

**THE IMPACT OF SELECTED PERSONAL AND SOCIAL CAPITAL VARIABLES ON
ENTREPRENEURIAL SUCCESS: A CASE OF WOMEN-OWNED/MANAGED
ENGINEERING AND CONSTRUCTION SMMEs IN THE FREE STATE PROVINCE**

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APRIL 2020

DECLARATION

I, Thandeka Brightness Ntshangase, student number _____, do hereby declare that the thesis entitled “The impact of selected personal and social capital variables on entrepreneurial success: A case of women–owned/managed engineering and construction SMMEs in the Free State Province” submitted to the Central University of Technology, Free State for the Doctorate in Business Administration is my own independent work and has not previously been submitted by me at another university. I furthermore cede copyright of the thesis in favour of the Central University of Technology, Free state.



05 December 2019

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ACKNOWLEDGEMENTS

To finally produce this work which began in 2017 I was guided, supported and encouraged by many other persons who deserve my gratitude:

- I shall begin with God the almighty, without his will I would have never find the right path.
- My late parents, I wish you were here.
- My brothers Sakhile and Sdingo anything is possible if you just believe.
- My supervisor, Professor Rambe, for his guidance and support.
- Dr MG Ramorena thanks for your support, advice, motivation and lastly for giving me the greatest gift-Education.
- To the Department of Human Settlements, thank you for awarding me a bursary to continue with my studies.
- To the Central University of Technology, Free State thank you for funding this project.
- To all my colleagues, thank you for your contribution in various ways.
- Special thanks to Mr J Akaba and Mr J Klaas for being there when I needed assistance. I am also indebted to Dr Oliver Bodhlyera for analysing the data.

ABSTRACT

The engineering and construction professions are widely celebrated as critical in generating significant breakthroughs in health care; enabling the production of clean energy, advancing world class transportation, reducing global emissions; increasing equitable access to information and communication technologies (ICTs) to marginalised populations; providing clean drinking water; mitigating natural and man-made disasters, protecting the natural environment and managing natural resources. Despite the widely celebrated importance of engineering and construction worldwide, including in South Africa, the level of ownership and management of engineering and construction businesses, especially among South African women, remains low; and women entrepreneurs remain invisible nationally and globally in these highly technical businesses.

Despite the widely held claims that social capital, cultural capital and emotional capital are individually integral to the success of entrepreneurship and the acknowledged role of personal demographic variables (race, age and education) in explaining entrepreneurial competences, what remained unclear is the combined effects of these capital forms and demographic variables on entrepreneurial competences and success of historically-margined groups such female entrepreneurs. This research gap persists because no concerted efforts have been made in entrepreneurial research to connect diverse forms of capital, individual demographics, entrepreneurial competence and success with specific emphasis on under-presented, historically marginalised groups as the focus of study. More so, the focus of engineering and construction research has tended to target male entrepreneurs, thereby obscuring the contribution of successful women in these male-dominated professions.

The current study drew on several multi-level theories (namely Human Capital Theory, Social Capital Theory and General Systems Theory), a quantitative approach and descriptive, exploratory, cross-sectional survey design to explore the effects of demographic variables and capital (social capital, cultural capital and emotional capital) variables on the entrepreneurial competences of female owner or managers operating engineering and construction SMMEs in the Free State Province. The survey, which

drew on sampling frames drawn from the Engineering Council of South Africa (ECSA) and Construction Industry Development Board (CIDB) was administered on 400 entrepreneurs and 340 entrepreneurs respectively who responded to the survey, generating a response rate of 85%.

Drawing on the survey data and a pre-coded instrument for which numerical values were given to different response possibilities, data were coded in preparation for analysis and testing. After coding, the data were subsequently entered into Statistical Package for Social Sciences (SPSS) for detailed analysis. A combination of descriptive statistics (e.g. percentage analysis, frequencies, means and standard deviations) and inferential statistics (T-tests, ANOVA, correlation analysis and regression analysis) were employed to test the proposed relationships between the constructs of the study. Descriptive statistics demonstrated that the female entrepreneurs who owned and managed engineering and construction businesses were predominantly black South African, married and above 40 years of age. The predominance of 40 years and above group seem to suggest that capital and knowledge intensive industries like engineering and construction generally require mature adults who have accumulated industry knowledge and financial capital to successfully run their individual business independently. The results also revealed a strong, positive and statistically significant relationship between different demographic characteristics (marital status, age, ethnicity, academic qualification, and nature of business) and entrepreneurial competence. Only the emotional capital variable was significantly and positively correlated with the entrepreneurial competence variable. While all three capital forms significantly predicted entrepreneurial competence, emotional capital had the strongest effect. Furthermore, the results also revealed that there was a positive and a significant relationship between environment dynamism and entrepreneurial success. The mediation results analysis revealed that entrepreneurial competence positively and significantly mediates the relationship between capital forms and entrepreneurial success. Moreover, entrepreneurial competence positively and significantly mediates the relationship between demographic factors and entrepreneurial success. Furthermore, entrepreneurial competence positively and significantly mediates the relationship between environmental dynamism and entrepreneurial success.

The main theoretical contribution is that the study challenged the Gender-based Theory of Entrepreneurship and expanded the Human Capital Theory by contending that the material conditions of women as far as entrepreneurship is concerned are not just conspicuously external (e.g. financial, technical and market penetration support) as claimed by some gender-based theorists, but also involve internal capabilities such as women's energy, personal resolve, conscientiousness, industriousness and emotional investment as demonstrated by the findings of the study. The second contribution is that the study demonstrated that the success of entrepreneurship transcends the integration of internal and external perspectives to incorporate a complex amalgam of multiple factors located at the personal, interpersonal, and system factors – interacting in dynamic, iterative and often recursive ways.

The study recommends the targeting of females in preferential policies, the institution of more gender mainstreaming programmes to remove the male domination stigma, value and masculine sexual orientation and working conditions of the industry. Traditionally, the industry working environment has been characterised by tough competition, constant relocation and long working conditions thereby necessitating the need for part time career opportunities, task sharing and career breaks for maternity for female owner/managers. Secondly, the study recommends the development of policies that foster a conducive entrepreneurial climate where business opportunities are identified, resources are marshalled, and businesses are developed in support of successful entrepreneurship.

Overall, the study provides some valuable insights into the critical 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 have not been seriously considered.

ABBREVIATIONS AND ACRONYMS

BBBEE	Broad Based Black Economic Empowerment
BWSA	Business Women's Association of South Africa
CATWOE	Customers, Actors, Transformation process, Worldview, Owners and Environmental
CEO	Chief Executive Officer
CIBSE	Chartered Institution of Building Service Engineers
CICES	Chartered Institution of Civil Engineering Surveyors
CIDB	Construction Industry Development Board
CIOB	Chartered Institution of Building
DESTEA	Department of Small Business Development, Tourism and Environmental Affairs
DHSFS	Department of Human Settlements, Free State
DPWI	Department of Public Work and Infrastructure
DTIC	Department of Trade, Industry and Competition
ECSA	Engineering Council of South Africa
EPWP	Expanded Public Work Programme
ICE	Institute of Civil Engineers
ICT	Information and Communication Technology
IDC	Industrial Development Corporation
MDGs	Millennium Development Goals
NHBRC	National Home Builders Registration Council
PCDP	Provincial Contractor Development Programme
RAE	Royal Academy of Engineers
SA	South Africa
SARS	South African Revenue Services

SAWIC	South African Women in Construction
SEDA	Small Enterprise Development Agency
SMEs	Small Medium Enterprises
SMMEs	Small Medium Micro Enterprises
STEM	Science, Technology, Engineering and Mathematics
UK	United Kingdom
UNESCO	United Nations Educational Scientific and Cultural Organisation
US	United States
WHO	World Health Organisation

TABLE OF CONTENTS

DECLARATION	I
ACKNOWLEDGEMENTS.....	II
ABSTRACT.....	III
ABBREVIATIONS AND ACRONYMS	VI
TABLE OF CONTENTS	VIII
LIST OF TABLES	XIII
LIST OF FIGURES	XV
CHAPTER 1: ORIENTATION OF THE STUDY	1
1.1. INTRODUCTION.....	1
1.2. PROBLEM BACKGROUND	5
1.2.1. Limited participation of women in the engineering profession	5
1.2.2. Limited participation of women in the construction sector	7
1.2.3. Inadequacies of gender mainstreaming programmes in South Africa	8
1.3. PROBLEM STATEMENT	9
1.4. RESEARCH AIM, OBJECTIVES AND QUESTIONS.....	12
1.4.1. Research aim	13
1.4.2. Research objectives.....	13
1.4.3. Research questions	14
1.5. AN OVERVIEW OF PARALLEL STUDIES	16
1.5.1. Personal factors	16
1.5.1.1. Age	17
1.5.1.2. Level of education	17
1.5.1.3. Previous business/construction industry experience	18
1.5.1.4. Prior entrepreneurship exposure	18
1.5.1.5. Owner's financial literacy and access to financial resources	19
1.5.1.6. Creativity	20
1.5.1.7. Operational capabilities.....	20
1.5.2. Forms of capital.....	20
1.5.2.1. Social capital	21
1.5.2.2. Emotional capital.....	21
1.5.2.3. Cultural capital	22
1.5.3. Environmental hostility	23
1.5.4. Entrepreneurial competence	24
1.5.5. Entrepreneurial success.....	24
1.6. CONCEPTUAL FRAMEWORK	25
1.7. THEORETICAL FRAMEWORK	26
1.7.1. Human Capital Theory	26
1.7.2. Social capital Theory	28
1.7.3. Systems Theory	30
1.8. METHODOLOGY	32
1.8.1. Research epistemology.....	32
1.8.2. Research approach.....	33
1.8.3. Research design	34
1.8.4. Sampling procedure	35
1.8.4.1. Unit of analysis.....	35
1.8.4.2. Target population	35
1.8.4.3. Sampling	36
1.8.4.4. Data collection.....	37
1.8.5. Ensuring validity	38
1.8.5.1. Content validity.....	38

1.8.5.2. Criterion validity.....	39
1.8.5.3. Construct validity.....	39
1.8.6. Reliability.....	40
1.8.7. Data analysis.....	40
1.8.8. Ethical considerations.....	41
1.9. CHAPTER SUMMARY.....	42
CHAPTER 2: PERSONAL DEMOGRAPHIC FACTORS AND ENTREPRENEURIAL SUCCESS	43
2.1. INTRODUCTION.....	43
2.2. THE NATURE OF DEMOGRAPHIC FACTORS.....	43
2.2.1. Age.....	43
2.2.2. Ethnicity.....	44
2.2.3. Education.....	45
2.2.4. Business training.....	45
2.2.5. Business/construction industry experience.....	46
2.2.6. Entrepreneurship exposure.....	47
2.2.7. Financial literacy and access to resources.....	47
2.2.8. Creativity.....	48
2.2.9. Operational capabilities.....	49
2.3. CONCEPTUALISATION OF ENTREPRENEURIAL SUCCESS.....	49
2.4. THEORIES OF DEMOGRAPHIC FACTORS AND ENTREPRENEURIAL SUCCESS.....	52
2.4.1. Human Capital Theory.....	53
2.4.1.1. Age.....	54
2.4.2. Gender-based Theories.....	56
2.4.3. Perspectives on entrepreneurial success.....	59
2.5. MEASURING ENTREPRENEURIAL SUCCESS.....	61
2.5.1. Profitability.....	62
2.5.2. Customer-related indicators.....	64
2.5.3. Sale growth.....	64
2.5.4. Optimum capacity utilisation.....	65
2.5.5. Employee-related indices.....	66
2.5.6. Business survival.....	68
2.6. STUDIES ON THE RELATIONSHIP BETWEEN DEMOGRAPHIC VARIABLES AND ENTREPRENEURIAL SUCCESS.....	69
2.6.1. The entrepreneur's age.....	70
2.6.2. Ethnicity.....	71
2.6.3. Business training.....	72
2.6.4. Previous business/construction industry experience.....	74
2.6.5. Education.....	76
2.6.6. Prior entrepreneurship exposure.....	77
2.6.7. Owner's financial literacy and access to financial resources.....	78
2.6.8. Age.....	79
2.6.9. Entrepreneurial competence as a mediator between education and entrepreneurial success.....	80
2.6.10. Entrepreneurial competence as a mediator between age and entrepreneurial success..	81
2.7. CHAPTER SUMMARY.....	82
CHAPTER 3: CAPITAL FORMS, ENVIRONMENTAL DYNAMISM AND ENTREPRENEURIAL COMPETENCE.....	83
3.1. INTRODUCTION.....	83
3.2. CONCEPTUALISATION OF CAPITAL.....	83
3.2.1. Classifications of capital.....	86
3.3. FORMS OF CAPITAL.....	88
3.3.1. Emotional capital.....	91
3.3.2. Cultural capital.....	92
3.3.2.1. Embodied capital.....	92

