



Personal factors, forms of capital and the entrepreneurial competence of female engineering and construction SMME owner/managers in an emerging economy context

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Abstract

The role of entrepreneurship in tourism destination growth is critical as small businesses provide services and fulfil the socio-economic opportunities of domestic and foreign tourists. Although personal traits (e.g. age and gender) and the different capital forms possessed by entrepreneurs are often touted in explaining entrepreneurial competence, it remains unclear what explains the entrepreneurial competence of female entrepreneurs especially those operating in predominantly male-oriented industries. To address this research gap, the study examined the effects of personal demographic variables (i.e. race, age, and education) and different capital forms (i.e. social capital, cultural capital and emotional capital) on the entrepreneurial competence of female owned/managed SMMEs operating in engineering and construction industry in a South African province. A descriptive, cross-sectional survey was conducted on 336 female owners/managers of SMMEs operating engineering and construction businesses in the Free Province. A set of statistical techniques (namely T tests, ANOVA, correlation analysis and regression analysis) were conducted to test the proposed relationships between these foresaid constructs. The results revealed a strong, positive and statistically significant relationship between different demographic characteristics and entrepreneurial competence. Surprisingly, only emotional capital was significantly and positively correlated with entrepreneurial competence. Lastly, while all three capital forms significantly predicted entrepreneurial competence, emotional capital had the strongest effect. The study provides some valuable insights into the determinants of entrepreneurial competence which could be instrumental to the success and survival of emerging female owned/managed SMMEs in engineering and construction industry, an industrial domain where female entrepreneurs are yet to be seriously considered.

Keywords: Capital, entrepreneurial competence, females, SMMEs, Free State Province.

Introduction

Literature is replete with evidence on barriers to participation and under-representation of women in engineering (Barnard, Powell, Bagilhole, & Dainty, 2010; Moletsane & Reddy, 2011; Kuschel, Ettl, Díaz-García & Alsos, 2017) and construction industries (Sangweni, 2015; Construction Industry Development Board, 2016) in South Africa and elsewhere such as hospitality (Bowen, Edwards & Lingard, 2012; Hunt, 2016). This literature has discussed the limited female visibility and pressure to assimilate male values (Martin, Wright & Beaven, 2011), and perceived unsuitability of women in technical domains such as Science,



Engineering and Technology (SET) fields and professions (Webster, 2005; Barnard et al., 2010). Other studies have emphasised the general under-preparedness, limited understanding of women needs and rigid systems and inflexible policies and procedures that are not sufficiently accommodative of women (Jonas, 2015). With reference to the construction industry, research has reported limited grasp of women's developmental needs and hence their stagnation in their careers (Haupt & Fester, 2012). These studies point to the multi-faceted and multi-layered nature of individual and societal challenges that female entrepreneurs in male dominated professions are confronted with, hence the need for further research to better understand them.

The diverse factors that affect entrepreneurial competence are generally grouped into demographic factors and attitudes, values or psychological factors (Ashley-Cotleur, King, & Solomon, 2009; Nguyen, 2018). However, when the entrepreneurial competences of women are discussed, sharp focus is often given to the contribution of antecedent personal demographic factors such as gender (Fältholm, Abrahamsson, & Källhammer, 2010), age and education (Man & Lau, 2005; Behling & Lenzi, 2019); literacy levels (Brixiová & Kangoe, 2019) and to personal traits such as lack of technical and entrepreneurial skills (Jonas, 2015) and personal learning (Livonen, Kyröb, Mynttinen, Särkkä-Tirkkonena & Kahiluoto, 2010). For instance, entrepreneurial competence and behaviour are conceived to emerge from the interaction of these individual factors exclusively in a complex entrepreneurial environment. Entrepreneurial competencies are conceived to arise from aspects located in individuals' background (traits, personality, attitudes, social role and self-image) and those acquired through training and education (skills, knowledge and experience) (Man & Lau, 2002; Mitchelmore & Rowley, 2010). The isolated treatment of personal demographics and personal traits often occludes the development of an integrated picture on personal background and traits' effects on entrepreneurial competence as an expression of entrepreneurial behaviour. Therefore, there is a need for a synthesized and integrated approach that combines these variables in one study as determinants of entrepreneurial competence to establish their overall effect.

Different strands of research have emphasised women's possession and enactment of social capital (Runyan, Huddleston & Swinney, 2006; Cohoon, Wadhwa & Mitchell, 2010), emotional capital (Reay, 2005) and cultural capital as reasons for their success or their limited social mobility in their careers. Other researchers have focused on the role of social capital as a critical enhancer of entrepreneurship intentions (Vuković, Kedmenec, Postolov, Jovanovski & Korent, 2017) and access to start-up capital (Brixiová & Kangoe, 2019). However, other studies dispute this and demonstrate that both social capital and gender are insignificant in the development of entrepreneurial intentions (Karadağ, 2018). This demonstrates that contextual influences such as the vibrancy of entrepreneurial culture, experience and exposure to entrepreneurial processes in a region or continent could be more critical to shaping entrepreneurial intentions than does social capital and gender. Therefore, the extent of entrepreneurial intentions in different contexts could be culturally framed. This raises critical questions on the significance of social and cultural capital in shaping entrepreneurial action.

Other research discussed the gendered nature of social capital and have observed differences in the accumulation of social capital by male and female entrepreneurs (Addis & Joxhe, 2016; Lee, 2017, Neneh, 2017). For instance, Neneh (2017) reports significant gender differences in social capital between male and female entrepreneurs with men having a higher level of structural, relational and linking social capital, while women had a higher level of bonding social capital. Her study further demonstrated that structural and bonding social capital had a consistent influence on entrepreneurial performance across gender. While social capital is often touted as an important source of entrepreneurial advantages for female entrepreneurs (Lee, 2017), some studies have adopted a deficit model that emphasise the different forms of social capital as explanations for the limited application of entrepreneurial competences by female entrepreneurs and venture creation decision making (Tinkler, Whittington, Ku & Davies, 2015). For instance, in their study on the contribution of gender to venture creation



decision making, Tinkler et al. (2015) revealed that the entrepreneur's gender influences evaluations most when the person, rather than the venture, is the target of evaluation.

The few exceptional studies that have given specific attention to intersection of female entrepreneurs' background factors and social capital forms have either been located in advanced countries (see Cohoon, Wadhwa & Mitchell, 2010), or were not conducted in South Africa (Alibhai, Buehren & Papineni, 2015) and have not integrated personal demographic and various capital forms in one study (Verwey, 2007). The studies that have documented female successes in male-dominated professions have attributed such success to different factors such as strong associations (Verwey, 2007) or were not conducted in the engineering and construction industry. In other studies, social capital is applied not as an antecedent variable, but rather a moderator of gender- career success relationship (Lutter, 2015). In view of these developments, it is unclear what influence personal demographic and different capital forms have on entrepreneurial competences of female entrepreneurs operating engineering and construction SMMEs in emerging country contexts. The study, therefore sought to address the following research questions:

1. What are the main personal and capital attributes of successful women who are operating engineering and construction sector SMMEs in the Free State Province?
2. Which demographic factors most influence the entrepreneurial competence of female engineering and construction SMMEs owner/managers?
3. Which forms of capital most influence the entrepreneurial competence of female engineering and construction SMMEs owner/managers?

