing SME performance (Frese, 2000; Krauss *et al.*, 2005; Rauch and Frese, 2007a, b; Zhao *et al.*, 2010; Ignas 2012; Adomako *et al.*, 2016). This study follows the approach of the literature viewing entrepreneurial characteristics as an important determinant of intention to become an entrepreneur, as well as of subsequent firm performance (Rauch and Frese, 2007b; Zhao *et al.*, 2010; Ignas 2012; Adomako *et al.*, 2016; Robert, 2017). More specifically, the study argues that entrepreneurs' characteristics are the primary endowments explaining SME performance in Tanzania. In this study, entrepreneurs' characteristics are divided into personality traits and cognitive characteristics. In this context, researchers generally use the term "personality traits" to depict those specific entrepreneur traits that are related to entrepreneurship tasks (Rauch and Frese, 2007b). Such traits include need for achievement, locus of control, tolerance for ambiguity, innovativeness, risk-taking propensity, and self-efficacy. Furthermore, cognitive characteristics are defined as those characteristics used by entrepreneurs to make assessments and judgements involving SME creation and performance. In line with this definition, four cognitive characteristics, namely, entrepreneurial alertness, attitude towards entrepreneurship, cognitive styles and entrepreneurial motivation were studied in this study.

2.1 Firm performance

The performance of firms can be measured in various ways; the most frequently suggested approaches include sales, employment, assets, market shares, physical outputs, and profits (Shepherd and Wiklund, 2009; Akinboade, 2015). As there is no consensus on the appropriate measures of SME performance, researchers are free to choose one best indicator, create a multiple indicator index, or use alternative measures separately. Due to this "loophole", most researchers choose indicators for which it is easy to gather information, rather than taking important variables into consideration (Shepherd and Wiklund, 2009). In addition, many researchers do not explain why they have chosen a given indicator as opposed to the others (Birley and Westhead, 1994; Shepherd and Wiklund, 2009). This tendency has partly contributed to the mixed results in small firm growth studies (Delmar and Wiklund, 2008). In this regard, Shepherd and Wiklund (2009) substantially contributed to the literature by significantly advancing understanding of firm performance. Their study found sales performance to be the most popular indicator, followed by employment, assets, and profit. This finding is further supported by the review conducted by Achtenhagen *et al.* (2010), who found sales performance to be a popular indicator used to measure SME performance. Most researchers have, indeed, concluded that sales

performance is a most suitable performance measure than others (Shepherd and Wiklund, 2009; Shibia and Barako, 2017). This is because sales performance has great relevance to many policy-makers, since firm growth has been regarded as important for income generation. Besides policy-makers, entrepreneurs themselves tend to measure growth through firm sales (Barkham and Gudgin, 2002; Asah *et al.*, 2015). Furthermore, it is suggested that different measurement periods do influence the research findings, as performance generally depends on both short- and long-term changes (Delmar, 1997). This means that the factors responsible for short-term performance do not always determine long-term performance. Delmar (1997) and Jansen (2009) indicated the five-year period to be the most common approach, followed by periods of one year and three years. Their findings also revealed that while most studies indicate the measurement period, the authors typically failed to explain why they chose this specific measurement period. Empirically, there has been little investigation of the choice of measurement period and its effects on the outcome of analysis.

2.2 Personality traits, cognitive characteristics, and firm performance

Personality traits and cognitive characteristics are approaches used to study entrepreneurship at the individual level (Carland *et al.*, 1984; Doris and Irena, 2013; Zhao *et al.*, 2010; Ignas, 2012; Adomako *et al.*, 2016; Danso *et al.*, 2016; Robert, 2017). In these approaches, it is assumed that entrepreneurs display certain similar traits, actions, and behaviours that can be used to distinguish them from the general population (Kirby, 2003). Entrepreneurship scholars using these approaches (Frese, 2000; Rauch and Frese, 2007b; Krauss *et al.*, 2005; Shane, 2007; Leutner *et al.*, 2014; Vimolwan and Nusrat, 2017) frequently contend that entrepreneurs display certain similar traits and behaviours. However, in the early 1980s, entrepreneurial research based on the trait approach began to be criticised, mostly due to their lack of universal definitions (Churchill and Lewis, 1983; Gartner, 1988; Rauch and Frese, 2007a, b). For example, the use of various definitions has resulted in different impacts, making it difficult to compare results (Gartner, 1988). Moreover, the different instruments used to measure the same constructs are poorly correlated, thus lacking convergent validity (Kirby, 2003). In response to these criticisms, entrepreneurship research has turned to more cognitive models, suggested to better explain the complexity inherent in entrepreneurial behaviour (Kirby, 2003; Bridge *et al.*, 2009; Héctor, 2017; Vimolwan and Nusrat, 2017).