3.3.2.2. Objectified capital.....	93
3.3.2.3. Institutionalised capital.....	93
3.4. THEORIES OF SOCIAL CAPITAL.....	95
3.4.1. Social exchange theory.....	95
3.4.2. Social network theory.....	96
3.5. HUMAN CAPITAL THEORY.....	98
3.6. ELEMENTS OF SOCIAL CAPITAL.....	100
3.7. PERSPECTIVES ON SOCIAL CAPITAL.....	102
3.7.1. Network perspective.....	103
3.7.2. Social structure perspective.....	104
3.8. ENTREPRENEURIAL COMPETENCE.....	106
3.9. IMPACT OF CAPITAL FORMS (SOCIAL, EMOTIONAL AND CULTURAL) ON ENTREPRENEURIAL COMPETENCE.....	107
3.10. STUDIES ON THE IMPACT OF CAPITAL FORMS ON ENTREPRENEURIAL COMPETENCES OF FEMALES.....	110
3.11. ENVIRONMENTAL DYNAMISM.....	111
3.11.1. Environmental hostility.....	112
3.11.2. Environmental complexity.....	113
3.11.3. Previous studies on the moderating/mediating influence of environmental dynamism on business success/performance.....	114
3.11.4. Entrepreneurial competence as a mediator between social capital and entrepreneurial success.....	117
3.11.5. Environmental dynamism as a mediator between social capital and entrepreneurial success.....	118
3.12. CHAPTER SUMMARY.....	119
CHAPTER 4: RESEARCH METHODOLOGY.....	121
4.1. INTRODUCTION.....	121
4.2. RESEARCH PARADIGM.....	121
4.3. RESEARCH APPROACH.....	122
4.4. RESEARCH DESIGN.....	124
4.5. SAMPLING PROCEDURE.....	124
4.5.1. Unit of analysis.....	125
4.5.2. Target population of the study.....	125
4.5.3. Sampling method.....	125
4.5.4. Sample size.....	126
4.6. INSTRUMENTATION.....	127
4.6.1. Choice of Instrument.....	127
4.6.2. Pilot Testing.....	128
4.6.3. Administration of The Questionnaire.....	129
4.7. ENSURING CREDIBILITY.....	129
4.7.1. Validity.....	129
4.7.1.1. Content Validity.....	130
4.7.1.2. Criterion Validity.....	130
4.7.1.3. Construct Validity.....	131
4.7.2. Reliability.....	131
4.8. DATA PREPARATION.....	132
4.8.1. Data Cleaning.....	132
4.8.2. Data Entry and Coding.....	132
4.9. PROCEDURE FOR DATA ANALYSIS.....	133
4.10. ETHICAL CONSIDERATIONS.....	133
4.11. CHAPTER SUMMARY.....	134
CHAPTER 5: FINDINGS AND DISCUSSION.....	135
5.1. INTRODUCTION.....	135
5.1.1. Response rate.....	135
5.2. SAMPLE DEMOGRAPHICS.....	135

5.3. EDUCATIONAL BACKGROUND OF THE RESEARCH SAMPLE	138
5.4. NATURE OF BUSINESS	142
5.5. BUSINESS EXPERIENCE AND ENTREPRENEURIAL EXPOSURE	145
5.6. CREATIVE ABILITIES	147
5.6.1. Taking initiative	148
5.6.2. Resourcefulness	150
5.6.3. Ability to adopt change.....	151
5.6.4. Ranking of all creative abilities.....	152
5.7. CAPITAL ATTRIBUTES	154
5.7.1. Social capital	154
5.7.2. Cultural capital	156
5.7.3. Emotional capital.....	159
5.7.4. Emotional capital - Personality.....	159
5.7.5. Emotional capital – Relationships	161
5.8. ENVIRONMENTAL HOSTILITY/DYNAMISM.....	163
5.9. ENTREPRENEURIAL COMPETENCE	165
5.10. ENTREPRENEURIAL SUCCESS.....	167
5.10.1. Entrepreneurial success in general.....	167
5.11. ENTREPRENEURIAL SUCCESS – ACHIEVEMENTS IN THE PAST 12 MONTHS	168
5.11.1. Achievements in the past 12 months - Business and market share growth	169
5.11.2. Achievements in the past 12 months - Relational Growth	171
5.12. EFFECTS OF CAPITAL ATTRIBUTES ON ENTREPRENEURIAL COMPETENCE	174
5.13. EFFECTS OF PERSONAL FACTORS ON ENTREPRENEURIAL COMPETENCE	177
5.13.1. Effects of demographic factors on entrepreneurial competence	178
5.13.2. Effects of academic qualifications on entrepreneurial competence.....	180
5.13.3. Effects of nature of business on entrepreneurial competence	182
5.13.4. Effects of business experience and entrepreneurial exposure on entrepreneurial competence.....	187
5.13.5 Entrepreneurial competence as a mediator of the effect of demographic factors on entrepreneurial success	187
5.14. CORRELATIONS AND REGRESSION ANALYSIS OF CREATIVE ABILITIES AND ENTREPRENEURIAL COMPETENCE	188
5.15. ENVIRONMENTAL DYNAMISM AS A MODERATOR OF THE RELATIONSHIP BETWEEN FORMS OF CAPITAL AND ENTREPRENEURIAL COMPETENCE	191
5.16. EFFECTS OF PERSONAL FACTORS ON ENTREPRENEURIAL COMPETENCE AFTER CONTROLLING FOR ENVIRONMENTAL DYNAMISM	193
5.17. EFFECTS OF FORMS OF CAPITAL ON ENTREPRENEURIAL COMPETENCE AFTER CONTROLLING FOR ENVIRONMENTAL DYNAMISM	197
5.18. EFFECTS OF FORMS OF CAPITAL ON ENTREPRENEURIAL SUCCESS AFTER CONTROLLING FOR ENVIRONMENTAL DYNAMISM AND ENTREPRENEURSHIP COMPETENCE	199
5.18.1. Entrepreneurial success in general.....	200
5.19. ENTREPRENEURIAL SUCCESS - BUSINESS AND MARKET SHARE GROWTH	201
5.20. ENTREPRENEURIAL SUCCESS – RELATIONAL GROWTH.....	203
5.21. EFFECTS OF PERSONAL AND CAPITAL FACTORS ON ENTREPRENEURSHIP SUCCESS	204
5.21.1. Entrepreneurial success in general.....	204
5.21.2. Entrepreneurial success – Business and market share growth.....	205
5.21.3. Entrepreneurial success – Relational growth	206
5.22. CHAPTER SUMMARY.....	207
CHAPTER 6: CONCLUSION AND RECOMMENDATIONS.....	209
6.1. INTRODUCTION	209
6.2. RECAPPING RESEARCH QUESTIONS	210
6.3. CONCLUSION AND CONTRIBUTION BASED ON EMPIRICAL FINDINGS AND SYNTHESISED LITERATURE ..	212
6.3.1. Research question 1	212
6.3.2. Research question 2	214
6.3.3. Research question 3	216

6.3.4. Research question 4	216
6.3.5. Research question 5	217
6.3.6. Research question 6	218
6.3.7. Research question 7	219
6.3.8. Research question 8	219
6.3.9. Research question 9	220
6.4 THEORETICAL CONTRIBUTION	222
6.5 EMPIRICAL CONTRIBUTION.....	227
6.6 RECOMMENDATIONS FOR POLICY.....	228
6.7. RECOMMENDATIONS FOR PRACTICE	233
6.7.1. Embedding creativity and innovation in entrepreneurship programmes.....	233
6.7.2. Cascade down levels at which entrepreneurial and domain specific skills are acquired .	233
6.7.3. Inculcate entrepreneurial and enterprising values into families, communities and business partnerships.....	234
6.7.4. Investment in the emotional capital and education of female entrepreneurs	235
6.8. IMPLICATIONS FOR FUTURE RESEARCH.....	236
6.9. LIMITATIONS OF THE STUDY	237
6.10. CHAPTER SUMMARY	238
REFERENCES.....	239
APPENDIX A: BIOGRAPHY	319
APPENDIX B: PROOF OF LANGUAGE EDITING.....	320
APPENDIX C: QUESTIONNAIRE	321

LIST OF TABLES

Table 1.1: Initiatives targeting increased women participation in construction	8
Table 5.1: Demographic profile of the respondents.....	136
Table 5.2: Educational background of the research sample.....	140
Table 5.3: Nature of business	144
Table 5.4: Business experience entrepreneurial exposure.....	146
Table 5.5: Exploratory factor analysis of creative abilities	148
Table 5.6: Creative abilities-taking initiative	149
Table 5.7: Creative abilities - Resourcefulness	151
Table 5.8: Creative abilities - Resourcefulness	152
Table 5.9: Social capital	155
Table 5.10: Cultural capital.....	157
Table 5.11: Exploratory factor analysis results of emotional capital	159
Table 5.12: Emotional capital: personality capital	161
Table 5.13: Emotional capital: Relational capital.....	162
Table 5.14: Environmental hostility	164
Table 5.15: Entrepreneurial competence	166
Table 5.16: Entrepreneurial success.....	167
Table 5.17: Exploratory factor analysis results of emotional capital	169
Table 5.18: Business and market share growth	170
Table 5.19: Business and market share growth	172
Table 5.20: Correlations between entrepreneurial competence and capital attributes	175
Table 5.21: Regression of entrepreneurial competence on capital attributes.....	176
Table 5.22: Tests for the effects of demographic factors on entrepreneurial competence.....	179
Table 5.23: Tests for the effects of academic qualifications on entrepreneurial competence.....	182
Table 5.24: Tests for the effects of nature of business on entrepreneurial competence	183
Table 5.25: Post-Hoc Means Groups (Tukey's method).....	185
Table 5.26: Tests for the effects of business/entrepreneurial exposure on entrepreneurial competence.....	187

Table 5.27: Correlations between creative abilities and entrepreneurial competence	189
Table 5.28: Regression model of entrepreneurial competence on creative abilities	190
Table 5.29: Regression model of entrepreneurial competence on capital factors with environmental dynamism as a moderator	192
Table 5.30: Analysis of covariance (ANCOVA) results for the effects of demographic variable on entrepreneurial competence after controlling for environmental dynamism	194
Table 5.31: Analysis of covariance (ANCOVA) results for the effects of educational background on entrepreneurial competence after controlling for environmental dynamism.....	195
Table 5.32: Analysis of covariance (ANCOVA) results for the effects of nature of business on entrepreneurial competence after controlling for environmental dynamism	196
Table 5.33: Analysis of covariance (ANCOVA) results for the effects of Business experience on entrepreneurial competence after controlling for environmental dynamism.....	197
Table 5.34: Regression model of entrepreneurial competence on capital factors, controlling for environmental dynamism	198
Table 5.35: Regression model of entrepreneurial success in general on capital factors, controlling for environmental dynamism and entrepreneurial competence.....	200
Table 5.36: Regression model of business and market share growth on capital factors, controlling for environmental dynamism and entrepreneurial competence.....	202
Table 5.37: Regression model of relational growth on capital factors, controlling for environmental dynamism and entrepreneurial competence	203
Table 5.38: Analysis of Covariance (ANCOVA) model for the effects of personal and capital factors on entrepreneurship success in general.....	205
Table 5.39: Analysis of Covariance (ANCOVA) model for the effects of personal and capital factors on business and market share growth.....	206
Table 5.40: Analysis of Covariance (ANCOVA) model for the effects of personal and capital factors on relational growth	207