Research framework

Entrepreneurial Event Model

While multiple approaches are employed in studying entrepreneurial competence, the most popular model is Shapero's Entrepreneurial Event Model (Shapero, 1975) and Gender in entrepreneurship approach. Shapero's Entrepreneurial Event Model conceives entrepreneurial competence to arise from an individual's interaction with the environment, and these interactions influence an individual's perceptions. Entrepreneurial competence which then stir entrepreneurial intentions, would be a consequence of "Perceived desirability", "Perceived feasibility" and "Propensity to act" (Shapero, 1975). Since entrepreneurial competence has to be demonstrated, it can be postulated that one's capacity to act entrepreneurially is a function of her perception of the feasibility, perceived desirability and her own capacity to act. *Perceived desirability* denotes the extent to which an individual feel enticed to a specific behaviour (e.g to demonstrate entrepreneurial competence). Such attraction could be driven by one's gender to prove that individuals considered alien to male dominated professions can demonstrate competences of successful entrepreneurs. *Perceived feasibility* describes the extent to which the individual considers herself personally capable of executing a certain behaviour (Shapero, 1975, Nguyen, 2018).

The individual entrepreneur's possession of influential business networks, their psychological capital such as their emotional disposition and resilience in pursuit of business decisions may affect their entrepreneurial competence. *Propensity to act* denotes one's belief in her own capacity to influence the behavioural outcomes (i.e. entrepreneurship competence). The propensity to execute venture decisions can be a function of the individual's financial capital base which partly depends on affinity to individuals with resources through marriage and their racial background. In the context of South Africa where access to resources continue to be marked by the apartheid legacy, race continues to be a proxy for advantage and social privilege. Behling and Lenzi (2019) contend that possession of entrepreneurial competences is often associated with engagement in strategic behaviour such as the adoption of more consistent business strategies, which consistently responds to unstable socioeconomic scenarios. For instance, possession of strong entrepreneurial competences would naturally



dictate that different conditions require different strategies for dealing with the complexities of the business environment. For example, cost leadership strategy, differentiation strategy and focus strategy (Porter, 1985; Tanwar, 2013) apply to different environmental conditions where customers are cost sensitive, require unique products and services that add value, and allow the business to target a small number of target market segments with premium services while excluding others respectively.

Gendered nature of entrepreneurship

Female entrepreneurship is critical in boosting tourism is especially in emerging economies which depend heavily on tourism activities for creating new job opportunities, their economic growth (Matsiliza, 2017) and expansion of domestic consumption. More so, in these contexts where male entrepreneurship tends to dominate, female entrepreneurship could complement the tourism industry's contribution to economic stability and national transformation by providing economically beneficial, locally developed job opportunities, environmentally friendly services and solutions to localities (Silbert, 2019). Female entrepreneurship is particularly critical to South Africa, where the triple challenges of poverty, unemployment and inequality continue to erode the tourism opportunities deemed fundamental to addressing these social ills.

Western research on entrepreneurship tends to adopt a non-gendered approach to entrepreneurship and affirms economic rationality as a main determinant of entrepreneurial action. This approach concentrates on the marked differences between different sexes in relation to entrepreneurial pursuits, constraints women are confronted with when they seek funding, market their products and run their enterprises (Marlow & Patton, 2005; Fältholm, Abrahamsson & Källhammer, 2010) and interventions needed for them to become successful entrepreneurs. For instance, Wang's (2018) study on the effects of gender and ethnicity on entrepreneurship in the United States revealed that women are less likely to operate in businesses where men dominate. The study revealed that being female and Hispanic or Asian, will increase the complexities of business ownership by 66 percent (Hispanic) and 75 percent (Asian) respectively when holding other conditions constant. A study conducted by Rath and Eurofound (2011) revealed that female European entrepreneurs reported the lack of entrepreneurial experience (47%) as the main barrier to entrepreneurship, while men mentioned bureaucratic and financial constraints. All these point to different scores between different genders regarding entrepreneurial competence.

Evidence points to continual gender gaps regarding start-up capital and that female entrepreneurs' often draw on their own relational networks and social capital than men to offset their constrained access to funding opportunities (Kuada, 2009). Acknowledging the central role that entrepreneurship provides in shaping the identity of women and their empowerment in society (Blomqvist, Chastain, Thickett, Unnikrishnan, & Woods, 2014), policy makers in developing economies have concentrated on broadening access to finance, investor networks, training and technical assistance for women entrepreneurs (Barr, 2015; Brixiová & Kangoye, 2019). Other studies emphasised the need for female entrepreneurs operating businesses in male-dominated professions to partner with men (Godwin, Stevens & Brenner, 2006) or to increase their access to business networks and mentors (McGregor & Tweed, 2002). Examples include exhorting female entrepreneurs to join self-help groups that leverage their access to micro-finance and increase social ties to affinities for self-empowerment (Ogunrinola, 2011).

The difference in capacities and opportunities to network for business and in entrepreneurship intentions between men and women have been emphasised in entrepreneurial research. Early research has demonstrated that women had not been well integrated into networks and dominant coalitions networks (Brass, 1985) and that men tended to associate with other men in their networks (Addis & Joxhe, 2017). Nevertheless, it is not all gloom for women entrepreneurs as there is also compelling evidence for their growth in numbers on the African



continent and their higher entrepreneurial intentions. For instance, Africa host the highest share of women's entrepreneurship globally and the number of women entrepreneurs on the continent has been surging (GEM, 2017). Overall, however, the traditional approach to entrepreneurship has been criticised for concentrating on individual-level gender-based comparisons between males and females and for downplaying societal and economic structures in entrepreneurial pursuits, which are also integral to the analysis (Blackburn & Kovalainen, 2008).

Entrepreneurial competence

To the extent that an entrepreneur identifies business opportunities, harness skills to operationalise these opportunities and pools resources to implement business decisions, all these capabilities are conceived to encapsulate competences. Competences are broadly classified into knowledge, characteristics and skills (Mojab, Zaefarian & Azizi, 2011).

The definitions of entrepreneurial competence are heavily contested and span from opportunity recognition, opportunity optimisation, resource utilisation to operating a venture successfully. For instance, Mitchelmore and Rowley (2010) define entrepreneurial competencies as distinct traits for effective application and operationalization of entrepreneurship in a new enterprise. For Al-Mamun, Nawi, & Zainol (2016), entrepreneurial competencies refer to the abilities to appropriate and apply resources for improving the performance of micro-enterprises. Entrepreneurial competences, therefore, are often grouped into specific entrepreneurial personality traits which are: opportunity, relationship, conceptual, organizing, strategic and commitment competencies (Man, Lau & Chan, 2002). For instance, an ability to recognise business opportunities and to marshal and coordinate resources timely are common traits associated with successful entrepreneurs. The capacity to build solid partnerships and relationships between the business and the external environmental stakeholders including the ability to develop innovative products and services that satisfy customer needs are relational and strategic entrepreneurial competences fundamental to the success of an entrepreneur. Despite the wide contestation of what they are, entrepreneurial competences capture a wide range of attitudes, beliefs, personality, mindset and the behavioural tendencies (Mahadalle & Kaplan, 2017) which are often associated with business performance entrepreneurial success (Mahadalle & Kaplan, 2017).

Possession of entrepreneurial competences is fundamental to the growth, survival and success of a business venture. Mohamad and Sidek (2013) affirm the capacity of entrepreneurial competencies to mediate the relationship between the growth of microfinance and small businesses. Other studies have postulated entrepreneurial competence not as a mediator but rather an antecedent of business performance. For instance, Sánchez's (2011) study on the relationship between entrepreneurial competence and small firm performance reports that entrepreneurial competence has an integral role in organisational capability and competitive scope, and directly affects firm performance. Appreciating the ability of entrepreneurial competences to stir businesses on a growth path, Mitchelmore and Rowley (2010) emphasise the need to examine this core concept, its measurement and association with entrepreneurial performance and enterprise success. The current study, however, argues that there are personal traits and capital forms which are antecedents of entrepreneurial competence as shown in subsequent sections of this paper.