While many have criticised the trait approach, several scholars have argued against its dismissal, suggesting that it is worth asking “who is an entrepreneur”. Accordingly, interest in the role of personality in entrepreneurship has been rekindled (Jenkins and Griffith, 2004; Frank *et al.*, 2007; Rauch and Frese, 2007a, b; Zhao *et al.*, 2010; Bajwa *et al.*, 2017). The rationale for this development is that personality traits may better predict entrepreneurial cognitive processes than these processes’ outcomes (Krueger *et al.*, 2000; Simon and Houghton, 2002; Doris and Irena, 2013; Zhao *et al.*, 2010; Ignas, 2012; Adomako *et al.*, 2016). Among the personality traits most extensively related to entrepreneurs and entrepreneurial cognitive are need for achievement (McClelland, 1961; McClelland, 1965; Rotter, 1966; Perry *et al.*, 1988; Begley and Boyd, 1987; Lee and Tsang, 2001; Stewart *et al.*, 2003; Pinho and Sampaio, 2014; Adomako *et al.*, 2016), locus of control (Brockhaus, 1982; Perry *et al.*, 1988; Miller and Toulouse, 1986; Begley and Boyd, 1987; Lee and Tsang, 2001; Thapa, 2015), and self-efficacy (Baum and Locke, 2004; Poon *et al.*, 2006; Pinho and Sampaio, 2014; Thapa, 2015). These three traits were all included in the current study.

Given the promise of the cognitive approach as a field of entrepreneurship study, linking cognitive characteristics to firm performance seems highly valuable. The entrepreneurial cognitive approach moved beyond the traits approach by examining how entrepreneurs think and behave and why they act as they do (Delmar, 2000; Pinho and Sampaio, 2014).

Within this approach, achievement and attitude models have been widely used to represent cognitive models (Kirby, 2003; Sánchez-Cardona *et al.*, 2012; Thapa, 2015). Both attitude and achievement models are linked to human behaviour, but seem to differ in their theoretical perspective. For example, while the attitude model explains how attitude towards entrepreneurship shapes individual behaviour, the achievement model concerns motivation, seeking to explain why individuals engage in situations and behave in the manner they do. Based on these models, four cognitive characteristics were included in the current study: entrepreneurial alertness, attitude towards entrepreneurship, cognitive styles, and entrepreneurial motivation. These four characteristics were chosen due to their importance in previous cognition-based entrepreneurship research.

Furthermore, personality traits alone are insufficient to explain SME performance. This is because the link between personality traits and entrepreneurial performance is mediated by multiple layers of factors, including perception, attitude, and intention (Shepherd and Krueger, 2002; Yan, 2010; Bajwa *et al.*, 2017). This means that entrepreneurs with the requisite personality traits must still take certain actions to achieve success. However, possessing these traits makes it more likely that such actions will be taken (Frese *et al.*, 2007; Bajwa *et al.*, 2017). For example, people who value achievement are achievement-driven and motivated to continuously achieve performance (Shane *et al.*, 2003). In fact, people tend to engage in new experiences when they believe in their capabilities to do so (Sánchez-Cardona *et al.*, 2012). In addition to potentially influencing the type of firm an entrepreneur will create and how it will be managed. Andersson and Tell (2009) assert that personality traits can enhance firm growth if the entrepreneur intends to grow. Responding to this idea, Baum *et al.* (2001) constructed a multi-dimensional model to explain the direct and indirect effects on venture growth. In their model, five research domains were used to explain venture growth: personality traits and motives, personal competencies, situational specific motivations, competitive strategies, and business environment. Their findings revealed that specific competencies, situational specific motivations, and competitive strategies had direct effects on venture growth, while personality traits, general competencies, and the environment had significant indirect effects thereon. They further suggest that personality traits affect venture growth through competencies, motivations, and strategy. In a similar study, Shepherd and Krueger (2002) suggest that personality traits' influence on entrepreneurial action and performance is mediated by multiple layers of factors, including attitude towards business and entrepreneurship, perceptions, and cognitive styles. This was further supported by Baum and Locke (2004) who found that entrepreneurial motivation mediates the relationship between personal characteristics and venture growth. Other than entrepreneurial motivation and attitudes, entrepreneurial alertness is found to influence entrepreneurial performance. Research indicates that highly alert individuals tend to show greater commitment to their firm than less alert individuals (Tang, 2008; Hajizadeh and Zali, 2016). In addition, Adomako *et al.* (2016) found that entrepreneurs' personal attributes enhanced higher levels of cognitive planning and creating styles, in turn influencing performance. Given the indirect effects observed in prior research, this study postulates the following:

- H1. Personality traits of the owner-managers are positively related to their cognitive characteristics.
- H2. Cognitive characteristics of the owner-manager have a significant influence on SMEs performance.
- H3. Personality traits have an indirect effect on the performance of SMEs through cognitive characteristics.

3. Methodology

This study's survey was conducted through a listed questionnaire adopted from previous studies in the field of personality traits and cognitive characteristics. Data were collected by means of self-administered questionnaires. The study was conducted in four urban areas: Dar es Salaam, Arusha, Morogoro, and Iringa. The reasons for choosing these towns are as follows. Dar es Salaam was selected because it is the largest commercial city in Tanzania, with more than three million people and most of the SMEs in this urban area. Arusha is regarded as second to Dar es Salaam in commercial activities, while the urban area of Iringa supplies timber. Finally, Morogoro was chosen due to its strategic location between Dar es Salaam and Iringa. This geographical area has been chosen as it contains a large number of Tanzania's SMEs. A major difficulty in studying SMEs in most African countries (including Tanzania) is the absence of a proper sampling framework. Consequently, researchers are forced to use non-probability sampling, namely, purposeful sampling. This approach is commonly used in Tanzania, due to the lack of an accurate and up-to-date sampling framework (Nchimbi, 2002; Isaga *et al.*, 2015). With this approach, efforts are, therefore, made to approach the respondents who best fit the research objectives. Since this study aimed to examine entrepreneurial characteristics, each respondent selected had to be the owner-manager of a firm (or one of them, if a firm had more than one owner-manager).

Furthermore, it is noted that analysing a single industry allows the monitoring of industry-specific effects and may provide a clearer understanding of that sector (Baum and Locke, 2004). Therefore, to control for the complications that may arise from investigating different sectors, this study was limited to one sector within the wood manufacturing industry, namely, the furniture industry. In Tanzania, this sector comprises many small manufacturers, maintaining low levels of production aimed at serving local markets (Nchimbi, 2002). Additionally, most of these firms are run by entrepreneurs with a low level of education, dependent on simple hand tools to make furniture. Despite these limitations, Tanzania's small manufacturers are creative, manufacturing furniture in various designs, as has been observed in foreign catalogues (Murphy, 2006). This sector is among the most significant contributors to the manufacturing gross domestic product and employs about 10 per cent of Tanzania's total workforce (Nchimbi, 2002). Furthermore, this sector depends little on imports as most of the raw materials used are found in Tanzanian forests (Harding *et al.*, 2002). To reduce bias, centres known for their furniture industry were identified with the help of the Small Industry Development Organization.

Before data collection, the questionnaire was translated from English into Kiswahili (the common language spoken in Tanzania). The researcher performed the translation in collaboration with the National Kiswahili Council (BAKITA). To ensure accurate translation, the Kiswahili questionnaire was given to another linguist to back-translate into English. Finally, the researcher compared both versions and made a few minor changes. Subsequently, the questionnaire was pre-tested on 20 entrepreneurs before data collection, to test the validity and reliability of each question in capturing the information sought. Furthermore, the questionnaire was sent to a number of SME experts in Tanzania to ensure content validity. The questionnaire was further modified on the basis of suggestions from the entrepreneurs and SME experts. For example, many of the owner-managers interviewed do not keep proper accounting records; when they do, they are often not prepared to disclose them to third parties. Recognising this problem, general measures were used to obtain information regarding performance in sales and assets. The respondents were asked to rate their firms' performance on a scale from 1 to 3, with each number corresponding to whether their firm's sales and assets had decreased, remained the same, or increased over the period of study. The questionnaires were distributed to SMEs in renowned furniture industry centres. In total, 300 SME owner-managers participated in the fieldwork study.

3.1 Operationalization of study variables

To achieve the study's objectives, the researcher needed both historical and current information about the entrepreneur's characteristics, such as personality traits and cognitive characteristics, as well as the SME sales and assets figures for the last five years.