LIST OF FIGURES

Figure 1.:1: The guiding framework for entrepreneurial success.....	25
Figure 5.1: Ranking of all creative abilities	153
Figure 5.2: Ranking of business and market share growth items.....	171
Figure 5.3: Ranking of relational growth items	173
Figure 6.1: Revised conceptual framework	220

CHAPTER 1: ORIENTATION OF THE STUDY

1.1. INTRODUCTION

The central place of the engineering and construction professions in human advancement, job creation, income generation and economic growth has been widely acknowledged in literature (Holloway Houston Inc, 2018; Naiyaga, 2011; Trilling & Fadel, 2009; Owen, Stilgoe, Macnaghten, Gorman, Fisher & Guston, 2013; United Nations Educational, Scientific and Cultural Organisation [UNESCO], 2016). The engineering and construction industries are intricately intertwined and responsible for the designing, construction, alteration and expansion of colossal structures, such as national highways, dams, monuments, wooden structures and real estate assets (Holloway Houston Inc, 2018). Both industries contribute to the economic growth, promotion of investment and development of multiple sectors of the economy such as health, transport, education and the national environment. In addition, both sectors tend to service other sectors of the economy through the provision of development and provision of shelter, infrastructure and employment (Akingbagbohun, 2018; Oladinrin, Ogunsemi & Aje, 2012). Finally, the engineering and construction sectors' provision of physical infrastructure for living, industry and transportation, water supply systems, and other structures promotes knowledge and investment spillovers across the extractive, manufacturing and tertiary sectors of the economy (Akingbagbohun, 2018; Winkless, 2016).

Women account for approximately forty per cent (40%) of the work force in South Africa (Organisation for Economic Co-operation Development [OECD], 2012). Their participation in the workforce largely remains within occupations that are traditionally associated with females such as domestic work and agriculture (OECD, 2012). Current trends in the academic sector and business indicate an increase in the proliferation of women in construction as more women are being employed and trained in various construction professions. In the same breath, the increase in number of women entrepreneurs in the industry not only depicts their upward mobility but also the depth of their professionalism and expertise as they execute their duties. Figures from the Construction Industry Development Board (CIDB, 2019) show that 48% of the country's construction enterprises are owned by women. However, the vast majority of these are very small companies. For instance, about 95% of these firms

fall within grades 1-3, which can handle low-value contracts only, while there are only 5% woman-owned enterprises at grade 8, which handle the highest value of contracts.

This study adopts the UNESCO's (2010:6) operational definition of engineering as "...the field or discipline, practice, profession and art that relates to the development, acquisition and application of technical, scientific and mathematical knowledge in understanding, design, invention, innovation and use of materials, machines, structures, systems and processes for specific purposes." The study also defines the construction industry as "general construction and specialised construction activities for buildings and civil engineering works and includes new work, repair, additions and alterations, the erection of prefabricated buildings or structures on the site and also construction of a temporary nature" (UK Standard Industrial Classification (SIC) Hierarchy, 2017). Both definitions may not be exhaustive in the capturing on the broad gamut of activities accomplished by these industries. However, the definitions cover sufficiently the key aspects considered in this study, which focuses on small engineering and construction firms in South Africa.

The engineering and construction fields have both the potential to grow the economy, trigger groundbreaking innovations, inventions and scientific discoveries, and capacity to transform and uplift the quality of life of the contemporary society. For instance, the engineering profession is widely celebrated as critical to: generating significant breakthroughs in health care; enabling the production of clean energy, advancing world class transportation, reducing global emissions; and increasing equitable access to information and communication technologies (ICTs) to marginalised populations (Andrews & N'Dri, 2015; Khalema, Griggs et al., 2016). Engineers are also involved in activities meant at providing clean drinking water; and mitigating natural and man-made disasters, protecting the natural environment as well as managing natural resources (Griggs et al., 2016; Khalema, Andrews & N'Dri, 2015). This field is particularly relevant to the realisation of the Millennium Development Goals (MDGs), which seek to improve the livelihoods of mankind by the year 2030. Much of engineering and construction is predominantly centred around exploring, designing, and creating innovative sustainable solutions to complex problems (Akingbagbohun,

2018). Hence, the Chief Executive Officer (CEO) of the Royal Academy of Engineering submits that the majority of world challenges confronted by human kind, such as climate change, water availability and energy security, can be solved through innovative engineering and construction solutions.

The importance of the engineering and construction professions is acknowledged globally and locally here in South Africa. However, the level of ownership and management of engineering and construction businesses by historically marginalised groups and especially women remains low. The study conducted by Hunt (2016) suggests that globally, female participation in engineering businesses is low with various women who enter this field not remaining long in this field. Thus, the engineering and construction sectors remain stubbornly male-dominated in developed countries where rates vary from around 12% in the United States of America (USA), 8% in the European Community (EU) and 10% in the United Kingdom (UK) (Bureau of Labour Statistics, 2014, Fernando et al., 2014, Francis, 2017).

Similarly, the intended developmental outcomes of most government-sponsored construction projects in South Africa remained elusive (Buys & Ludwaba, 2012) partly due to the marginalisation of women and non-conformance to quality requirements in such programmes (Ramorena, 2016; Zunguzane, Smallwood & Emuze, 2012;). For instance, the construction sector remains a highly sought-after industry and a huge employment creator as noted in the 632,000 jobs that were created in the first quarter of 2018 in South Africa (Statistics South Africa, 2018) and yet women are excluded from this critical sector that steers national economic growth (Aneke, Derera & Bomani, 2017). Martin and Barnard (2013) explore the experiences and coping mechanisms of South African women working in male - dominated sectors (information technology, engineering and mining engineering education) and establish that some organisational practices uphold gender discrimination and bias. These practices include organisations' inadequate accommodation of women's unique physical, identity and work-life balance needs. As a result, women have had to craft survival strategies that include their appropriation of femininity, recourse to masculinity,

seeking mentorship and striving to realise intrinsic motivational factors (Martin & Barnard, 2013).

International experiences point to the marginalisation and the exclusion of women in the critical sectors of the economy. An earlier Australian study by Powell et al., (2009) reveals that women do not encounter the same barriers across construction areas and yet they remain under-represented in construction research, which is a phenomenon that is replicated in other sectors such as engineering and technology academia. Francis (2017) highlights that personal factors, such as education and experience gained at the start of females' careers, and personal decisions that include less male dominated construction firms, accounted for 56% of the variance in Australian female career advancement in the construction sector while interpersonal factors and organisational factors, such as mentorship and training, had a negligible and no effect, respectively. A disconcerting picture is evident in the EU where women constituted 12% of the 2,225,000 workers employed in the construction industry in April-June 2014 (ONS, 2014).

The South African engineering and construction-oriented businesses has introduced support programmes, such as the Western Cape Women in Construction Initiative, Mama Special projects, Women of the Year Awards, Expanded Public Works Programme (EPWP) and Provincial Contractor Development Programmes, seeking to increase women's participation, however, the sector continues to be male dominated (CIDB), 2018). The number of women has been of concern because women are still grossly under-represented in technical/ engineering sectors with the percentage of women graduates in engineering still below 20% in many African countries, and the number of women actively employed in the construction sector being much lower (Women in Construction, 2017). Women also remain underrepresented at workforce levels of the engineering profession. The CIDB's (2018) statistics indicate that women constitute only 6% of the workforce of the engineering sector. The construction sector, which is also significantly dependent on engineering expertise, is no exception. The CIDB's (2018) statistics indicate that women constitute only 10% of the 1 388 million people employed in the construction industry. This evidence points to the apparent

skewed gender distribution of engineering and construction businesses based on ownership and management.

Notwithstanding the measures mentioned in the preceding paragraph, which the South African government has put in place to redress the gender imbalances, the most effective alternative approaches to addressing women invisibility in business leadership and entrepreneurship in a male dominated and resource constrained fields of engineering and construction remain under-explored (Sangweni, 2015). The interrogation of such alternative approaches is critical to increasing women's participation in entrepreneurship and business management, especially in male dominated professions such as science, engineering and construction. There is increasing evidence to support the view that the eradication of poverty, social inequality and deprivation depends largely on the inclusion of women in these aforementioned professions (Hirsch, 2006). Therefore, it is necessary to consider some selected personal and social capital factors, which can potentially influence business success in the afore-mentioned industry.

1.2. PROBLEM BACKGROUND

The underrepresentation of women in engineering and construction businesses in South Africa is a consequence of inter alia: the limited participation of women in such professions and the inadequacies of gender mainstreaming programmes (Ramorena, 2016; Zunguzane et al., 2012;). These factors are elaborated in subsequent sections.

1.2.1. Limited participation of women in the engineering profession

The advancing of woman's participation in business ownership and management remains a topic of interest on South Africa's agenda on socio-economic development (Herrington & Kew, 2014; Birkner & Aderemi, 2015; BWASA, 2015). Research shows that some women have risen to levels of significant responsibility in the business arena (English & Hay, 2015; English & Le Jeune, 2012) and yet the majority of women have remained under-represented in the engineering businesses, with fewer women establishing themselves in these sectors (English & Le Jeune, 2012). This can be

traced back to women's participation in Science, Technology, Engineering, and Mathematics (STEM). A study by Madara and Cherotich (2016) that examined challenges of female students enrolled in Engineering-Education in the School of Engineering at Moi University in Kenya noted that there was a lack of positive female role models, different treatment by male team members as weak members, and occasional harassment from lecturers. This finding demonstrate that gender roles and expectations are implicated in female participation in pre-dominantly male disciplines such as engineering.

It seems the under-representation and limited participation of women in the engineering discipline and profession is also reproduced in advanced economies. Gender disparities are expected to have been breached in advanced economies due to affirmative action and other corrective gender mainstreaming mechanisms but the reality on the ground is different. For instance, British Women remained under-represented in engineering professional bodies in 2014 and constituted 3.1% of Chartered Institute of Building (CIOB) members; 7.8% of Chartered Institution of Building Service Engineers (CIBSE) members; 8.6% of Institution of Civil Engineers (ICE) members; and 8.0 % of Chartered Institution of Civil Engineering Surveyors (CICES) (Clarke, et al., 2015). Blair-Loy et al., (2017) note further in their study on how gender differences manifest in interruptions of academic job interview talks in the American Engineering Departments, female candidates tend to receive more questions, follow up questions and more interruptions from audiences during their presentations. This undermined the impact of their presentations and their opportunity to use their talk to develop compelling conclusions. This phenomenon was attributed to "stricter standards" of competence imposed by evaluators when judging women shortlisted for masculine-typed jobs.

Finally, the limited visibility of female-owned and managed engineering and construction firms can be attributed to the complexities of attracting females to these professions and the high attrition of women in engineering fields at tertiary levels. As Sole et al., (2009), Murray (2014) and Persons (2016) observe, South African women enter engineering degree programmes in greater numbers each year and yet there is

a high rate of attrition of female students before completion of degree programmes with a large percentage of female engineers leaving the profession within 5 years of their graduation. In view of this shortfall in female participation in the engineering profession (women constitute less than 50%), there has been increasing calls for gender parity when developing human capital in this profession and other professions in order to achieve inclusive growth (Bukhari & Sharma, 2014; Kabeer, 2016; Kabeer & Natali, 2013; Kedir, 2014;).