Marital status and entrepreneurial competence

From a family embeddedness perspective, women in scientific, engineering and technology sectors arguably make multiple adjustments (e.g. by joining male-dominated male professional networks, by assimilating male values and mannerisms, modelling masculine behaviours, balancing professional and family commitments) to cope with the perceptual challenges of visibility and assimilation (Kanter, 1993) and make frequent compromises and adjustments in their status within the industry (Martin, Wright & Beaven, 2015). Female



entrepreneurs tend to deal with multiple gender-related demands of being care givers, guardians and womanhood (e.g. being spouses and mothers), which compete with their demands for entrepreneurial training and entrepreneurship uptake. Women including married women, are seldom than men involved in entrepreneurship-related to the STEM fields (Kuschel et al., 2017). Shodhganda (n.d.) reported some significant differences in attitudinal entrepreneurial competences between married and unmarried entrepreneurs located in backward communities and attributed these differences to their varying self-confidence, self-esteem, tolerance for ambiguity, and locus of control. Therefore, the study postulates that: *single women have higher entrepreneurial competence than married women.*

Age and entrepreneurial competence

Literature suggest that younger adults (i.e. ages of 25 to 34) tend to engage in entrepreneurship, especially business ownership, compared to older individuals (Delmar & Davidsson, 2000). Despite their capacity to demonstrate greater flexibility in entrepreneurship due to their increased resource endowments, resources and opportunities (Weber & Schaper, 2004), older individuals are less likely than younger people to act entrepreneurially (Hart, Anyadike-Danes & Blackburn, 2004; Nguyen, 2018).

Behling and Lenzi (2019) explored associations between the entrepreneurs' gender and age and the range of entrepreneurial competencies they possessed and reported no significant differences for these variables. The analyses of mean scores for each entrepreneurial competence individually against the entrepreneur's profiles did not reveal any significant differences. Their study demonstrated, therefore, that individual entrepreneur profiles were not significant determinants of the number of entrepreneurial competencies that entrepreneurs possessed. Other studies suggested the existence of some gender-based age differences in entrepreneurship competences. For instance, Zali, Faghih, Gelard, and Molaei (2018) explored the effects of age and entrepreneurial age-based self-image on entrepreneurial competencies of male and female entrepreneurs in Iran. Their findings revealed that females' age have more effect on their entrepreneurial competencies (0.071) than that of males (0.050). Moreover, females' entrepreneurial age-based self-image have more impact on their entrepreneurial competencies (0.171) than that of males (0.127). The current study postulate that there is a *negative relationship between age and entrepreneurship competence.*

Race and entrepreneurial competence

Wang (2018) explored the interaction of gender, race and entrepreneurship among US entrepreneurs. Their regression analysis on the capacity of these personal demographics to predict self-employment and business ownership revealed that, compared with white, other racial groups are less predisposed to run businesses when other conditions are the same. Similarly, Barr (2015) alludes that the disparities in ethnic minority and female entrepreneurship presents policy interventions concentrating on capital, networks, and skills development as panaceas to bridging the race and gender wealth gaps among women and minorities. In South Africa, literature highlights that access to and control of resources remains predominantly based on race, gender and class with direct implications for entrepreneurial competence development among women (Irene, 2017). These findings support Dzansi and Archemfour's (2016) finding that ethnical enclaves on entrepreneurship competences persist in South Africa, with white Afrikaner and Indians being more entrepreneurially competent than other racial groups. Their proclivity to identify business opportunities and implement them was considered comparatively higher than those of coloured and black African groups.

Van Scheers' (2010) study on marked differences in risk-taking attitudes among the different ethnic groups in South Africa accounted for the disparities in entrepreneurial performance among these groups. The study postulates that *there is a positive relationship between ethnic background and gender.*



Social capital and entrepreneurial competence

The definition of social capital is heavily contested, and variations depend on the level of analysis applied – which ranges from individual, group, community, societal and national. However, at the core of social capital are exchanges of invaluable resources via social networks developed by individuals and groups. Coleman (1988) conceives it as “people’s ability to work together in groups” while Fukuyama (2002) considers it as “any instance in which people cooperate for common ends on the basis of shared information and values”. Putnam (1995) conceives “social capital to comprise a constellation of actual and potential resources embedded within and available through, and derived from, the network of relationships possessed by an individual or social unit”. Therefore, at the core of social capital are social networks, interactions, trust and reciprocity which deepen individuals and groups’ ability to “facilitate exchanges, lower transaction costs, reduce the cost of information, permit trade in the absence of contracts and the collective management of resources” (Fukuyama, 2002).

Although dimensions of social capital proliferate, the ones highly debated in literature are structural, relational and cognitive dimensions (Nahapiet & Ghoshal, 1998). The avenues through which social capital is developed and sustained range from history of interactions (Granovetter, 1992), social trust (Fukuyama, 1995), norms and sanctions (Putnam, 1995), and obligations and expectations (Coleman, 1990; Granovetter, 1985).

In developing countries, women entrepreneurs’ entrepreneurial competence tends to be undermined by constrained access to education and training, limited access to business associations, and limited choices to preferred business sectors (Lindvert, 2018). For instance, most women entrepreneurs are considered to operate small-scale or micro-enterprises in trade or service sectors (Lindvert, 2018) which have limited productivity and growth potential. Other literature also points to the capacity of informal structures informed by norms and values to undermine the status of women in society, their economic function, and to constrain the development of entrepreneurial behaviour (Welter & Smallbone, 2008). Social capital and networking are fundamental to the survival of nascent and micro-enterprises and their adaptation to dynamic business environments (Bøllingtoft, 2012) and to reduce the transactional costs of small enterprises (Agburu, Anza & Iyortsuun, 2017).

Cultural capital and entrepreneurial competence

The definition of cultural capital is imprecise albeit complex. For Bourdieu (1986) describes cultural resources in embodied, institutionalized and objectified forms which act as “social currency” to purchase privilege, position and power. It constitutes social resources embedded in individuals’ intellect, lifestyle and value systems which promote one’s social flexibility in a class-ridden society (Bourdieu, 1986). A vital component of cultural capital is cultural habitus, which is a system of dispositions acquired through one’s family experiences, exposure to education and institutional socialisation (Lamont & Lareau, 1988). For Gaddis (2013), such dispositions enhance an individual’s resilience in the face of hostilities/challenges which characterise the entrepreneurship realm.

Therefore, cultural capital denotes the different skills, dispositions, and aptitudes which are embedded in individuals, families and social institutions that privilege and disadvantage individuals regarding access to opportunities and resources of significance to them. Such skills, dispositions and aptitudes can be assimilated through education, social belonging and social recognition arising from affiliation to families, educational institutions and professional associations. Therefore, persons that contemplate to become entrepreneurs can benefit from possession of high levels of cultural capital (Kim, Aldrich & Keister, 2006).

Kim et al. (2006) elaborate that since essential business skills and tacit knowledge unfold through direct exposure to an entrepreneurial environment, individuals with family business



backgrounds would possess marked privileges over those without. The assumption is the capacity of institutions such as entrepreneurial families to pass down business values, attitudes and dispositions to siblings and family members, thereby improving their entrepreneurial competences in the process. Therefore, some positive associations between father's self-employment and son's self-employment were reported in literature (Hout & Rosen, 2000).