Firm performance. In this study, firm performance is defined in terms of change in the level of sales and the value of assets. Assets and sales performance are good indicators of future performance and the firm's ability for expanding operations (Jansen, 2009; Shepherd and Wiklund, 2009). As noted above, the respondents were asked to rate their firms' performance on a scale from 1 to 3 in relation to changes in sales and assets over the last five years.

Personality traits. Several items were developed for each variable, and owner-managers were required to indicate their level of agreement with each item using a five-point Likert scale. Furthermore, some of the items used to measure personality traits were reverse-worded and intermingled with other statements. However, during the data entry stage, the reverse-worded items were recorded such that a higher score indicates a stronger character. Accordingly, need for achievement was measured using a scale adapted from Steers and Braunstein (1976), which has also been used in other works (Hansemark, 1998; Entrialgo *et al.*, 2000; Stewart *et al.*, 2003). The entrepreneurs' locus of control was measured by three different dimensions: internal attributing, chance attributing, and powerful others (Levenson, 1981). These have previously been observed in other works (Koh, 1996; Hansemark, 1998; Littunen and Virtanen, 2006). The scale developed by Sherer *et al.* (1982) was used to measure entrepreneurs' self-efficacy, as it is frequently reported to have high reliability (Chen *et al.*, 2001).

Cognitive characteristics. The items used to measure cognitive characteristics are based on a five-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree). Again, some of the items used to measure cognitive characteristics were reverse-worded and intermingled with other statements. However, during data entry the reverse-worded items were recorded such that a higher score indicates a stronger character. Attitude towards entrepreneurship was measured using a scale adopted from Turan and Kara (2007). This scale measures the extent to which the entrepreneur has a positive attitude towards entrepreneurship. We assess cognitive style with the 18-item Cognitive Style Indicator developed by Cools and Van den Broeck (2007). This scale distinguishes a knowing style, a planning style, and a creating style. It has been used often as it has shown itself to be reliable and valid across different countries (Cools and Van den Broeck, 2007; Marcati *et al.*, 2008). Eight items adapted from Tang *et al.* (2008) were used to measure entrepreneurs' alertness. These items were developed on the basis of the Kirzner (1979) definition. This scale has been found to have strong reliability and validity (Tang, 2008); it incorporates eight items, four of which represent low alertness while the other four represent high alertness. The items adapted from Davidsson (1989) – previously used by Kolvereid (1992), Olomi (2001), and Nchimbi (2002) – were used to measure entrepreneurial motivation.

4. Findings

The data analysis involved four main phases: data preparation, descriptive analysis, factor analysis, and hypothesis testing. Data preparation was undertaken soon after completion of the fieldwork: responses from all 300 questionnaires were entered into the computer using SPSS software. Thereafter, descriptive analysis, factor analysis, and hypothesis testing were performed.

4.1 Descriptive analysis

Table I shows the details of the respondents' backgrounds. The majority of the respondents are male (99.0 per cent), and more than 86 per cent of the respondents are married.

Table I.
Entrepreneurial
characteristics

Characteristics	Mean	SD
Need for achievement	4.5078	0.50613
Internal locus of control	4.4972	0.48317
Cognitive creating style	4.4883	0.53512
Self-efficacy persistence	4.2583	0.81731
Current motives independency and recognition	4.1017	0.70361
Current motives personal wealth satisfaction	4.0833	0.86635
Current motives desire to build a successful business	3.9383	1.08364
Start-up motives quest for personal wealth	3.8944	0.79070
High level of alertness	3.8675	1.08855
Current motive need for survival and status	3.6517	1.32015
Start-up motives need for survival	3.4767	1.12924
Start-up motives need for independence	3.3967	1.26235
Start-up motives role models	3.2850	1.16439
Current motive role models	2.8600	1.53512
Start-up motives job dissatisfaction	2.6900	1.49935
Cognitive knowing style	2.1183	1.27760
Cognitive planning style	1.6033	0.64248

The majority of the respondents (46.3 per cent) were aged between 30 and 40 years old at the time of the interview, while 29.7 per cent of the respondents were below 30 years of age, and 24.0 per cent were above 60 years old. The majority of the respondents (69.7 per cent) had only completed primary school. Very few (3.3 per cent) had attained an advanced level of secondary school education or a degree. It was found that 40.7 per cent of the respondents had entrepreneurial experience prior to starting their current business. Likewise, 60.0 per cent of the interviewed respondents had managerial experience prior to starting their current business, while 51.0 per cent had experience in their current industry prior to starting their own business. Regarding firm size, the majority (74.3 per cent) are small. More than half of the firms (53.4 per cent) were established less than ten years ago, while only 3.3 per cent were established more than 25 years ago. In total, 43.4 per cent of the firms were established between 10 and 25 years ago.