1.2.2. Limited participation of women in the construction sector

The construction profession, which is heavily dependent on engineering expertise, also experiences a shockingly low participation of women in South Africa. Women reportedly own 32.25% of the registered contracting firms in the SA construction industry by end of the year 2016 (CIDB Annual Report, 2018). These contracting firms engage in the following categories of engineering work: civil, electrical, mechanical, building and other specialist classes of work. The above-noted lower representation may not be surprising owing to lower female students' lower throughput rates (as low as 28.3% in some technical courses) in engineering disciplines at tertiary levels (UNESCO, 2015). However, this lower representation of women is paradoxical given the fact that there are more women (comprising 51.2% of the total population) in South Africa compared to their male counterparts (Statistics South Africa, 2016). Finally, the UK has 194 000 firms operating in the construction industry and here, male workers continue to dominate the industry in manual occupations, which accounts for 99.7% of the private-sector workforce (Clarke, 2017).

The persistently low participation of women is problematic. This is because the various gender equity benchmarks, which require that women should have a stake of at least 50% in economic activity and the substantial affirmative action measures that have been put in place to achieve this goal are not being met (Department of Women Affairs, 2015). The suggestion here is that the factors that hinder the large-scale participation of women in the industry persist. Several scholars cite the following factors as hindrances to women business owners and managers' active participation in the engineering and construction industries: discrimination against women, macho cultural

beliefs, work-domestic roles conflict, glass ceilings, slow career progression and male dominance causing attitudinal barriers (Haupt, 2010; Madikizela & Moodley, 2012; Menches & Abraham, 2007; Sangweni, 2015).

1.2.3. Inadequacies of gender mainstreaming programmes in South Africa

Several programmes have been instituted to advance women’s representation and participation in the engineering and construction sectors, and yet there remains a yawning gap between aspirations of these programmes and their actual accomplishments. Table 1.1 below presents the measures adopted to create opportunities for women, specifically in the construction sector.

Table 1.1: Initiatives targeting increased women participation in construction

Initiative	Description
Western Cape Women in Construction Initiative, Department of Transport and Public works (2010)	The Department of Transport and Public Works pledged to award 25% of all road maintenance contracts and 10% of all road construction contracts, as well as bursaries and contractor development learnerships to female contractors and females, respectively.
Mama Special projects	The programme allocated 30 special construction projects to businesses owned by women
Western Cape Construction Women of the Year Awards	Several award categories are offered for women in the construction industry.
South African Women in Construction (SAWIC)	Empowers women to gain access to contracts, training, finance and networks in the construction industry.
Expanded Public Works Programme (EPWP)	60% of all EPWP community-based road maintenance projects are allocated to women.
Provincial Contractor Development Programmes	Aims to improve the performance of construction firms and develop previously disadvantaged contractors, especially women and youth.

(Source: English & Hay, 2015:146)

Other measures were adopted to enhance South African women's participation in male-dominated fields, particularly the science, engineering and technology sectors. The measures include: The White Paper on Science and Technology (1996); the Employment Equity Act No. 55 of 1998; the National Plan for Higher Education (2001); the National Framework for Women's Empowerment and Gender Equality (2001); the National Research and Development Strategy (2002); and the Human Resource Development Strategy for South Africa (2010–30) (cited in Moletsane & Reddy, 2011). The above noted programmes have good intentions and present good opportunities for females to enter male dominated construction and engineering sectors. However, the extent of the programmes' effectiveness cannot be empirically verified.

Finally, the DTI (2011) admits that the South African government's efforts to accomplish the above-noted plans have been destabilised by the dearth of frequent and consistent reporting by national and provincial agencies. Undisputedly, the government requires these gender-based statistics covering services rendered to empower women economically through enterprise development.

1.3. PROBLEM STATEMENT

The debate on harnessing women entrepreneurship capacity in engineering and construction industry is often marked by perspectives that cover individual, interpersonal, organisation and environmental variables. At an individual level, demographic factors, such as age, gender, level of education and business experience in these industries, have been projected as possible individual level barriers to female ownership or management of engineering and construction firms (Akinlolu & Haupt, 2018; Blair-Loy, et al., 2017; Clarke, 2017; Madara & Cherotich; 2016). Regarding gender, Powell and Dainty (2009) interrogated how women engineers engage in gender performance in male-dominated environments as ways of gaining acceptance by their male counterparts. The women employed copying strategies such as acting like boys, accepting gender discrimination, achieving a reputation, seeing the advantages over the disadvantages of being in such a profession and adopting an 'anti-woman' approach.

There is limited research on women entrepreneurship in the less advanced nations with the available studies highlighting environmental contexts in accounting for women's marginalisation. Available research tends to draw predominantly on examples found in Western developed countries and largely ignores similar data in developing countries (Aaltio & Wang, 2015). More so, personal factors are not exclusively responsible for the marginalisation and limited career progression of women in engineering and construction entrepreneurship. Instead, environmental factors, such as social exclusion of women and overt hostility from men (Ness, 2012), and gender stereotypes affirming women as weak team players as well as harassment (Madara & Cherotich, 2016) are integral to females' limited involvement in the engineering and construction industry.

Where personal demographic factors are downplayed, studies have often emphasised other personal qualities such as personal motivation, creativity and operational capabilities as key to entrepreneurial success in technology and engineering-based firms (Reid, de Brentani & Kleinschmidt, 2014; Simon, Bartle, Stockport, Smith, Klobas & Sohal, 2015). In terms of career motivation, quest for prestige and higher financial rewards were advanced as possible reasons for females' involvement in male-dominated fields such as engineering discipline (Madara & Cherotich, 2016) and starting engineering businesses. However, to the researcher's knowledge, none of these factors (i.e. creativity and operational capabilities) have been tested rigorously on female owned and managed construction and engineering firms in the South African context, hence the need to conduct the current study. Furthermore, the focus on personal traits tends to perpetuate unrealistic notions of gender parity and equity in these industries and digress attention from their persistent masculine orientation and discriminatory work practices (Bowen et al., 2011; Dainty & Neale, et al., 2000; Sang & Powell, 2012; Worrall, 2012). The recurrent theme in engineering and construction literature is the conformist posture of these industries in which women are forced to "fitting into" engineering and construction and projects industries that are stubbornly unwilling, or unable, to change (Gale, 1994; Greed, 2000; Francis, 2017; Watts, 2009).

Some studies, focusing on the interpersonal and organisational level, emphasise that women's possession or lack of social, emotional and cultural capital is determining the performance of female owned and managed firms in male dominated fields (Clarke, 2017; Prasad et al., 2013; Širec, Tominc & Rebernik, 2010; Santarelli & Tran, 2013). This deficit model tends to concentrate on conditions missing in the organisational environment and the need to develop organisational strategies and interventions for accommodating women to address challenges that are unique to women's conditions, needs, and aspirations. These strategies include improving female access to engineering education and training, transforming recruitment and retention strategies to retain women engineers and construction professionals, creating more gender inclusive employment and working conditions and transforming the organisational environment (Clarke et al., 2015; Martin & Barnard, 2013). Further strategies include promoting greater gender diversity to ensure improved firm performance and meeting imminent skills shortages (Gale & Davidson 2006; Francis, 2017; Sang & Powell, 2012). However, it is lamentable that such capital forms seem to be in short supply among females as proved by their limited involvement in engineering and construction sectors, especially at a time when female entrepreneurs are in demand in South Africa. As such, the social mobility of women in engineering and construction remains frustratingly slow and women are continually confronted with multiple impediments to the advancement of their business careers than their male colleagues (Dainty et al., 2000).

The environmental perspective focusses on the skewed contribution of women to business leadership, especially their limited visibility in the top echelons; women's asymmetrical participation in entrepreneurship (Paustian-Underdahl, Walker & Woehr, 2014; Businesswomen's Association of South Africa [BWASA], 2015); and the contribution of these industries to promoting economic growth (Naiyaga, 2011; Oladinrin, Ogunsemi & Aje, 2012). Other studies concentrate on the use of equal opportunities and meritocratic explanations for such stark gender disparities in engineering and construction entrepreneurship (Alvesson & Billing, 2009; Birkner & Aderemi, 2015; Mari, 2011). In addition, other studies examined the extent of effectiveness of the operational, emotional and financial support mechanisms provided by the Department of Trade and Industry to ensure high-impact

entrepreneurship by women in growing the South African economy. Despite these efforts, women's participation in career progression and ownership of business in male dominated professions have been associated with challenges of career frustration, heightened intentions to quit and discouragement of new female entrants (Hamel, 2009; Francis, 2017; Kurtulus & Tomaskovic-Devey, 2012; Mavriplis et al., 2010).

In view of the foregoing discussion, what remains underexplored in literature is an integrated perspective that takes cognisance of various personal demographic (education, business experience, entrepreneurship exposure, level of education, financial resources, creativity and operational ability) and inter-personal (capital forms factors) that influence female ownership and management of engineering and construction-oriented ventures (entrepreneurship success). The other complexity relates to understanding how female entrepreneurs' personal factors and social capital factors interact with their entrepreneurship competencies to influence entrepreneurship success, and how environmental factors (e.g. environmental dynamism and hostility) moderate these relationships. Therefore, the problem is the prevalence of selective approaches to explaining the limited female participation (i.e. ownership and management) in engineering and construction Small Medium and Micro Enterprises (SMMEs) – approaches that fail to acknowledge the role of mediating and moderating variables and the influence of collated factors on entrepreneurship success. In addition, it is hard to explain convincingly, in the absence of an integrated perspective on female ownership and management of engineering and construction-oriented SMMEs, the critical factors that determine the entrepreneurial success of the few successful women-owned and managed engineering and construction businesses in South Africa.

1.4. RESEARCH AIM, OBJECTIVES AND QUESTIONS

This section discusses the research aim, objectives and research questions that guide the study.

1.4.1. Research aim

The overarching aim of the project is to develop a broad understanding on the critical success factors affecting women who operate and manage engineering and construction businesses. The study, therefore, seeks to develop a comprehensive integrated model of key success factors of the few female-owned and managed engineering and construction SMMEs. Such an integrated model could contribute to a comprehensive explanation on women's limited visibility in the engineering and construction entrepreneurship and development of durable solutions to their effective participation in these fields.

1.4.2. Research objectives

In order to achieve the above-noted aim, the research objectives of this study are to:

1. Develop a broad profile of successful women in the engineering and construction businesses found in the Free State Province of South Africa.
2. Ascertain how personal factors (i.e. age, owner/managers' educational level, previous exposure to the construction or engineering business, creativity and operational capabilities) facilitate and impede the effective operation of female owned and managed engineering and construction SMMEs.
3. Determine which forms of capital exert the most influence on the entrepreneurial competence of these female owner/managers.
4. Explore which personal factors and capital forms exert greater influence on entrepreneurship competence for these female owner/managers.
5. Explore the capacity of environmental dynamism to mediate the relationship between personal factors, forms of capital and entrepreneurial competence.
6. Determine the effect of individual personal factors on the entrepreneurial competence of female owner/managers of engineering and construction firms after controlling for environmental dynamism.

7. Explore the effect of different forms of capital on entrepreneurial competence of these firms after controlling for environmental dynamism.
8. Explore the relationship between presage factors (i.e. personal demographics and forms of capital) and entrepreneurial success after controlling for mediating factors (i.e. environmental dynamism).
9. Establish which combinations of personal demographic factors and capital forms which most predict the entrepreneurship success of these firms.
10. Determine whether entrepreneurial competence mediates the relationship between forms of capital and entrepreneurial success.
11. Determine whether entrepreneurial competence mediates the relationship between demographic factors and entrepreneurial success.
12. Determine whether entrepreneurial competence mediates the relationship between environmental dynamism and entrepreneurial success.