Since limited access to capital and social prejudice and discrimination in loan applications (Satta, 2003; Ahmad & Arif, 2015) is prevalent, having entrepreneurial families would provide additional access to financial resources and entrepreneurial skills female entrepreneurs need to run business successfully through socialisation, social cues and direct financing. Given that cultural capital is often assimilated through observation (e.g. social cues), female entrepreneurs' limited access to education and training (Lindvert, 2018), often undermine the cultural transmission of values such as risk propensity, risk tolerance and resilience through direct encouragement and indirect cues by their parents (Kim et al., 2006). These values can directly impact the acquisition of entrepreneurial competence through female entrepreneurs' proximity to family mentors and informal business networks. This is particularly critical because business networks are considered to be fundamental to improving entrepreneurial effectiveness by providing access to resources (Slotte-Kock & Coviello, 2010).

Emotional capital and entrepreneurial competence

Emotional capital is a form of psychological capital concerned with individual's affect and self-awareness arising from her interaction with people and the environment. The concept describes an individual's ability to leverage her level of self-awareness, self-esteem and personal uprightness to implement actions through the support of relationships (Gratton & Ghoshal, 2003). Broadly conceived, it denotes a person's "knowledge, contacts, and relations as well as access to emotionally valued skills and assets in social networks characterised partly by affective ties" (Nowotny, 1981).

Emotional capital as it relates to entrepreneurship competence is critical, as research tends to consider women to greater emotional capital compared to men (Nowotny, 1981; Reay, 2005). Positive affect is critical to the development of entrepreneurship competence because it increases cognitive flexibility and creativity (Baron & Tang, 2011) and stimulates effort investment in implementing entrepreneurial tasks (Foo, Uy, & Baron, 2009). Negative affect may undermine entrepreneurial competence by weakening creativity (Hills, Shrader, & Lumpkin, 1999) and one's capacity to adjust to dynamic, complex environments (Baron, 2008) like entrepreneurial terrains.

Literature demonstrates entrepreneurship as an emotion-laden enterprise. First, recognising and capitalising on business opportunities requires strong identity and emotional connections (i.e., passion) between the entrepreneur and 'the idea' (Cardon, Zietsma, Saporito, Matherne & Davis, 2005). Second, to the extent that entrepreneurship requires high financial investments, time and effort in exploiting ideas, it requires strong commitment. In view of the complexity of entrepreneurial tasks due to their execution in uncertainty and fast changing conditions, preestablished routines may not always work (Fodor & Pinteá, 2017) hence the need for passion, positive mood, tolerance for ambiguity and resilience. Therefore, Cardon, Foo, Shepherd & Wiklund (2011) posits that emotional capital is integral to an entrepreneur's skills arsenal which provides her with the ability to survive disappointment and heightens her resilience in complex environments. A high level of emotional capital possibility provides South African women in male-dominated fields with indispensable mechanisms to adjust to market, policy, legal, technical and technological changes.

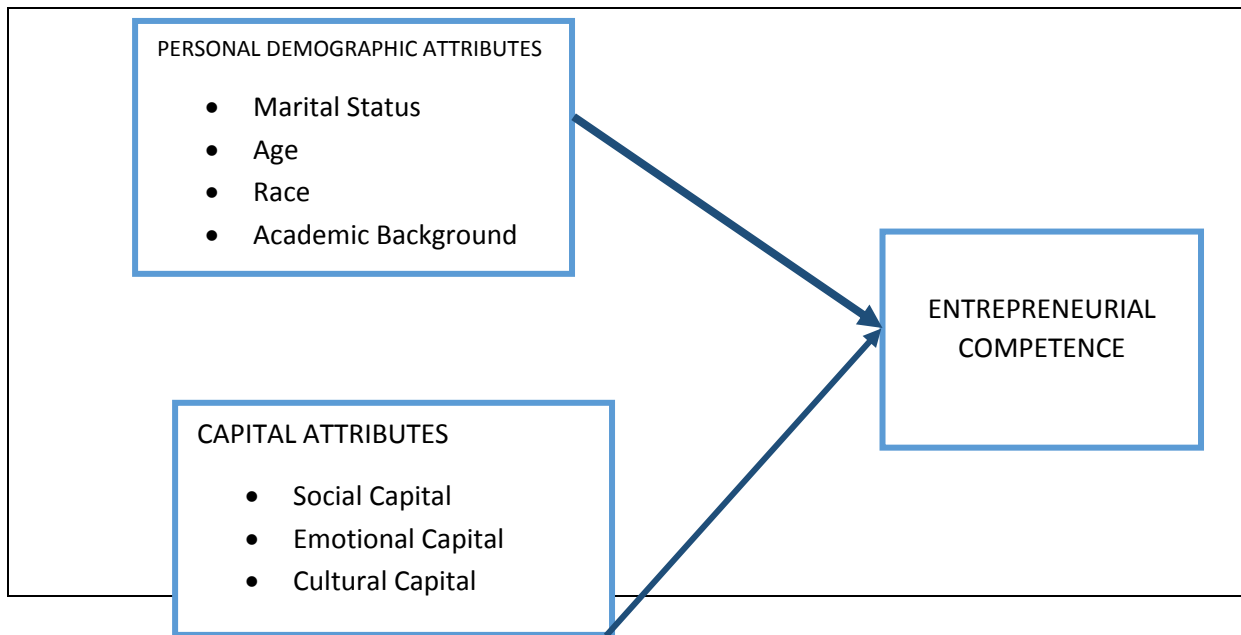


Figure 1. Conceptual framework

Research design

The study adopted a descriptive, explorative cross-sectional survey design. Cross sectional surveys allow the researcher to collect data at a single point in time to develop an informed picture of the phenomenon at that time (Punch, 2003). A cross sectional design generated a vivid picture on the impact of personal demographics and capital variables on entrepreneurial competence of female entrepreneurs at a specific point in time. A descriptive approach provided researchers with opportunities to unravel summarised data on perceptions and attitudes of respondents (Leedy & Ormrod, 2010). Since limited information existed these successful female entrepreneurs with regard to their demographic data, capital forms and their entrepreneurial competences, an exploratory study best suited the investigation.

Unit of analysis, target population and sampling procedure

Female business owners and managers of engineering and construction SMMEs constituted the units of analysis as the focus was on developing a complete demographic, capital and competence profiles of successful women entrepreneurs. The target population consisted of female owner/managers of engineering and construction SMMEs in the Free State Province of South Africa. The databases of the Engineering Council of South Africa (ECSA) and the Construction Industry Development Board (CIDB) provided lists of female-owned/managed engineering and construction firms. A total of 800 female owned/managed engineering businesses in the Free State registered on the ECSA website while 400 female-owned/managed construction businesses registered on the CIDB website during the conduct of study.

Thus, the study population was 1200 female-owned businesses. An online sample size generator at a confidence level of 95% and margin of error of 5% produced 291 units from a population of 1200 units. This sample size was increased to 400 cater for poor response rates. An online random number generator was used to randomly sample the 400 units from the target population from the ECSA and CIDB databases.

Data collection

The researcher solicited data from respondents using structured self-administered questionnaires. The questionnaire sourced feedback on the respondents' selected demographic data, personal traits, forms of capital, entrepreneurial competencies and entrepreneurial success. To establish clarity of items and logical sequencing of the questions,



the instrument was initially pilot tested on 30 female owner/managers of engineering and construction businesses who did not participate in the main study. Of the 400 questionnaires administered by three trained research assistants to the respondents, 340 were completed, representing a high response rate of 85%.

Ethical issues

The researchers sought and obtained the necessary ethical clearance from the University before the study was conducted. Once ethical clearance was granted, the researchers sought and obtained study approval from the Provincial Office of the Department of Human Settlements (Free State Province). More so, the cover page of the questionnaire clearly specified the following: that the respondents were invited to voluntarily participate in the study and were free to withdraw from without any threats of physical or emotional harm. Each respondent was briefed on the purpose of the study and the academic benefits of the research to the researchers. They were also informed that there was no pecuniary reward for their participation. The respondents' rights to privacy was not violated as they were free to complete the questionnaire at times and places convenient to them. Their anonymity was guaranteed by making sure that any personal identity information (e.g. place of abode, cell numbers) were not required when completing the questionnaire and the data was reported in aggregate form to protect their personal identities.