4.2 Factor analysis

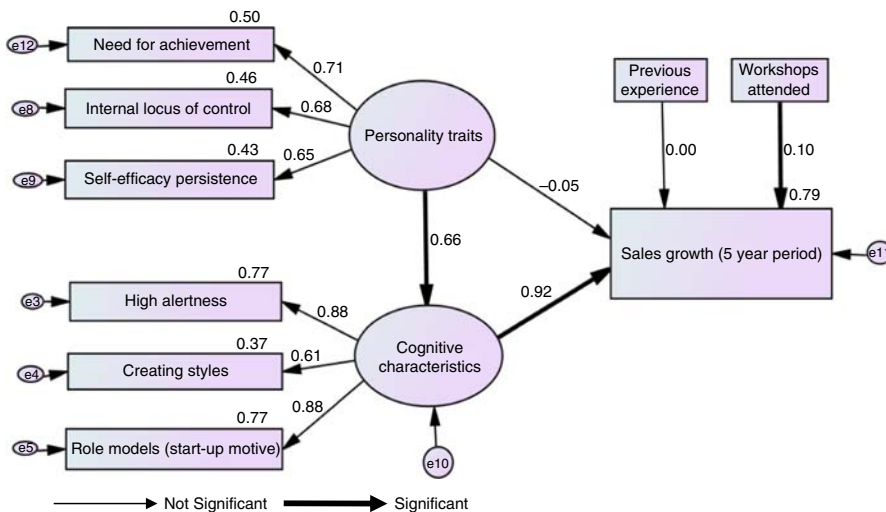
Factor analysis was conducted for the items used to measure each of personality traits and cognitive characteristic. It was performed to examine several aspects, such as construct validity, goodness of the measurement scale, contribution of each scale item, and how well the scale measures the concept (Hair *et al.*, 2006). Factor analysis was also used to reduce the number of variables by creating new composite variables for each factor (summated scale). These composite variables were then used for subsequent analysis. The overall mean scores and standard deviations are displayed in Table I.

4.3 Structural equation modelling (SEM) approach

This study's objective was to simultaneously determine the direct and indirect effects of entrepreneurs' characteristics in explaining SME growth. This objective can be analysed through either multiple regression analysis or SEM. However, SEM has some advantages as it allows more precise estimation of exogenous variables' indirect effects on all endogenous variables (Hair *et al.*, 2006). In the literature, SEM is also frequently reported to be most appropriate, particularly if the researcher has multiple constructs, each represented by several measured variables (Hair *et al.*, 2006). Three indices, namely, the χ^2 test, comparative fit index (CFI), and root mean error of approximation (RMSEA), were used to evaluate the model fit.

Before SEM was conducted, correlations among variables were examined. The correlations matrix reveals that the variable “attitude towards entrepreneurship” is highly correlated with a number of variables. The tolerance value for this factor was 0.141, indicating that 99 per cent of its variance is accounted for by other factors in the equation. Furthermore, planning style, knowing style, start-up motives (striving for personal wealth and job dissatisfaction), and current motives (need for survival and status, role models, and need for personal wealth and independence) were not significantly correlated to the performance measures; therefore, they were not included in the SEM. However, entrepreneurial motive (desire to build a successful business) was only related to asset performance. Based on these findings, personality traits (achievement, locus of control, and self-efficacy) and cognitive characteristics (alertness, creating style, and role models) were included in the first model, while entrepreneurial motive (desire to build successful business) was added in the second model, as seen in Figures 1 and 2.

Model 1: indirect effect of personality traits on sales performance (five-year period). As shown in Figure 1, our hypothesised model fits the data well ($\chi^2 = 33.950$ with 25df, $p = 0.109$, RMSEA = 0.035, CFI = 0.991). The findings suggest that there is no direct relationship between personality traits and sales performance ($p = 0.380$). In support of *H1*, personality traits showed a significant positive effect on cognitive characteristics ($p = 0.001$). Furthermore, the path from cognitive characteristics to sales performance was significant positively related ($p = 0.001$), thereby confirming *H2*. The findings further revealed insignificant coefficients between personality traits and sales performance, suggesting that there is no direct relationship between the two. These results may suggest that personality traits are important predictors of sales performance but only via cognitive characteristics. This indirect effect was examined and tested for significance, as presented in Tables II-IV. Concerning the effect of personality traits on sales performance, the standardised total of 0.55 comprises -0.05 direct effect and 0.60 indirect effect, mediated through cognitive characteristics. These results suggest that personality traits have no direct effect on sales performance but do affect sales growth indirectly through cognitive characteristics, thereby confirming *H3*.