1.4.3. Research questions

In order to achieve the aim of the study, the following research questions must be answered:

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

4. Which personal demographic factors and capital forms are more significant in shaping the entrepreneurial competence of female owner/managers?
5. To what extent does environmental dynamism moderate the relationship between presage factors (personal demographic factors and forms of capital) and entrepreneurial competence?
6. Which personal demographic factors have a greater effect on the entrepreneurial competence of female owner/managers operating engineering and construction SMMEs after controlling for environmental dynamism?
7. Which forms of capital have a greater effect on the entrepreneurial competence of female owner/managers after controlling for environmental dynamism?
8. What is the relationship between presage factors (personal factors and forms of capital) and entrepreneurial success after controlling for the environmental dynamism and entrepreneurship competence?
9. Which combinations of personal and capital factors have greater predictive effect on the entrepreneurship success of these firms?
10. To what extent does entrepreneurial competence mediate the relationship between forms of capital and entrepreneurial success?
11. To what extent does entrepreneurial competence mediate the relationship between demographic factors and entrepreneurial success?
12. To what extent does entrepreneurial competence mediate the relationship between environmental dynamism and entrepreneurial success?

1.5. AN OVERVIEW OF PARALLEL STUDIES

There is growing consensus on the need to redress the gender disparities in women ownership and management of engineering and construction businesses in South Africa (Department of Trade and Industry [DTI], 2007; English & Hay, 2015; Ramorena, 2016). There is an objective seeking to propel black women to senior executive positions in male-dominated professions. However, the Ten-Year Innovation Plan 2008-2018 of South Africa expresses grave concern over the nation's failure to generate and convert innovative ideas, such as expanding the numbers of black and women scientists, engineers and technology experts, into wider-scale industrial and commercial activities that generate socio-economic returns (Department of Trade and Industry, 2007). In view of these challenges, the redressing of women's underrepresentation in engineering and construction businesses requires an in-depth understanding of the personal and capital (i.e. forms of capital) variables that would drive the entrepreneurship success of female-owned and managed engineering businesses. Entrepreneurship success is conceived to be a consequence of *personal demographic* factors such as age, level of education, previous business experience, creativity and operational capabilities (Blackburn, Hart & Wainright, 2013; Gwija, Eresia-Eke & Iwu, 2014; Marlow & McAdam, 2013; Ngowi, 2017) and *forms of capital* such as social capital, emotional cultural capital (Stam, Arzlanian & Elfring, 2014; Wagner, Beinborn & Weitzel, 2014). As a result, the effective participation of women in engineering and construction entrepreneurship cannot be isolated from a consideration of these factors.

1.5.1. Personal factors

Literature suggests that personal factors such as age, level of education, previous engineering or construction industry experience, prior entrepreneurship exposure, owners' financial literacy and access to financial resources, creativity and operational capabilities are instrumental in shaping the success of emerging female-owned and managed engineering and construction businesses. These factors are elaborated in subsequent sections of this section.

1.5.1.1. Age

Some past studies reveal that age influences a person's expectations about his or her choice of self-employment. This suggests that individuals in different age groups have different perceptions about entrepreneurship. For instance, Kautonen (2010) and Kautonen, Tornikoski and Kibler (2011) observe that elderly Finnish individuals are increasingly showing a higher propensity towards entrepreneurship than individuals in lower age categories. This is because early retirees tend to have comparatively better entrepreneurial know-how, financial means and social capital to successfully launch and manage new business ventures than younger individuals. However, some scholars observe that while older individuals have the means to launch successful ventures in risky environments, they are often unwilling to engage in risky entrepreneurship ventures (Mokgosi, 2016; Weber & Schaper, 2004,). This is because they put more emphasis on the opportunity cost of time and thus prefer investments that yield quick returns in a short time (Levesque & Minniti, 2006) compared to long term investments. The lack of consensus on the influence of age on entrepreneurial pursuits necessitates more research in emerging economies contexts so that more context-relevant conclusions can be drawn. For instance, it would be interesting to ascertain if and the extent to which the entrepreneur's age shapes the uptake of South African women owned and managed engineering and construction businesses.

1.5.1.2. Level of education

A causal link between an individual's level of education and entrance into entrepreneurship has not been clearly established and is ambiguous in academic literature (Gwija, Eresia-Eke & Iwu, 2014). However, there is a convergence of scholarly opinion on the positive correlation between small and medium entrepreneur's level of education and business success (Ayala & Manzano, 2010; Lostrom et al., 2014; Millan, Congregado, Roman, van Praag & van Stel, 2011;). According to Millan et al., (2011) the competencies and skills acquired by entrepreneurs through education is a strong drive of business performance. The cited scholars proclaim that a higher level of education among potential and active entrepreneurs is intricately linked to high quality entrepreneurship, innovation and economic growth.

However, research on South African emerging contractors in the construction industry attribute the challenges these contractors face to their lack of key skills, knowledge and competencies. Martin and Root (2010) observe that emerging contractors fail to develop enduring enterprises because of inadequate knowledge of the construction industry. There is also evidence that potential suppliers and clients have little faith in conducting business with contractors with limited levels of technical knowledge and education (Mohlala, 2015). However, the preceding observations are based on studies, which did not differentiate between the effect of owner's level of education on women and men owned businesses. Results that are much more interesting would reveal such gender distinctions and give a broad understanding of the different critical success factors for men and women led businesses.

1.5.1.3. Previous business/construction industry experience

The relationship between business success or failure and the owner/manager's experience in business has been widely investigated in the South African context (Chadhliwa, 2015; Martin & Root, 2010; Ntuli & Allopi, 2014; Worku, 2016). Mavetera, Sekhabisa, Mavetera and Choga's (2015) study on factors influencing the success of construction projects by emerging contractors in the Mahikeng area of South Africa reveals that several emerging contractors in the construction industry had challenges in completing construction projects. This was attributed mainly, to owners and managers' lack of construction project skills and experience. Other findings that corroborate such research underscore a positive correlation between a firm founder or owner's previous professional exposure and business success (Baptista, Karaoz & Mendonca, 2014; Eschker, Gold & Lane, 2015; Gottschalk & Niefert, 2015). However, the main limitation of the aforementioned studies is the failure to consider the gender dimension in their analysis. The findings could have been more informative had they addressed how previous professional exposure affected engineering and construction businesses owned by men and women.

1.5.1.4. Prior entrepreneurship exposure

Prior entrepreneurship exposure relates to an individual's personal history that is linked to entrepreneurship such as having entrepreneurial parents or prior work

experience in a small or newly founded firm (Zapkau, Schwens, Steimetz & Kabst, 2015). The possession of entrepreneurial ties affords individuals the opportunity to acquire both human capital and financial capital (Dunn & Holtz-Eakin, 2000). However, what is not clear is the relationship between such exposure and post-entry business performance. Results from a study by De Jong and Marsilli (2015) reveal that an individual's prior entrepreneurial exposure is only positively associated with business survival in cases where the individual is taking over an existing business. Paradoxically, prior entrepreneurial exposure is negatively associated with the post-entry survival of businesses started by serial entrepreneurs. Following the findings of the preceding study, the influence of prior entrepreneurship exposure on business success can be understood if analysed in the context of other contingent factors.

1.5.1.5. Owner's financial literacy and access to financial resources

Convenient access to finance at affordable rates is critical to the success of any business enterprise (Adomako & Danso, 2014; Wiklund & Shepherd, 2005). Neneh's (2016) study on the effect of the owner's financial literacy on firm performance, carried out in the Free State Province of South Africa, reveals a positive correlation between the variables. However, the study findings also reveal that the average SMME owner had low levels of financial literacy and access to financial resources. It can be inferred from these findings that the availability of financial resources to SMME owner/managers with limited financial understanding has a negative effect on business success. Numerous other studies undertaken using South African SMMEs in the engineering and construction sector as entities for analysis indicate that the survival of such entities is to a large extent undermined by the owner/initiator's limited financial resources and financial management skills (Chadhliwa, 2015; Ntuli & Allopi, 2014; Worku, 2016). This is further worsened by the fact that most of these owners are from historically disadvantaged groups, which are still trying to establish themselves in the sector (Mohlala, 2015). It has, however, not been scientifically proven whether women entrepreneurs in the sector fare worse than men.

1.5.1.6. Creativity

Baer (2012) defines creativity as the development of ideas that are both novel and useful, either in the short or long term. Since the engineering profession is characterised by the frequent performance of highly complex tasks and activities such as designing and inventing products, engineering entrepreneurship demands that the female entrepreneur possess considerable creativity and by extension creative capabilities (Hubka & Eder, 2012; Jordaan, 2015; Ngowi, 2017). The rapid technological change in the business environment, which creates both opportunities and threats for emerging businesses requires entrepreneurs to be creative in order to match and outwit competitors in the proximal fields (Chen-Cheng, 2009). Thus, the possession of divergent and convergent thinking capabilities as foundations for creativity would be an asset to potential and existing engineering and construction entrepreneurs (Ramorena, 2016; Reid, de Brentani & Kleinschmidt, 2014).

1.5.1.7. Operational capabilities

For the purpose of this study, operational capabilities are described as what the firm requires in order to implement its strategy and achieve overall organisational goals (Hiatt & Sine, 2014). Operational capabilities are usually measured at the firm level as a set of resources, knowledge, skills and routines that enable a firm to perform its strategic functions and reflect the owners and top management's abilities (Tatikonda, Terjesen, Patel & Parida, 2013). In other words, entrepreneurial success in the engineering and construction field is inevitable for those entities possessing strong operational capabilities in the following areas: management of human and technical resources, internal communication, planning and scheduling, project management and leadership (Luthra, Garg & Haleem, 2015; Zunguzane, Smallwood & Emuze 2012).

1.5.2. Forms of capital

There is a growing body of literature that acknowledges the possession of various forms of capital, such as social capital, emotional capital and cultural capital, as instrumental to the success of businesses, including those in the engineering and

construction fields (see Estrin, Mickiewicz, & Stephan, 2013; Gaddis, 2013; Shepherd, 2004). These forms of capital are elaborated in subsequent sections.

1.5.2.1. Social capital

Social capital comprises networks of relationships with individuals that one knows (Gedajlovic, Honig, Moore, Payne & Wright, 2013). The networks manifest in the form of repeated group activity, such as the incidence of meetings and other formal interactions, social and family relationships, informal get-togethers and other social events. These associations facilitate the identification, pooling and distribution of scarce resources, which could otherwise have not been available to an individual entrepreneur (Light & Dana, 2013). Therefore, the significance of social capital lies in its role in augmenting the impact of one's education, experience, and financial capital. Estrin, Mickiewicz and Stephan (2013) proclaim the possibility of converting social capital into economic capital. Arguably, the breadth of South African's social capital is a critical success factor for entry and effective participation in the engineering and construction industry given the male dominance in these sectors. Thus, there is a perceived information asymmetry between males and females given the former gender's established knowledge and depth of relationships with markets, sources of finance and suppliers. This often works to the disadvantage of female players and may undermine their effective operation in engineering and construction businesses, leading to their failure and exit from the industry.

1.5.2.2. Emotional capital

Emotional capital relates to an individual's capacity to act and get things done through the support of vibrant social networks of relationships (Gratton & Ghoshal, 2003). This depends on one's level of self-awareness, self-esteem and personal uprightness. According to Shepherd (2004), emotional capital is a part of an entrepreneur's skills arsenal that provides him/her with the capacity to cope with failure and enhances their resilience in complex environments. Hence, a high level of emotional capital would afford South African women in male dominated fields with essential mechanisms to adapt to market, policy, legal, technical and technological changes and complexities

in engineering and construction businesses given the high level of subtle environmental hostility that females encounter in such fields.