Measuring items

Respondents were asked to complete the self-report questionnaire on demographic details, educational background, nature of the business, previous entrepreneurship and industry experience. In section B, respondents were required to provide information on their capital attributes and entrepreneurial competence. The study's constructs were measured using a 5-point Likert scale, ranging from 'strongly disagree' to 'strongly agree'. Respondents indicated their degree of agreement or disagreement questions on: social capital (5 items), emotional capital-personality (4 items), emotional capital-relational (5 items), cultural capital (7 items) and entrepreneurial competence (6 items). The items were developed based on literature.

Data analysis

Descriptive statistics included frequencies and percentages covered personal data variable (demographic details, educational background; nature of business; previous experience). Spearman's correlation and regression analyses tested the independent variables' influence on dependent variables (i.e. social, cultural and emotional capital) and to predict their influence on entrepreneurial competence, respectively. Analysis of variance tested how entrepreneurial competence varied depending on personal categorical variables.

Instrument credibility

Social capital scale

For instance, social capital scale was developed based on aspects such as individual social networks of the entrepreneurs (Baluku et al., 2018), entrepreneurs' interactions, social trust and reciprocity with individuals that facilitate exchanges of resources (Fukuyama 1995; 2002), sanctions and norms such as mutual respect (Putnam, 1995), and obligations and expectations (Granovetter, 1985; Coleman, 1990). Since these items were extractions from various literature, Principal component analyses were performed on the 6 items of the social capital scale. One factor was extracted using Varimax rotation. One item was deleted because of problematic loadings. A reliability analysis was conducted on the remaining using Cronbach's alpha test. The Cronbach's alpha coefficient for social capital was 0.727.

Cultural capital scale

Emotional capital scale covered the broad ambit of personality and relational capital such as externally introduced values, skills, attitudes, and beliefs that modify one's social dispositions



(Adler & Kwon, 2002); work ethic (Hora & Cohen, 2017), social relations that contribute to entrepreneurial motivation and persistence (Deci & Ryan, 2015). Relational aspects of cultural capital focused on intangible resources in social relationships of the business owner (Baluku et al., 2018) and mutual relationships between the firm or its owner and stakeholders it interacts with (Bronzetti & Veltri, 2013). Personality dimensions focused on entrepreneur's ability to understand oneself and others in relation to business activities (Borg & Johnston, 2013; Humphrey, 2013). Exploratory factor analysis using the principal component method on the seven items of the cultural capital scale showed one underlying factor. The factor loadings for all but one item were acceptable. The Cronbach's alpha coefficient for social capital was 0.860

Emotional capital scale

Emotional capital covers the entrepreneur's self-awareness, self-esteem and personal uprightness (Gratton & Ghoshal, 2003) in his commitment to act entrepreneurially. It also covers the emotional investment in recognising and capitalising on business opportunities and emotional connections between the entrepreneur and 'the idea' (Cardon et al., 2005). Therefore, it emphasises the entrepreneur's abilities to identify and utilize emotions effectively in facilitation of thought and actions (Mishra & Mohapatra, 2009). An exploratory factor analysis on the nine items of the emotional capital scale showed two underlying factors that explained 69% of the variance. The factors were labelled *emotional capital-personality* and *emotional capital-relational* item loadings were acceptable. The Cronbach's alpha coefficient for *emotional capital-personality* was 0.938 and the one for *emotional capital-relational* was 0.856.

Entrepreneurial competence scale

Entrepreneurial competence scale covered an entrepreneur's ability to identify the products, seize quality business opportunities, convert concepts into useable products and services, and solicit products and services of socio-economic value to clients (Man, Lau, & Chan, 2002, Mitchelmore & Rowley, 2010; Mahadalle & Kaplan, 2017). An exploratory factor analysis using the principal component method was conducted on the six items of the entrepreneurial competence scale. The results showed one underlying factor which was labelled *entrepreneurial competence*. The item loadings were acceptable, ranging from 0.804 to 0.943. The Cronbach's alpha coefficient for *entrepreneurial competence* was 0.954.

Results

The demographic profile of respondents

Table 1 illustrates that the study sample was predominantly female (90.8%), a significant percentage of whom were married (42.8%), divorced (20.5%) and single (never married) (19.6%). The 51 years and above had the highest representation (38.4%) closely followed by the 41-50 age group who were 35.4%. Black South Africans formed the majority (65.7%) with coloureds coming second with 17.6%. As shown in Table 1, 43% had matric or below whilst 22.7% had a tertiary certificate and 17.9% had a diploma/degree. Furthermore, most respondents (41.7%) high school was the highest level of education at which they acquired skills. A sizable percentage indicated that they acquired managerial, industry and engineering skills at college level (38%, 47% and 38.3% respectively). A significant percentage (38.1%) of respondents had been active for 6-10 years. Moreover, the largest proportion of respondents' businesses were involved in civil and construction (44.6%), followed by mechanical engineering (42.6%). Most respondents' businesses (50%) were private companies, with 27.8% being close corporations.



Table 1. Demographic variables

Demographic Variables	Category	Frequency	Percentage
1. Gender	Female	305	90,8%
	Male	31	9,2%
2. Marital Status	Never Married	65	19,6%
	Married	142	42,8%
	Divorced/Separated	68	20,5%
	Widowed	57	17,2%
3. Age in years	Below 21 Years	3	1,0%
	21-30 Years	9	3,0%
	31-40 Years	67	22,2%
	41-50 Years	107	35,4%
	Above 51 Years	116	38,4%
4. Origin /Race	Afrikaner	15	4,5%
	Coloured	59	17,6%
	Black (RSA)	220	65,7%
	Indian	18	5,4%
	Other (African)	21	6,3%
	Other (European)	1	0,3%
	Other (Asian)	1	0,3%

Social capital

Table 2 demonstrates that 79.2% of the participants agree/strongly agreed that their relationship with contacts is characterised by mutual respect, respect and reciprocity. A significant (47.5%) percentage of the participants agree/strongly agreed that their businesses upheld close relationships with contacts even though only 15.9% knew their contacts on a personal level. A significant percentage (47.1%) expressed neutral views when asked whether the exchanges of resources and information among their contacts, usually had similar content. The majority (70.5%) where neutral when asked about whether they shared the same ambition and vision as their contacts.

Table 2. Social capital

SOCIAL CAPITAL		Frequency Distribution					%Agree/ Strongly Agree	Descriptive statistics		Latent Factor (Principal component) Coefficient
		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree		Mean	Std Dev	
Our business maintains close relationships with contacts.	Count %	59 17.6%	88 26.3%	29 8.7%	106 31.6%	53 15.8%	47.5%	3.0	1.4	0.442
We know our contacts on a personal level.	Count %	53 15.9%	113 33.9%	114 34.2%	34 10.2%	19 5.7%	15.9%	2.6	1.1	0.679
Our relationship with contacts is characterised by mutual respect, and reciprocity between the parties.	Count %	6 1.8%	5 1.5%	58 17.5%	162 48.9%	100 30.2%	79.2%	4.0	0.8	0.646
The exchanges of resources, information and so on, among our contacts usually have similar content.	Count %	39 11.7%	54 16.2%	157 47.1%	79 23.7%	4 1.2%	24.9%	2.9	0.9	0.715
The contacts from which we receive advice, information for making important decisions know each other, that is, they maintain relationships among each other	Count %	23 6.8%	14 4.2%	214 63.7%	79 23.5%	6 1.8%	25.3%	3.1	0.8	0.689
We share that same ambition and vision as our contacts	Count %	20 6.0%	17 5.1%	237 70.5%	52 15.5%	10 3.0%	18.5%	3.0	0.7	0.817
Cronbach's Alpha								0.727		



Cultural capital

Table 3 illustrates that most respondents (72.3%) affirmed that when they encountered someone from a different culture, they treated them the same way they would treat other persons from their own culture. Similarly, 74.6% expressed that they maintained their own style when attending parties with people from diverse cultural backgrounds.