Notes: $\chi^2 = 33.950$; Number of degree of freedom = 25; Significance = 0.109; Value of RMSEA = 0.035; Value of CFI = 0.991

Figure 1. Indirect effect of personality trait on sales growth

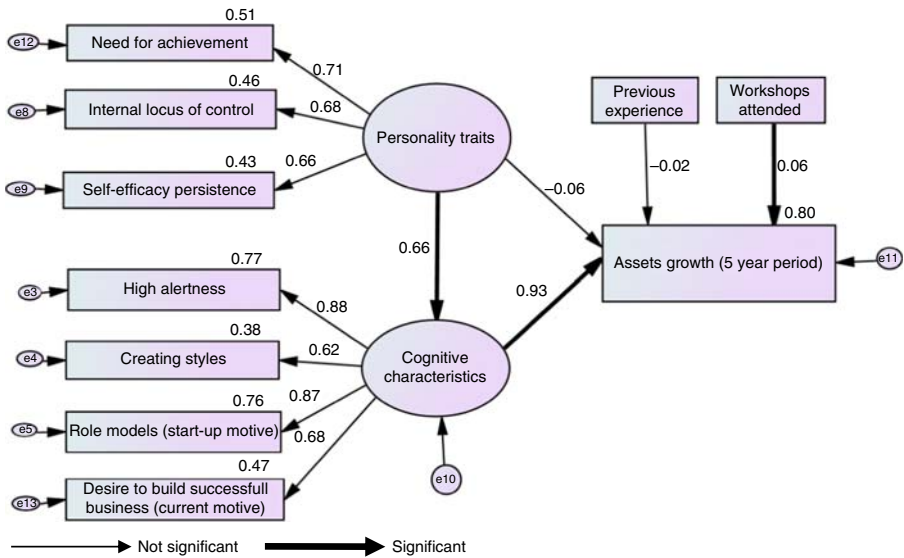


Figure 2.
Indirect effect of personality trait on assets growth

Notes: $\chi^2=39.786$; Number of degree of freedom=33; Significance=0.194; Value of RMSEA=0.026; Value of CFI=0.994

Table II.
Standardised regression weight

	Estimate	SE	t-value	p-value
Need for achievement ← personality traits	0.71			
Internal locus of control ← personality traits	0.68	0.166	8.994	0.001
Self-efficacy persistence ← personality traits	0.66	0.119	8.804	0.001
Role models (start-up motive) ← cognitive characteristics	0.88			
Creating style ← cognitive characteristics	0.61	0.058	11.721	0.001
High alertness ← cognitive characteristics	0.66	0.047	20.586	0.001
Cognitive characteristics ← personality traits	0.66	0.121	8.267	0.001
Sales performance (5 years) ← personality traits	-0.05	0.115	-0.878	0.380
Sales performance (5 years) ← cognitive characteristics	0.92	0.079	14.696	0.001

Table III.
Standardised total effects

	Personality traits	Cognitive characteristics
Cognitive characteristics	0.66	0.00
Sales 5 year period	0.55	0.92

Table IV.
Standardised indirect effects

	Personality traits	Cognitive characteristics
Cognitive characteristics	0.00	0.00
Sales 5 year period	0.60	0.00

Model 2: indirect effect of personality traits on assets performance (five-year period). Figure 2 shows that the hypothesised model fits the data well ($\chi^2 = 39.786$ with 33df, $p = 0.194$, RMSEA = 0.026, CFI = 0.994). The path coefficient between personality traits and cognitive characteristics is significant ($p < 0.05$), which supports *H1*. As seen in Figure 2, the direct relationship between personality traits and assets growth is not significant ($p = 0.316$). In addition, Figure 2 provides support for *H2* by indicating that cognitive characteristics have a significant positive influence on assets performance.

The indirect effect of personality traits on assets performance was examined and tested for significance. The results, as presented in Tables V-VIII, show that the standardised total of 0.56 comprises -0.06 direct effect and 0.62 indirect effect, mediated through cognitive characteristics. This means that personality traits have no direct effect on assets performance, but affect it indirectly through cognitive characteristics (thereby confirming *H3*). In addition, the squared multiple correlations show that the predictor variables accounted for 80.0 per cent of variance in assets growth.