1.5.2.3. Cultural capital

According to Valdez (2012), cultural capital relates to a person's social resources as evidenced by their intellect, lifestyle and manner of speech, which promote one's social flexibility in a class-ridden society. This takes three forms, and these are the embodied, objectified and institutionalised states (Erel, 2010). A key component of cultural capital is cultural habitus, which is a system of dispositions such as that which is required to run engineering and technology businesses that combines an individual's past experiences and enhances his/her resilience in the face of environmental hostility and difficulty (Gaddis, 2013). Finally, these dispositions, which have implications for business management, can be acquired through family experiences, education and institutional socialisation (Lamont & Lareau, 1988, Madzima, 2010).

The level of an individual's cultural capital is dependent on one's position on the social strata (Parcel & Hendrix, 2014). The higher one is on the social strata, the more they are endowed with cultural capital. As such, female individuals with higher social positioning in society would be expected to have higher cultural capital, which would increase their sense of agility and resilience in male dominated businesses such as engineering and construction. For Valdez (2012), the possession of cultural capital is positively correlated to entrepreneurial success. This is because of the relatively easy access to financial and human resources that cultural capital affords to entrepreneurs. In the context of the current study, it is logical to assume that current and potential female engineering and construction entrepreneurs who possess higher cultural capital will fare better in male-dominated career fields like engineering and construction compared to their counterparts with lower cultural capital due to the complex, masculine and often gender-discriminatory nature of the sector.

1.5.3. Environmental hostility

Findings from previous studies undertaken in the South Africa construction and engineering sectors reveal that gender-based discrimination is a key hindrance to women's participation and retention in these sectors (English & Le Jeune, 2012; Haupt & Fester, 2012; Ndhlovu & Spring, 2009; Verwey, 2007). A study conducted by Martin and Barnard (2013) on the experience of women in male-dominated occupations in South Africa reveals that official and subtle structural practices, which endorsed gender discrimination and prejudice were the key trials that women face in these occupations. These practices encompassed the insufficient provision of distinctive physical, personality and work-life balance support systems to female managers and employees. Such discriminatory practices force women to leave these fields for more female-friendly fields.

Chiloane-Tsoka (2013) underscores the crippling role of women as homemakers, which diminishes their determination to start up business entities in male-dominated fields. The same scholar also identifies the lack of access to networks of information to lobby and the lack of access to capital due to gender-bias of financiers as a hindrance. As some previous studies have proven, these factors also apply to female entrepreneurship in general (Deborah, Wilhelmina, Oyelana & Ibrahim, 2015; Naguib & Jamali, 2015; Zhu, Kara, Chu & Chu, 2015).

Overall, these challenges are not unique to the South Africa context as some studies from across the globe confirm the under-representation of women in the field of Science, Technology, Engineering and Mathematics (STEM). For instance, Castillo, Grazi and Tacsir's (2014) study on gender gaps in STEM careers in Latin America emphasises gender-biased promotion practices, stereotypes and conflicts between work and family roles as hindrances to female participation in the traditionally male dominated fields, such as engineering and construction fields.

1.5.4. Entrepreneurial competence

There is no single appropriate definition of entrepreneurial competencies. However, there is convergence of scholarly opinion on some of the elements, which constitute entrepreneurial competencies. These include idea generation, innovation skills, envisioning opportunities, product innovation, willingness to take risks, environment scanning for opportunities and risk-taking (Kyndt & Baet, 2015; Mitchelmore & Rowley, 2013; Sanchez, 2013). In addition, Men and Lau (2000) summarise entrepreneurial competencies as opportunity, organising, relationship, strategic, commitment and conceptual competencies. This study considers entrepreneurial competencies as the skills, knowledge, behaviours and attitudes required to perform entrepreneurial roles effectively (Brophy & Kiely, 2002). In addition, the current study proposes that the flourishing of entrepreneurial competencies and the entrepreneurial success of South African women entrepreneurs in engineering and technology businesses could be an outcome of the interaction of selected demographic, psychological and capital variables moderated by environmental dynamism.

1.5.5. Entrepreneurial success

The concept of entrepreneurial success is complex and means different things to different people. Some scholars consider entrepreneurial success as growth in profits, sales, market-share, income of the owner and even the growth in number of employees (Fisher, Martz & Lobo, 2014; Halabi & Lussier, 2014). Yet other scholars consider the number of years of survival of an entrepreneur's business in a particular industry as evidence of entrepreneurial success (Coad, 2014; Rey-Martí, Porcar & Mas-Tur, 2015). The preceding measure is relevant to the current study given the high attrition rate of South African female entrepreneurs in the engineering and construction business sectors due to the real and perceived environment hostilities to women in such sectors. Hence, the current study seeks to examine the factors and processes that enhance the entrepreneurship success of South African women in these career fields. Following Davidsson and Hoenig's (2003) proclamation that entrepreneurs pursue entrepreneurial careers because of the need for financial rewards thereof, this study conceives entrepreneurial success from an economic success perspective of the business measured in terms factors that include profitability, growth, sales growth, market-share and income of the owner.

1.6. CONCEPTUAL FRAMEWORK

An intensive literature review, the researcher's own experience, and thinking connections among the theory (systems theory) and their relation to the research topic inform the conceptual framework used in this study, which is presented in Figure 1 below:

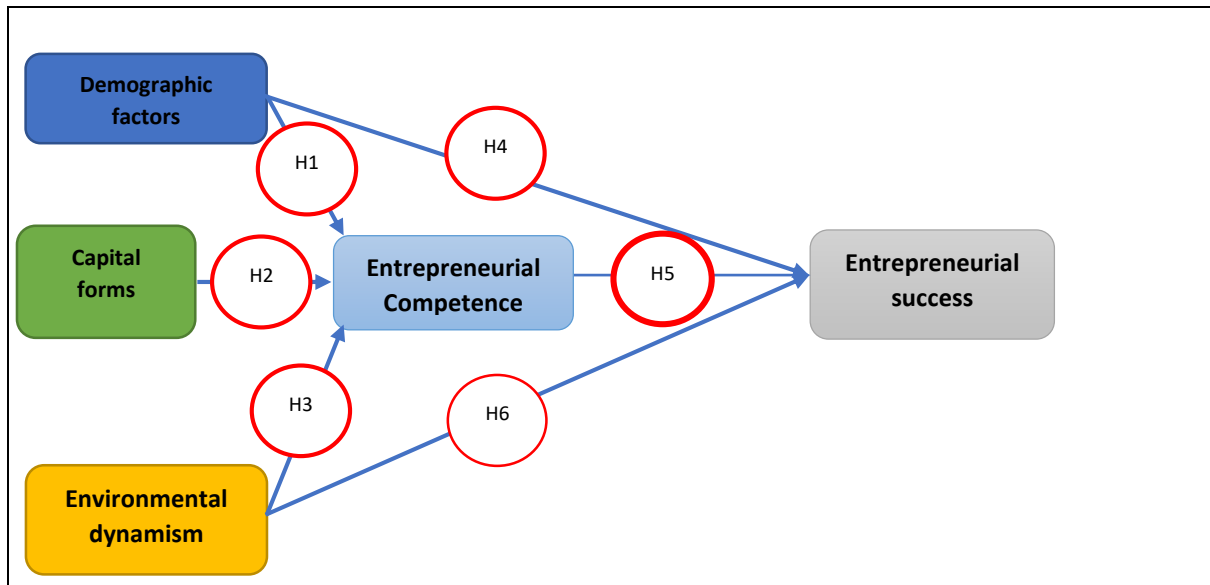


Figure 1.:1: The guiding framework for entrepreneurial success

The study proposes that personal demographic factors and forms of capital are instrumental presage factors in shaping entrepreneurial behaviour and ultimately entrepreneurial success. However, these presage factors do not interact directly with entrepreneurship competence and entrepreneurship success but are mediated by the nature and dynamism of the entrepreneurship environment. Therefore, entrepreneurial success is not a straightforward outcome but a consequence of the mediated effects of the dynamism of the entrepreneurial environment (especially the nature and extent of hostility of the environment such as the nature of the tax regime, legislative policy and height of political interference) of possession of entrepreneurial competence by the entrepreneur.

1.7. THEORETICAL FRAMEWORK

The study seeks to explore the relationships among? *individual demographic* (age, education, business experience engineering and construction, entrepreneurship exposure, financial resources, creativity and operational ability), *organisational* (social capital, emotional capital and cultural capital variables) and *environmental factors* (environmental dynamism, environmental hostility), entrepreneurial competence and entrepreneurial success. This presents three main theories that are relevant to this study. The theories include the Human Capital Theory, Social Capital Theory and General Systems Theory. Both the Human Capital Theory and Social Capital Theory are elaborated on in the literature review and as such, a synthesised summary of both theories is provided in this section. The dynamic capabilities theory is considered with reference to personal traits such as creativity and operational capabilities, and gender theories discussed with reference to female entrepreneurs' limited access to financial resources to pursue entrepreneurship. Nonetheless, this study is broadly informed by *person-centric* theories (Human capital theory, including gender theories and capabilities theories), *social centric* theories (social capital theory) and *system-centric* theories (General systems theory).

1.7.1. Human Capital Theory

Human Capital Theory, whose origins are in macro-economic development, is often attributed to the work of Becker (1964) who emphasised the fundamental economic and social significance of investments in human beings to national economic growth. Schultz (1970) elaborates the theory further elaborated by applying the human capital concept to the advancement of the theory of entrepreneurship. The central argument in Schultz's (1970) thinking is on the capacity of entrepreneurs to correct disequilibrium in the economy through rational and efficient reallocation of resources to ensure equilibrium. Urban and Kongo (2015) submit that, this theory maintains that the cognitive capacities of individuals are expanded by knowledge and the effect of such expansion is more efficient and productive entrepreneurial activities. Therefore, for Schultz (1970), the possession of human capital resource is fundamental to the pursuit of entrepreneurship processes as individuals must possess sophisticated abilities in order to exploit opportunities successfully (Urban and Kongo, 2015).

The theory postulates that humans are endowed with human capital attributes such as education, experience, knowledge, and skills which are fundamental resources to the entrepreneurial success of firms (Florin et al., 2003; Pfeffer, 1994; Unger et al., 2011) and exploitation of entrepreneurship opportunities (Bayon, Lafuente, & Vaillant, 2016). These attributes are considered as intangible resources, that is, distinct properties that entrepreneurs would have gained through experience and education (Shree & Urban, 2012). Investors usually attach great importance to the past and present individual experiences of entrepreneurs in their judgement of the potential capabilities of firms (Stuart & Abetti, 1990; Unger et al., 2011). Similarly, venture capitalists prioritise the possession of experience and demonstration of management skills in their selection of entrepreneurs that they can fund (Zacharakis & Meyer, 2000).

Research reports a positive relationship between possession of human capital and entrepreneurship success (Bosma et al., 2004; Cassar, 2006) and considers human capital as integral to the process of entrepreneurship (Haber & Reichel, 2007). In addition, Parker's (2009) views on the personal and exogenous factors that affect engagement in entrepreneurial behaviour present age as one of the fundamental determinants of entrepreneurship.

Yet other studies have questioned the lack of clarity in the magnitude of this relationship (Unger et al., 2011) while some have demonstrated that human capital does not always trigger positive relations with performance of ventures (Chawla, Khanna & Chen, 2010). For instance, evidence suggests that an over-investment in education that results in high certification could undermine individual risk taking whilst under-investment may encourage it (Urban & Kongo, 2015). Other evidence suggests that there is a negative relationship between human capital and the pursuit of entrepreneurship where highly educated individuals in emerging economies prefer high paying jobs in formal economic sectors than becoming entrepreneurs (Amaral, Baptista & Lima, 2011).