Conversely, only 33% reported that they celebrated cultural differences when implementing activities. Lastly, 15% of the respondents indicated that they preferred a job culture that is different from their own. Only 15.2% considered themselves as possessing enough cultural expertise.

Table 3. Cultural capital

CULTURAL CAPITAL		Frequency Distribution					Descriptive statistics		Latent Factor (Principal component) Coefficient	
		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	%Agree/Strongly Agree	Mean		Std Dev
When you know you will be meeting someone from a different culture, you treat them as you would any other person from your own culture	Count %	0 0.0%	28 8.3%	65 19.3%	170 50.6%	73 21.7%	72.3%	3.9	0.9	0.233
In getting a job done, I celebrate cultural difference.	Count %	50 14.9%	25 7.4%	150 44.6%	90 26.8%	21 6.3%	33.0%	3.0	1.1	0.717
At parties with people from diverse cultural backgrounds, I maintain my own style.	Count %	23 6.9%	9 2.7%	53 15.8%	228 68.1%	22 6.6%	74.6%	3.6	0.9	0.353
In my daily work, I prefer a job in a culture that is different from my own	Count %	99 30.7%	29 9.0%	145 44.9%	29 9.0%	21 6.5%	15.5%	2.5	1.2	0.935
When thinking about understanding people from different cultures, I am an expert	Count %	78 23.3%	97 29.0%	116 34.6%	24 7.2%	20 6.0%	13.1%	2.4	1.1	0.959
I view myself as having lots of cultural expertise	Count %	55 16.4%	101 30.1%	128 38.2%	30 9.0%	21 6.3%	15.2%	2.6	1.1	0.882
When it comes to knowing how to cope with cultural diversity, others say I am very knowledgeable	Count %	65 19.5%	117 35.0%	99 29.6%	29 8.7%	24 7.2%	15.9%	2.5	1.1	0.855
Cronbach's Alpha								0.860		

Emotional capital: personality

Table 4 reveals that most respondents had very strong personality attributes therefore a high degree of personality capital. A majority (95.2%) were self-directed and could make their own decisions. Moreover, 94.3% of them possessed enough energy and motivation to achieve their professional and personal goals. Most (86.7%) possessed confidence in their own skills and abilities. Only 68.8% of respondents listened well, understood and appreciated their peers' thoughts and feelings.



Table 4. Emotional capital: personality capital

EMOTIONAL CAPITAL – Personality		Frequency Distribution						Descriptive statistics		Latent Factor (Principal component) Coefficient
		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	%Agree/ Strongly Agree	Mean	Std Dev	
I have confidence in my skills and abilities.	Count %	4 1.2%	2 0.6%	38 11.5%	204 61.6%	83 25.1%	86.7%	4.09	0.70	0.924
I believe that I am self-directed and can make independent decisions.	Count %	2 0.6%	2 0.6%	12 3.6%	233 70.2%	83 25.0%	95.2%	4.18	0.58	0.958
I believe that I possess enough energy and motivation to achieve my professional and personal goals .	Count %	2 0.6%	3 0.9%	14 4.2%	229 69.0%	84 25.3%	94.3%	4.17	0.60	0.941
I believe that I can listen well, understand and appreciate the thoughts and feelings of others	Count %	3 0.9%	1 0.3%	99 30.0%	146 44.2%	81 24.5%	68.8%	3.91	0.80	0.892
Cronbach's Alpha								0.938		

Emotional capital – relationships

Table 5 summarises the sub-construct of relational capital which measures how individuals relate with others in their immediate working environment. Most respondents (63.1%) were aware of how their own emotions affected their behaviour and others' emotions. However, (57.6%) were open to new ideas while 56.4% were good listeners, understood and appreciated the thoughts and feelings of others. only 45% were resilient when confronted with setbacks while only 42.4% maintained composure and thought rationally under stress.

Table 5. Emotional capital: relational capital

EMOTIONAL CAPITAL – Relational		Frequency Distribution						Descriptive statistics		Latent Factor (Principal component) Coefficient
		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	%Agree/ Strongly Agree	Mean	Std Dev	
I am aware of how my own emotions affect my behaviour and the emotions of others	Count %	27 8.4%	21 6.6%	70 21.9%	144 45.0%	58 18.1%	63.1%	3.58	1.12	0.620
I believe that I can listen well, understand and appreciate the thoughts and feelings of others	Count %	1 0.3%	1 0.3%	142 43.0%	144 43.6%	42 12.7%	56.4%	3.68	0.71	0.870
I believe that I can maintain composure, think rationally under stress, and keep negative emotions under control	Count %	3 0.9%	5 1.5%	182 55.2%	105 31.8%	35 10.6%	42.4%	3.50	0.74	0.900
I am open to new ideas and can easily adapt to change	Count %	2 0.6%	21 6.4%	117 35.5%	149 45.2%	41 12.4%	57.6%	3.62	0.81	0.889
I can see opportunities and am resilient in the face of setbacks	Count %	2 0.6%	25 7.6%	155 46.8%	106 32.0%	43 13.0%	45.0%	3.49	0.84	0.824
Cronbach's Alpha								0.856		



Analysis of variance

ANOVA tests evaluated how personal (categorical) variables affected the entrepreneurial competencies of respondents. Table 6 shows that marital status has a significant effect on entrepreneurial competence ($F=6.428$, $df_1=3$, $df_2=324$, $p\text{-value}<0.001$). Those who never married (mean=3.392) and those who were widowed (mean=3.427) had lower levels of entrepreneurial competence than the married (mean=3.783) and the divorced/separated (mean=3.965).

Age also significantly impacts entrepreneurial competence ($F=4.503$, $df_1=4$, $df_2=295$, $p\text{-value}=0.002$). The same applies to race ($F=10.965$, $df_1=4$, $df_2=326$, $p\text{-value}<0.001$). The Indians (mean=3.323) and Blacks (mean=3.492) were less entrepreneurially competent while Afrikaners had the highest mean score for entrepreneurial competence (mean=4.478). Table 6. Tests for the effects of demographic factors on entrepreneurial competence

Response Variable: Entrepreneurial competence		Means		ANOVA Tests			
		N	Mean	F	df1, df2	p-value	Comment
Marital Status	Never Married	65	3.392	6.428	3, 324	<0.001	Significant
	Married	139	3.783				
	Divorced/Separated	67	3.965				
	Widowed	57	3.427				
Age in Years	Below 21 Years	2	3.917	4.503	4, 295	0.002	Significant
	21-30 Years	8	3.021				
	31-40 Years	67	3.886				
	41-50 Years	107	3.439				
	Above 51 Years	116	3.833				
Ethnic Origin/Race	Afrikaner	15	4.478	10.965	4, 326	<0.001	Significant
	Coloured	59	4.054				
	Black (RSA)	218	3.492				
	Indian	16	3.323				
	Other	23	4.246				

The ANOVA test also revealed significant differences in mean scores for entrepreneurial competence for respondents of different educational backgrounds. Table 7 shows that levels of entrepreneurial competence also differed depending on the highest level at which managerial, industry and entrepreneurial skills were acquired