5. Discussion

This paper examined the mediating effect of cognitive characteristics on the relationship between owner-managers' personality traits and SME performance. As entrepreneurship

	Estimate	SE	t-value	p-value
Need for achievement ← personality traits	0.71			
Internal locus of control ← personality traits	0.68	0.165	9.009	0.001
Self-efficacy persistence ← personality traits	0.66	0.119	8.855	0.001
Role models (start-up motive) ← cognitive characteristics	0.87			
Creating style ← cognitive characteristics	0.62	0.059	11.891	0.001
High alertness ← cognitive characteristics	0.88	0.048	20.397	0.001
Desire to build a successful business ← cognitive characteristics	0.68	0.069	13.605	0.001
Cognitive characteristics ← personality traits	0.66	0.119	8.327	0.001
Assets 5 year period ← personality traits	-0.06	0.113	-1.003	0.316
Assets 5 year period ← cognitive characteristics	0.93	0.079	14.992	0.001

Table V.
Standardised
regression weights

	Personality traits	Cognitive characteristics
Cognitive characteristics	0.66	0.00
Assets 5 year period	0.56	0.93

Table VI.
Standardised
total effects

	Personality traits	Cognitive characteristics
Cognitive characteristics	0.66	0.00
Assets 5 year period	-0.06	0.93

Table VII.
Standardised
direct effects

	Personality traits	Cognitive characteristics
Cognitive characteristics	0.00	0.00
Assets 5 year period	0.62	0.00

Table VIII.
Standardised
indirect effects

researchers have previously indicated, personality traits likely work in conjunction with other factors in explaining firm performance (Krauss *et al.*, 2005; Rauch and Frese, 2007a, b; Shane, 2007; Chell, 2008; Rauch *et al.*, 2009; Yan, 2010; Adomako *et al.*, 2016; Bajwa *et al.*, 2017). Alternatively, other factors may mediate the relationship between personality traits and SME performance. This study considers whether personality traits work through cognitive characteristics in explaining SME performance. The study's findings provide strong support for the hypothesised relationship. When entrepreneurs' characteristics were examined simultaneously through SEM, the direct relationship between personality traits and SME performance was very weak. However, personality traits were found to relate significantly to cognitive characteristics. This confirms propositions that traits may better predict entrepreneurial cognitive processes, rather than these processes' outcomes, such as SME performance (Yan, 2010; Adomako *et al.*, 2016; Bajwa *et al.*, 2017). Thus, without cognitive characteristics, personality traits may have a minimal or no effect on SME performance. This is consistent with the previous findings and suggestions that such factors as personality traits affect SME performance through other variables (Baum *et al.*, 2001; Baum and Locke, 2004; Poon *et al.*, 2006; Doris and Irena, 2013; Zhao *et al.*, 2010; Ignas, 2012; Adomako *et al.*, 2016). In addition, this finding implies that cognitive characteristics are necessary mediators of the link between personality traits and SME performance. This finding justifies the suggestion by previous scholars (Ardichvili *et al.*, 2003; Rauch and Frese, 2007b; Yan, 2010; Zhao *et al.*, 2010; Bajwa *et al.*, 2017) that personality traits should be included in studies aiming to understand the process of developing success.

Likewise, this study found support for the argument that cognitive characteristics, such as high alertness and creating style, are important predictors of SME performance. Entrepreneurial alertness drives a person to acquire, organise, and interpret information in different ways, enabling them to consider various scenarios and situations; this leads to recognition and exploitation of more opportunities which, in turn, improve firm performance (Gaglio and Katz, 2001; Baron, 2007; Karabey, 2012; Tang *et al.*, 2012; Fatoki and Oni, 2015; Roundy *et al.*, 2017). This study also found that owner-managers of the firms that grew employ cognitive creative style. Cognitive creating style reflects an individual's preference for a creative, unconventional, and flexible way of decision making (Cools *et al.*, 2009). People with cognitive creating style tend to see problems as opportunities and challenges, possess high risk preferences, and tend to like uncertainty and freedom (Barbosa *et al.*, 2007). As was expected in this study, owner-managers with high cognitive creating style were more likely to experience performance in their business than those with low cognitive creating style. This is supported by the earlier findings of Allinson *et al.* (2000) and Adomako *et al.* (2016). In addition, entrepreneurial motivation, such as role models and desire to build a successful business, were also related to firm performance. This role modelling may not only lead the children to value self-employment more highly than other forms of employment but may also encourage entrepreneurial behaviour. Previous literature also suggests that suggest that in self-employed families, parents may provide their children with skills, values and the confidence they need to embark on an entrepreneurial career (Niittykangas and Tervo, 2005). Some of these skills may be acquired through observing their parents or through participating in the family business (Mungai and Velamuri, 2011). Furthermore, owner-managers who value achievement are achievement-driven and motivated to continuously achieve performance (Shane *et al.*, 2004; Sánchez-Cardona *et al.*, 2012).