1.7.2. Social capital Theory

At the interpersonal and organisational levels of conceptualisation and analysis, social capital provides useful lens for understanding the role of capital forms in business operations and entrepreneurship success. The term capital has its origins in the foundational works of Marx (1933/1849; 1995/1887) in which capital is generated from the exploitation of the working class (i.e. proletariat) by the industrial class (i.e. Bourgeoisie). Capital occupied two roles, first, it is a component of surplus value generated by capitalists and second, it constitutes an investment (in generation and circulation of commodities) for capitalists, with expected returns in a marketplace (Marx, 1933/1849; Lin, 1999). Therefore, when conceived as constitutive of surplus value, capital is an outcome of a process but can also be conceived as an investment process that generates and captures surplus value (Lin, 1999). In addition, entrepreneurs consider economic capital (e.g. start-up and working capital) as an important capital form for the start-up, and successful running of a business and for entrepreneurial success.

Häuberer (2011) highlights that there are three kinds of capital in society, which are economic, cultural, and social capital, and that each can be converted into each other using transformation labour. For instance, economic capital (e.g. money) can be used to purchase social artefacts such as crafts (cultural capital). In Bourdieu's (Bourdieu & Passeron, 1977; Bourdieu, 1990) terms, constitute the dominant class' investments in reproduction of symbols and meanings, which dominated classes often misrecognise and internalise as their own. The purpose of elite education, therefore, is to indoctrinate the masses into internalising these symbols and meanings developed through inter-generation transmissions by the dominant classes (Lin, 1999). Therefore, emerging female entrepreneurs can benefit from the transmission of entrepreneurial education and its application into their business to secure funding, improve their business networks and expand their markets in ways that guarantee entrepreneurship success.

The most common discussed and conceptualised form of capital is social capital. Bhandari and Yasunobu (2009:8) provides a more comprehensive definition of social

capital as “a multidimensional phenomenon encompassing a stock of social norms, values, beliefs, trusts, obligations, relationships, networks, friends, memberships, civic engagement, information flows, and institutions that foster cooperation and collective actions for mutual benefits and contributes to economic and social development.” Nonetheless, Bourdieu’s (1983) social capital theory is one of the most discussed variant of capital theory. Bourdieu argues that different groups in society possess and display varying amounts of social capital at their disposal. For instance, highly learned individuals would demonstrate high amounts of cultural capital due to their high levels of knowledge and yet may possess less economic capital, while entrepreneurs may dispose more economic capital but less cultural capital (Häuberer, 2011). The main argument for Bourdieu (1983) is that the effective development of a capital form hinges on its area of application and transformation costs needed to convert capital from one form to another (Bourdieu, 1983). For instance, money possess the greatest effectiveness in the economic sphere because it can be exchanged for any commodity, but the same cannot said of education, which is hard to exchange for other goods in the economic sphere (Häuberer, 2011). Thus, given the limited supply of different forms of capital, those in possession of each form of capital, strive to reproduce themselves to maximise their dominance and they foster strategies to acquire and maintain these goods materially and symbolically.

Bourdieu (1984) further contends that the power of the strategies that one can use to get and maintain different forms of capital, is a function of the volume and structure of capital group possess, capital structure reproduced, value of the capital form relative to its structure and institutionalised instruments for reproduction of the group (Bourdieu, 1984). An application of this to the entrepreneurship means that, the currency of social capital for the realisation of entrepreneurship success can be a function of the combinations of capital the entrepreneurs has, the industry in which the entrepreneur operates his or her business and the extent to which they have individually and collectively institutionalised each form of social capital. The most prominent authors on capital, especially social capital, are PBourdieu (1986), James Coleman (1988), Robert Putnam (1993), Francis Fukuyama (1995), Nan Lin (2001), OECD (2001), and the World Bank (2007). However, this study draws on Bourdieu’s

capital theory as other theories are discussed later in Chapters 3 and because Bourdieu's theory has wider application compared to other theories on social capital.

1.7.3. Systems Theory

Flood and Jackson (1991) regard a system as a complex but intricately interlinked network of components, which exhibits synergistic properties – i.e. the whole is greater than the sum of its parts. Mele, Pels and Polese (2010:15) also define a system as “an assemblage of objects united by some form of regular interaction or interdependence” and whose environment is clearly recognisable. Entrepreneurship success can be conceived as a product of the interaction between individual demographic factors, individual traits (operational capabilities and creativity), entrepreneurial competence and their interaction with a supportive entrepreneurial environment. The environment distinguishes the internal components of the (physical, conceptual, or artificial) system its external components and makes inputs, processes and outputs from the system distinguishable to the actors of the system (Chikere & Nwoka, 2015; Von Bertalanffy, 1973). In an entrepreneurial context, the environment could comprise components such as the entrepreneurial policy, the tax regime for SMMEs, the pricing policies of the market and the incentive regime offered to SMMEs by government institutions. Therefore, the entrepreneur promotes his or her business by employing strategic attenuating and amplifying actions to their business that allows it to modify the boundaries between the system and the individual systems (Mele et al., 2010).

The systems theory, which has historical origins in the works of multiple scholars (Lazlo, 1996; Meadows, 2008; von Bertalanffy, 1968), postulates that a system comprises rationally connected elements that strive towards the realisation of a unified shared purpose (Golinelli, 2009; Luhmann, 1990). As a result, a holistic understanding of a system or a phenomenon requires the application of a holistic vision of tracing interactions between elements rather than just disintegrating these individual parts and transforming them (Mele et al., 2010). The system (i.e. entrepreneurship ecosystem) that gives rise to entrepreneurship success (output) should be conceived based on the intense interactions between human elements (personal demographic variables and personal traits), and valuable relations and resources generated in the social system

(social, emotional and cultural capital variables), which trigger improvements in the entrepreneurship competences of the entrepreneur. Therefore, a strategic coordination and timely as well as effective delivery of these multi-level interactions leads to entrepreneurship success as an outcome variable.

For Kast (1972) systems can be open or closed systems, where open systems allow for the exchange of information and material resources with their environments while closed systems do not permit such dynamic exchanges and interactions. Entrepreneurship is one example of an open system in which an engineering and construction entrepreneur, identifies human, material and financial resources from the entrepreneurial environment, which they convert into products, information, knowledge and services through business operations to ensure their entrepreneurial success. Some outputs (knowledge and information) can be related back into the system as feedback for consumption by the system. Therefore, an open system, which comprises an Input-Transformation-Output Model serves as a transformation model that transforms inputs from the environment into outputs (Kast, 1972; Lima, 2017).

With reference to systems, Checkland and Scholes (1999) propose the need to identify and understand components of CATWOE (Customers, Actors, Transformation Process, *Weltanschauung*, Owner(s) and Environmental Constraints). The customers are considered as victims or recipients of the products of the transformation process. The actors are the individuals (e.g. engineering and construction employees and managers) who facilitate the transformation process of inputs to produce outcomes. The transformation process involves the conversion of human labour, knowledge, experience and skills into complex engineering and processes (e.g. structural models, engineering and project activities – material costing, quantity surveying, engineering and construction designs, and erection of structures) into products and services (engineering and construction consultancy, artefacts, and building and structures). Images (*Weltanschauung*), are the ‘worldviews’, which are subjective articulations used by individuals (entrepreneurs, managers and employees) to understand reality. Finally, an entrepreneur is the business owner who works within the provisions and constraints of the environment (construction legislation and bylaws, SMMEs’ funding

policies, pricing policies, economic environment; stakeholders) to deliver engineering and construction solutions to clients and society.

In summary, the engineering and construction entrepreneurship system is characterised by recurrent sequences of input, throughput, output, and feedback between an organisation and its external environment (Lima, 2017). This system obtains *input* (namely demographic and human capital factors in the current study) from the environment. The system then processes the input internally (throughput – engineering and construction processes, procedures, and activities) under the moderating effect of environmental dynamism. Ultimately, the system releases outputs into the environment (entrepreneurial competency and success). Overall the study draws on individual centric (i.e. Human Capital Theory), interpersonal or institution centric (i.e. Social Capital Theory) and System Centric Theories (System Theory).

1.8. METHODOLOGY

A research methodology provides a detailed delineation of the researcher's paradigmatic view and worldview. In the context of this study, the research methodology deals with the researchers' epistemological stance, research approach and research design. These concepts are discussed in the subsequent sections.

1.8.1. Research epistemology

A research epistemology captures how human beings create knowledge about some phenomena in the social world (Denscombe, 2014). It describes the process of acquiring, discovering, disclosing and communicating knowledge, truths and factual information. Therefore, epistemology is concerned with that study of gaining knowledge and poses questions about what is regarded as acceptable knowledge in a specific field of study (Bryman & Bell, 2016:12).

This study adopts a positivist epistemology. Positivism was considered appropriate for this study because of its focus on raw data and study results to make deductive conclusions about cause and effect and use of precise quantitative data measurements to make predictions about relationships between variables (Neuman,

2013; Zikmund, 1984). A positivist stance was considered ideal for this study since it sought to explore relationships among personal demographic variables, psychological variables forms of capital, entrepreneurship competence and entrepreneurship success. This coheres with the view that positivists believe in the application of scientific techniques, and quantifiable methods and instruments to acquire knowledge to arrive at the truth (Mouton & Babbie, 2001). The assumption here, is that deductive reasoning derived from measurements relationships and effect sizes has potential to unearth useful behaviour patterns from analysing causal relationships (Neuman, 2013; Nji Kum, 2019).

1.8.2. Research approach

This study employs a quantitative approach. This research approach deals with measurement of variable quantities, a statistical analysis of the results from the sample and using such results to make generalisations about the study population (Kothari, 2004; Welman, Kruger & Mitchell, 2007). In addition, quantitative studies involve a quantitative analysis of participants' personal characteristics, their opinions, knowledge and behaviours to develop some interpretations and valid conclusions (Napwanya, 2018). As such, the current study drew on sample data covering respondents' personal demographics, their personal traits and capital forms, and how they shape their entrepreneurial behaviours (i.e. entrepreneurial competence and entrepreneurial success).

Furthermore, a quantitative research allows the researcher to employ objective measurements, such as statistical, mathematical or numerical analysis of data, gathered using polls, questionnaires and surveys, or by manipulating pre-existing statistical data using computational techniques (Pandey & Pandey, 2015) to make valid conclusions about a population and recommendations about them. Thus, a quantitative descriptive study best suited this study because of the limited knowledge in research about the relationship between female entrepreneurs' demographic variables, their capital forms and their traits (creativity and personal capabilities), with entrepreneurship competence and entrepreneurship success.

Finally, a quantitative research approach examines a phenomenon from an outsider perspective in order to explain and predict the relationships in the phenomena under study (Cooper & Schindler, 2010). Therefore, a quantitative approach allows the researcher to analyse, predict the relationships between variables, and make inferences from sample characteristics that apply to the broader target population. In addition, the strength of the quantitative research lies in its use of figures and facts, which enhances the accuracy of reported findings.

1.8.3. Research design

A research design is the blueprint for a research study. Biggam (2011) notes that a research design spells out the way in which a research effort will proceed. The current study adopts a descriptive, exploratory, cross-sectional survey design as means to find answers to the research questions. Saunders, Lewis and Thornhill (2009) submit that exploratory designs are relevant in cases where there is scant information about the phenomenon under study and hence help to establish what is happening to provide new insights as well as examine the phenomena with a fresh perspective. There is limited knowledge in entrepreneurial literature on how female engineering and construction entrepreneurs' entrepreneurial competence and success are shaped by a combination of individual demographic, individual traits and capital variables. As a result, a descriptive and exploratory approach best suited this study. This consummates the claim that exploratory research is relevant to studies that examine new interest in a phenomenon that necessitates a better understanding of a phenomenon (Babbie & Mouton, 2008). A cross sectional design allows the researcher to collect data from a single point in time as opposed to at intermittent intervals (Punch, 2013). The fact that the researcher is a full-time public employee combined with limited time, finances, technical support and other resources, meant that a cross sectional design would be technically and practically feasible.