Table 7. Academic background of respondents and entrepreneurial competence

Response variable: Entrepreneurial competence		Means		ANOVA Tests			
		N	Mean	F	df1, df2	p-value	Comment
Highest Academic Qualification	None	25	3.640	13.201	5, 325	<0.001	Significant
	Primary	24	3.972				
	Matric/Below	140	3.257				
	Tertiary Certificate	76	4.184				
	Diploma/Degree	60	3.894				
	Postgraduate	6	3.889				
Highest level of education at which managerial skills were acquired	High School	61	3.304	10.024	4, 326	<0.001	Significant
	College Certificate	127	3.475				
	Diploma/Degree	61	4.049				
	Post-Graduate	69	4.056				
	Short Courses	11	3.778				
Highest level of education at which construction/engineering skills were acquired	High School	64	3.266	11.042	4, 326	<0.001	Significant
	College Certificate	159	3.550				
	Diploma/Degree	41	4.033				
	Post-Graduate	62	4.156				
	Short Courses	5	4.367				
Highest level of education at which entrepreneurial skills were acquired.	High School	66	3.240	10.395	4, 325	<0.001	Significant
	College Certificate	128	3.529				
	Diploma/Degree	66	3.975				
	Post-Graduate	65	4.087				
	Short Courses	5	4.167				

ANOVA test examined effects of business experience and entrepreneurial exposure on entrepreneurial competence (Table 8). There are statistically significant differences in entrepreneurial competence between individuals who had previous industry and entrepreneurial experience and exposure and those who did not. Those who had previous exposure to the construction/engineering industry had significantly higher mean scores for entrepreneurial competence than those who did not. The same applies to those who had prior entrepreneurship exposure than those who did not.

Table 8. Tests for the effects of business experience and entrepreneurial exposure on entrepreneurial competence

Response Variable: Entrepreneurial competence		Means		T-Tests			
		N	Mean	t	df	p-value	Comment
Have you ever been employed in the construction industry?	Yes	208	3.927	6.487	329	<0.001	Significant
	No	123	3.270				
Have you ever tried to start a business before?	Yes	194	3.774	2.079	327	0.038	Significant
	No	135	3.554				

Correlation and regression analysis

Correlation and regression analysis tested associative and predictive relations between capital attributes and entrepreneurial competence. The correlation test measures the pairwise relationship between the dependent variable and the independent variable. Multiple regression analysis assesses the relationship between an independent variable and several independent variables simultaneously. The results in Table 9 demonstrate that both social



capital ($R=-0.058$, $p\text{-value}=0.300$) and cultural capital ($R=0.082$, $p\text{-value}=0.144$) were not significantly correlated to entrepreneurial competence.

Table 9. Correlations between entrepreneurial competence and capital attributes

Pearson's Correlations		Entrepreneurial competence	Comment
Social Capital	Correlation (R)	-0.058	Not Significant
	p-value	0.300	
	N	324	
Cultural Capital	Correlation (R)	0.082	Not Significant
	p-value	0.144	
	N	315	
Emotional Capital - Personality	Correlation (R)	0.456**	Significant
	p-value	0.000	
	N	326	
Emotional Capital - Relational	Correlation (R)	0.648**	Significant
	p-value	0.000	
	N	316	
** . Correlation is significant at the 0.01 level (2-tailed).			

Thus, the two sub-constructs of emotional capital (i.e. personality capital and relational capital) were significantly and positively correlated to entrepreneurial competence. Emotional (relational) capital, with a correlation of 0.648 with entrepreneurial competence, had the highest effect size on the response variable.

Following conducting correlation tests, multiple regression analysis conducted are presented in Table 10. The results shows that the four capital sub-constructs significantly predicted entrepreneurial competence.

Table 10. Regression of entrepreneurial competence on capital attributes

Dependent Variable: Entrepreneurial competence	Coefficients				
	Unstandardized Coefficients		Standardized Coefficients	t	p-value
	B	Std. Error	Beta		
(Constant)	0.007	0.039		0.189	0.851
Social Capital	-0.136	0.041	-0.146	-3.340	0.001
Cultural Capital	-0.283	0.050	-0.303	-5.671	<0.001
Emotional Capital - Personality	0.238	0.046	0.244	5.180	<0.001
Emotional Capital - Relational	0.659	0.054	0.681	12.118	<0.001
$R=0.694$, $R\text{-Square}=0.482$					

Social capital negatively impacted upon entrepreneurial competence ($B=-0.136$, $t=-3.340$, $p\text{-value}=0.001$) even though the relationship is significant. The same applies to cultural capital ($B=-0.283$, $t=-5.671$, $p\text{-value}<0.001$). Therefore, the higher the social and cultural capital, the lower the entrepreneurial competence. In contrast, personality and relational dimensions of emotional capital, positively impacted on entrepreneurial competence as shown by the following coefficients: $B=0.238$, $t=5.180$, $p\text{-value}<0.001$ and $B=0.659$, $t=12.118$, $p\text{-value}<0.001$ respectively. The overall regression model demonstrates that the independent variables accounted for 48.2% of the variance in entrepreneurial competence.



Discussion

The aim of this study was to determine the personal and capital profiles of successful female/owner managers of SMMEs involved in the construction and engineering sectors based in the Free State province of South Africa. In addition, it examined personal factors and capital forms with the greatest predictive influence on the entrepreneurial competencies of the sampled respondents.

Most successful female engineering and construction entrepreneurs were married, above 40 years, and were black African. Since the capital-intensive nature of engineering and construction businesses is widely documented (Akaba, 2016, Ramorena, 2016), its prevalence of married entrepreneurs could be attributed to couples/partners pooling resource as an entrepreneurial strategy for overcoming the debt and equity challenges of harsh male-dominated industries. Literature suggest that entrepreneurs with family role models (e.g. entrepreneurial couples, partners and mentors) tend to compensate for limited financial base and entrepreneurial constraints arising from limited business experience by soliciting expert advice, financial support and allowing family role models to shape their strategic entrepreneurial behaviours (Caliendo & Kritikos, 2011; Ozaralli & Rivenburgh, 2016). This is consistent with the Pecking Order Theory's postulation that nascent entrepreneurs pool together financial resources as private equity (e.g. joint private saving) (Myers, 1984; Kum, 2019) to circumvent high transactional costs of borrowing for small entrepreneurial firms (Winborg & Landstrom, 2001).

That most female entrepreneurs were above 40 years ties well with the claim that most opportunity-driven entrepreneurs tend to be older (35–44 years) than necessity driven ones (Bijaoui, 2012; Ndofirepi, 2016) as their opportunity exploitation decisions are partly facilitated by accumulation of business experience and income which enable them to deploy resources and capabilities mobilised to operate business successfully (Rambe, 2019). The fact that most successful women were black African is not surprising as most emerging engineering and construction entrepreneurs, especially those supported by BBEE programmes, are predominantly from historically marginalised groups (Zunguzane, Smallwood & Emuze, 2012; Akaba, 2016).

Most entrepreneurs had a matric qualification (i.e. a grade 12 certificate which is the highest level of high school education) and acquired relevant managerial, entrepreneurial and industry skills at college level. They were involved in mechanical engineering businesses and had been in business for between 6 to 10 years. Their businesses operated as private limited companies and employed between 6 to 20 people. Consistent with the Human Capital Theory, it can be contended that most female entrepreneurs' possession of college education served as essential human capital to the survival of their firms (Bruederl, Preisendoerfer & Ziegler, 1992; Unger, Rauch, Frese & Rosenbusch, 2011). Literature also affirms the indeterminate effect of education level on advancement of entrepreneurial process (see Van Der Zwan, Verheul, Thurik & Grilo, 2013; Dilli & Westerhuis, 2018).