6. Conclusion and policy implications

By combining personality and cognitive characteristics, this study developed a comprehensive model, facilitating understanding of the relationship between owner-managers' characteristics and SME performance. Furthermore, based on survey

data collected from 300 SME owner-managers in the furniture industry, distributed among four different urban areas in Tanzania, several hypotheses were tested and found to be supported, including the mediating role of cognitive characteristics in the relationship between personality traits and SME performance. This study contributes towards existing psychological literature by identifying a few specific personality traits which, matched with the task of entrepreneurship, can effectively predict entrepreneurial performance.

Furthermore, regarding prior inconclusive results on the association between personality traits and SME performance, the study concluded that these can mostly be attributed to studies only testing for a direct relationship, whereas the relationship is actually indirect. This study also evidences that the measurement scales applied in entrepreneurial research are operational even in the Tanzanian environment, thereby contributing to verification of these scales' reliability. The present study is a valuable addition to the few studies on SME performance in Tanzania. Past studies in developed countries have empirically supported the importance of entrepreneurs' characteristics for SME performance. This research adds to this body of knowledge by examining these relationships in the Tanzanian context, where empirical research on the topic is scarce. Indeed, the main contribution emerging from the empirical results indicates that certain entrepreneurial characteristics do contribute to explaining SME performance. Furthermore, this study contributes towards SME performance literature by showing that assets and sales performance indicators are not always affected by the same variables.

This study's findings present several practical implications. First, they suggest that specific personality traits and certain cognitive characteristics are crucial to SME performance. Thus owner-managers should understand that traits influence their cognitive behaviours, in turn influencing firm performance. However, an interesting question is whether these features can be taught. According to Brush *et al.* (2001), workshops or training enhance the knowledge, skills, and management abilities of entrepreneurs, and workshops or training may also change an entrepreneur's mind-set and attitudes towards entrepreneurship. Accordingly, it is suggested that entrepreneurial characteristics can be acquired or enhanced in different ways, including training and education (Wiklund and Shepherd, 2003; Poon *et al.*, 2006). Therefore, appropriate training would enable entrepreneurs to change their behaviour and the manner in which they perceive their business activities. Similarly, from the perspectives of pattern recognition, Baron (2007) argues that appropriate training enables entrepreneurs to become experts at recognising opportunities. From this suggestion, it is obvious that, to some extent, these features can be taught. Therefore, programmes designed to train entrepreneurs in Tanzania should also focus on entrepreneurial characteristics. Specifically, the entrepreneurial characteristics that require more attention are: need for achievement, locus of control, self-efficacy, entrepreneurial alertness, creative style, and entrepreneurial motivation. The right type of training will enable entrepreneurs to increase their business knowledge and abilities, thus increasing their firms' success. Tanzania is a post-socialist country; during the socialism era, there was a negative attitude towards entrepreneurship, and only the government had a mandate to create employment for its citizens. It is perceived that societal norms are slow to change; thus, entrepreneurship as a career may still be viewed negatively in Tanzania. This study recommends that the government should endeavour to create an enterprising culture among its citizens. This can be achieved through raising awareness of entrepreneurship's importance to the country's economy. For example, entrepreneurship education should be provided to young people throughout the education system, from primary school to university level. This approach is very important because encouraging people to be more enterprising needs to start at an early age. Entrepreneurs, themselves, should also recognise that multiple personal characteristics affect their SMEs' performance. Therefore, they should acquire the personal characteristics they lack through

partnering or learning. Furthermore, given the importance of cognitive characteristics in the relationship between personality and SME performance, business associations should be developed to familiarise owner-managers with different types of personality traits and cognitive characteristics, thereby improving their business performance.

Although the study's empirical findings contribute to the existing literature, the results cannot be generalised. Future studies should adopt the proposed research model in other sectors to ascertain if the present findings are specific to the furniture business or also applicable to other businesses. Furthermore, since personality traits affect SME performance through other variables, such as cognitive characteristics, it could also be worth examining additional traits and cognitive characteristics.

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