Literature often emphasise the importance of relevant industry experience in career advancement and entrepreneurship in construction. Dainty et al. (2000) affirmed that increases in years of construction experience contributed significantly to social mobility in the company hierarchy. Dainty and Lingard (2006) also emphasised the value of site-based construction experience, early in career, to future advancement and bemoan that female entrepreneurs often lack these developmental experiences.

Moreover, most successful female entrepreneurs had prior exposure to entrepreneurship and the engineering industry. The results resonate with previous literature which associates experience (i.e. industry-specific experience and self-employment experience) with effective entrepreneurial action and activities like pooling resources to secure customers and investors (Unger et al., 2011). The finding also resonates with Dilli and Westerhuis (2018) who affirmed that relationship between human capital (e.g. experience) and an individual's occupational



choice (e.g. entrepreneurship) especially in coordinated market economies where firms rely on non-market relationships such as cooperation.

Capital attributes analyses revealed that most successful female entrepreneurs exhibited high levels of emotional capital attributes namely personality and relational dimensions. Overall, they displayed a comparatively higher personality capital dimension than relational dimensions. The high levels of emotional capital resonates with findings that demonstrate the prevalence of emotional capital among females (Reay, 2004; Gillies, 2006). The fact that most women exuded energy and motivation to achieve their personal and professional goals (an aspect of personality capital) seemed to affirm that in engineering and construction where masculine traits dominate, women often assimilated these traits and hence their invasion of these traditionally male-dominated spaces (Thurasamy et al., 2011).

The limited expression of social capital variables could be symptomatic of persistent social isolation and limited exposure of women entrepreneurs to formal and informal networks – a recurrent theme when explaining the underachievement of women in engineering and construction research (e.g. Dainty, Bagilhole & Neale, 2000, English & Le Jeune, 2012; Francis, 2017). Moreover, the manifestations of low cultural capital signals a problematic/or low 'habitus' (Bourdieu, 1984) among these female entrepreneurs. Since most emerging entrepreneurs are from historically disadvantaged backgrounds and habitus captures their dispositions, habits, and rituals based on social upbringing, which direct their subconsciousness, actions and behaviours when confronted with scenarios in the social world (Ngarachu, 2014), their disadvantaged backgrounds could have undermined enactment of their habitus as far as cultural expertise and inter-cultural interactions are concerned – hence their low cultural capital.

The results also showed that of social, cultural and emotional capital, only emotional capital was significantly correlated with entrepreneurial competence. This was somewhat unexpected given that studies suggest that all three attributes are strongly correlated to entrepreneurship (Ratten, 2015; Tata & Prasad, 2015). The positive relationship between emotional capital and entrepreneurial competence is inconsistent with Ivanova and Sceulovs' (2017) study which could not affirm a direct correlation between competence and emotional capital and encouraged future studies to explore this relationship further. The negative associations between social and cultural capital and entrepreneurial competence deviates from literature which affirms statistically significant positive correlations between these pairs of variables (Mamun, Muniady, Permarupan & Zainol, 2016; Wdowiak, Schwarz, Breiteneker & Wright, 2012). Perhaps the few social and professional connections and the low habitus of these female entrepreneurs explained the negative associations between social and cultural capital and entrepreneurial competence.

Implications for future research

This study demonstrated that most female engineering and construction entrepreneurs were mature adults - a clear indication that the youths were unrepresented in engineering and construction. Drawing on a qualitative approach, future research can explore the reasons for the under representation of youths in these sectors to establish whether financial, technical, educational reasons could explain such under representation.

Future research can also explore reasons for low social and cultural capital reported among these entrepreneurs. Since entrepreneurs with high levels of human capital (especially tertiary education and training) are often expected to develop multiple professional networks, paucity of social and cultural capital among these entrepreneurs with college education and diverse skills needs further investigation.

Moreover, the negative correlations between social and cultural capital and entrepreneurial competence needs further interrogation as it is inconsistent with literature. Further research must be conducted on whether sector-specific influences, firm size and locational factors of these entrepreneurs' businesses mediate and moderate these relations. The positive



correlations between race and entrepreneurial competence is surprising. That white Afrikaners groups exhibited more entrepreneurial competence in sectors where historically marginalised groups were substantially supported financially, technically and entrepreneurially through affirmative action programmes covering women and black Africans, needs further unpacking in future studies.

Conclusion and recommendations

Acknowledging the complexity of the tourism and hospitality industry as a distinct field of economic and social activity, building small business development (Ciochină, Lordach & Sîrbu, 2016) through exploring antecedents of entrepreneurial competence, would be integral to increasing the growth and competitiveness of this important industry. Conceiving female entrepreneurship as a potential driver of this industry would increase opportunities for deepening and widening economic development and social transformation opportunities of tourist areas, through new sustainable businesses, expansion of their risk propensity and their capacity to mobilise resources to realise these opportunities (Ciochină, Lordach & Sîrbu, 2016). Entrepreneurship such as female entrepreneurship presents great potential to shift local production towards expanding peri-urban and rural economic development (Nemirschi & Craciun, 2010) to ensure balanced economic growth of tourist destinations especially rural and peri-urban ones, which often lag urban areas in terms of provision of services and facilities.

The study established personal and capital attributes of successful women operating engineering and construction sector SMMEs in the Free State Province. Evidence demonstrated that most entrepreneurs were predominantly female, married, divorced /separated, above 40 years of age and Black African. Most had attained matric education and lower levels of university education (e.g. certificate or diploma). The study also examined the demographic factors that most influence the entrepreneurial competence of these entrepreneurs. ANOVA results demonstrate that race, age, entrepreneurial exposure, academic level at which engineering, construction and entrepreneurship skills were acquired most influenced the entrepreneurial competence of these entrepreneurs. Evidence also suggest that the two dimensions of emotional capital (i.e. personality and relational) most influence entrepreneurial competence of these female entrepreneurs.

Since youths were most under-represented in engineering and construction, as training institutions, high schools and universities must establish the systemic blockages that hinder their participation in order to increase their exposure and participation in engineering and construction disciplines. This is because early exposure and training in STEM has been considered to heighten youth involvement in entrepreneurship in technical fields in their later professional careers. The limited involvement of single and unmarried individuals in engineering raises critical questions on the capacity of family institutions and society to support entrepreneurship in technical fields. The South African government institutions such as the National Youth Development Agency (NYDA), Industrial Development Corporation (IDC) and the Department of Small Enterprise Development need to take a proactive role in revitalising the role of the family in supporting technical entrepreneurship through community-based development workshops and training programmes. The manifestations of low level of social and cultural capital creates a serious challenge in advancing entrepreneurial competence. Regional business incubators and publicly-financed regional development institutions (e.g. universities, funding agencies) must collaborate with existing female entrepreneurs to build their social and cultural capital networks as these are integral to improving their access to entrepreneurial competence, access to finance and technical expertise relevant to these entrepreneurs' businesses.

Limitations and areas for further research

Finally, several limitations must be considered. First, the measurement of the entrepreneurial competence and various capital attributes was based on the respondents' self-reports. Although widely used in management literature, self-reports may not eliminate bias as



respondents may give feedback which suits their personal agenda. Perhaps combining surveys with interviews may eliminate the risks of reliance on one research instrument.

Since this study covered one province, the results cannot be generalised to all South African provinces. Future studies can include comprehensive samples drawing from the nine provinces of South Africa.

Finally, the study examined uni-directional relationships between the dependent and independent variables which may simplify complex relationships. The inclusion of mediating and moderating variables can provide a more panoramic picture of the configuration and intensity of relationships between variables.

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