A survey research design employs a series of questions to quantify the problem by way of generating numerical data or data that can be transformed into usable statistics (Salkind, 2012). Surveys often employ respondents' attitudes, beliefs, emotions and perceptions. This study seeks to develop an in-depth profile of successful women in

the engineering field and the construction sector, hence, a quantitative approach was deemed ideal for developing this detailed profile because it affords the opportunity to unravel summarised data on perceptions and attitudes of respondents (Leedy & Ormrod, 2010).

1.8.4. Sampling procedure

This section describes the sampling procedures considered in the current study. It encompasses the unit of analysis, target population, sampling method and sample size details, which are outlined in the following subsection.

1.8.4.1. Unit of analysis

Unit of analysis are observations (e.g. those relating to independent and dependent variables) that we examine in order to create summaries and explain the differences among them (Rubin & Babbie, 2016:163). These units can be objectives, individuals and groups. Selected female business owners and managers of engineering and construction SMMEs make up this study's unit of analysis. The study's focus on developing detailed profiles of successful women entrepreneurs made female owner/managers ideal for this study. In addition, the centrality of personal and capital variables in this study also justifies the use of individuals as unit of analysis in this study.

1.8.4.2. Target population

A target population is the total number of people, groups or organisations that the researcher intends to include in a study (De Klerk, 2019). It captures the research subjects and the variables that are of interest to the researcher (Morgan & Sklar, 2012; Nenty, 2009). It is from this group that the respondents of a study are sampled, and the findings of a research study are generalised. The target population of the study comprises of all female owner/managers of engineering and construction SMMEs in the Free State Province of South Africa. The Engineering Council of South Africa (ECSA) and the Construction Industry Development Board websites were consulted to establish the number of registered female owned/managed engineering and construction firms. The first database established that there are an estimated 800

female owned/managed engineering businesses in the Free State registered on the ECSA website. There is also an estimated 400 female-owned/managed construction businesses that are registered on the CIDB website. Therefore, a total of 1 200 female owned businesses are considered as the target population of this study. These figures are consistent with Ramorena's (2016) study that investigated the innovative capabilities and social networks of emerging contractor firms in the Free State Province.

1.8.4.3. Sampling

A sample represents a portion of a population, which is selected for an investigation (Bryman & Bell, 2016:170). Such selection of the subset of the population enables the researcher to make potentially valid observations and statistical inferences about the population based on sample results (Bhattacharjee, 2012). The limitations on time, resources and technical manpower imply that it is difficult if not impossible to consider the entire population in a sample, especially when the population comprises many individuals. In such scenarios, probability sampling can facilitate the selection of relevant respondents. The study adopted simple random sampling, which is a probability sampling technique, due to its focus at determining valid conclusions about the population based on the same sample. De Leew, Hox and Dillman (2008) submit, with regard to probability sampling that, in simple random sampling each individual has an equal and independent chance of being a component of the sample. The sample for this study was extracted from databases of the Engineering Council of South Africa (ECSA) and the Construction Industry Development Board. The databases contain the number, Broad-Based Black Economic Empowerment (BEEE) status and grading of emerging entrepreneurs in the Free State Province, thus, unregistered and ungraded businesses were excluded from the sample.

The representativeness of a sample frame's composition and representation depends on the development of a suitable configuration (Blumberg, Cooper & Schindler, 2014). An online random number generator is used to select sample components from the sampling until the preferred size is obtained. The sample size of 291 elements, arrived at by first ascertaining the 1 200 population of women-owned engineering and

construction SMMEs in the Free State region, was considered for this study. The Macorr Sample Calculator, at 95% confidence level, and confidence interval of 5%, was then used to determine the actual sample size. As a result, a sample size of 291 elements will be desirable. This method is free from sampling bias, and thus enhances the representativeness of the sample (Cohen et al., 2007). However, in view of the low response rate of surveys, this figure was increased to 400 elements to increase the expected number of participants. This is essential for the study given the need to generalise the results to the target population.

1.8.4.4. Data collection

A structured, self-administered questionnaire was used to gather data from respondents. A questionnaire is the predominantly used technique for extracting data from respondents due to its relatively economic nature, capacity to guarantee the anonymity of respondents and the uniformity in questions asked to respondents (McMillan & Schumacher, 2006). As such, it was deemed most appropriate for soliciting quantitative data and information from the female engineering and construction entrepreneurs due to the limited budget of the research and its convenience in terms of the time availed to the researcher.

The data covered respondents' feedback on their demographic data, psychological states, and forms of capital, entrepreneurial competences, and the stability of the entrepreneurship environment, which all assist in the development of an in-depth profile of variables that most predict entrepreneurial success. The instrument was pilot tested on 30 female owner/managers of engineering and construction businesses who did not participate in the detailed study. The goal of this exercise is to ascertain the lucidity of questions and arrangement of the research instrument to eliminate vague questions. The trial-run of the questionnaire is followed by amendments that are made before conducting the detailed study.

A total of 400 questionnaires were distributed to the engineering and construction businesses in the Free State Province. Three research assistants were appointed to

assist the researcher with administering the questionnaires to respondents. The use of research assistants and interviewing of literate respondents was considered to improve the response rate of the study involving emerging contractors (Ramorena, 2016). Those respondents who were not sufficiently literate were assisted by trained research assistants to complete their questionnaires and visited physically at their offices (Ramorena, 2016) to improve the response rate and eliminate biases based on literacy levels.

1.8.5. Ensuring validity

Two research credibility techniques, validity and reliability, are employed in the current study. Both are discussed briefly in the next section. The development and validation of an instrument is focused on the reduction or elimination of errors in the measurement (Kimberlin & Winetrstein, 2008). Blumberg et al., (2011) consider validity of a measure as the degree to which an instrument succeeds in describing and quantifying that which it is designed to measure. In simple terms, validity describes the extent to which a measuring instrument measures what it was designed to measure. Two main forms of validity, namely, external and internal, are discerned from literature (Cooper & Schindler, 2011). External validity concerns itself more with generalisability of research findings across persons, settings, times, etcetera and internal validity of a research study measures the extent to which the study's design and the data it yields allows the researcher to draw accurate conclusions about cause-and-effect and other relationships within the data (Leedy & Ormrod, 2014:103). While both forms of validity are relevant to the current study, internal validity is more relevant as it reflects the extent of the differences found in a measuring (Kothari, 2004). Nonetheless, this study will ensure the three broad forms of internal validity (content validity, criterion validity and construct validity) as outlined by various authors (Cooper & Schindler, 2011; Kothari, 2004; Leedy & Ormrod, 2014; Zikmund et al., 2013).

1.8.5.1. Content validity

Content validity of an instrument refers to the extent to which the measuring instrument provides enough coverage of the topic under study (Cooper & Schindler, 2011; Welman & Kruger, 2007; Zikmund et al., 2013). This means that when an instrument

is constituted by a representative sample of the content's universe, then its validity is good (Kothari, 2004). An evaluation of content validity (face validity) begins with identifying the constituents of the concept being measured. For the current study, it will be necessary to identify the elements that constitute personal factors, forms of capital, environmental dynamism, entrepreneurial competence and entrepreneurial success drawing from mainstream literature. The constructs will be cross checked by the supervisor, the expert in the area, for consistency and corrections will be done based on this feedback.

1.8.5.2. Criterion validity

Criterion validity relates to the ability of the study to predict some outcomes or estimates relating to the existence of a current condition (Kothari, 2004; Napwanya, 2018). It captures predictive and concurrent validity as it demonstrates how practical the measures are in terms of their predictive capacity (Bryman & Bell, 2011; Cooper & Schindler, 2011; Zikmund et al., 2013). Entrepreneurial success as an outcome (output) is predicted in the current study through variable combinations of personal factors, forms of capital, environmental dynamism, and entrepreneurial competence. The use of sufficient literature covering the concepts under examination, avoidance of bias and the development of a stable instrument contributes to improved criterion validity (Napwanya, 2018). As such, the instrument was developed from literature to cover the different dimensions of each concept and was shared with the supervisor and statistician to ensure that it covered all dimensions.

1.8.5.3. Construct validity

Construct validity refers to the extent to which an instrument measures attributes that cannot be measured directly (Welman & Kruger, 2007). These attributes relate to the independent, mediating and dependent variables. There are several existing instruments for measuring the various constructs under study. Nevertheless, the measurement instrument used in the current study was developed from literature and the adaptation of existing instruments. Finally, Principal Factor Analysis is used to determine the extent of validity of the constructs.

1.8.6. Reliability

The reliability of a measurement instrument describes its extent of accuracy and consistency and the extent to which it produces consistent results when applied multiple times (Bryman & Bell, 2011; Kothari, 2004; Welman & Kruger, 2007; Zikmund et al., 2013). Therefore, consistency is an indication of the extent to which an instrument is free from bias (Sekaran & Bougie, 2010). Internal consistency of the current study's instrument demonstrates the extent to which different indicators of a concept converge on a common meaning. Attempts were made to show the extent of homogeneity among the different items of a multi-item measurement instrument of the current study. A Cronbach's Alpha coefficient is also used to determine the reliability of the research instrument.

1.8.7. Data analysis

Data analysis is the process of examining collected data to establish patterns and practicalities about certain areas of interest and such data is studied to reveal new truths based on the evidence available (Pandey & Pandey, 2015). Rigorous data analysis faces threats such as dealing with incomplete and uncompleted questionnaires. The researcher discussed the research instrument with the supervisor and the statistician to ensure its conciseness, reduce its complexity and improve clarity to guarantee higher responses.

More so, data was cleaned before further analysis. After sifting for the detection of errors, data was coded to prepare for further analysis and testing. The organisation of data culminates in the development of a coding system where codes are assigned to organised data to allocate meaning to data (Walliman, 2011). Once the data are coded, they will then be entered into statistical software, Stata 12, for in-depth analysis.

The current study employs basic descriptive statistical tools such as frequency distributions, graphs, to present and interpret data. Lastly, the researcher uses

inferential statistics such as linear regression and correlation analysis to analyse the data

1.8.8. Ethical considerations

Research ethics involve requirements on daily work, the protection of dignity of subjects and the publication of study information in research. Research ethics require the researchers to put into consideration the ethical implications of their research to mitigate negative risks, prejudices and undesirable consequences on subjects that may arise from the conduct of their research (Fouka & Mantzorou, 2011).

The researcher adhered to the following ethical standards in this study:

- The researcher obtained the necessary ethical clearance from the University before conducting the study. The receipt of the ethical clearance was followed by the researcher's application for further ethical clearance from Free State Department of Human Settlements.
- Research subjects were appraised of the objectives of study and the expected benefits of participating in the study and further informed that no financial benefit would accrue from their active participation.
- Participants were informed that participation in the study is voluntary and therefore, can withdraw from the study without any potential sanctions or risks.
- An assurance of the protection of participants' identities for their dignity, safety, security and from law enforcement agencies such as the South African Receiver of Revenue Services (SARS) will be made. The researcher also ensured anonymity of participants' responses by reporting their responses in aggregate form to protect their individual identities.

The fundamental ethical rule of social research according to Babbie (2007) is that research must not bring harm to the participants and this is not an exception in this study. Thus, the current study was conducted in a manner that considered all the ethical issues in social research.

1.9. CHAPTER SUMMARY

This chapter outlined the background to the study, problem statement, aim of the study, research objectives, research questions, the conceptual and theoretical frameworks and the research methodology used in this study. It also considered parallel studies and thus covered the main concepts of the study, which include personal demographics, selected personal traits, capital variables, environmental dynamism, entrepreneurial competence and entrepreneurial success. The next chapter focuses on personal demographic factors and entrepreneurial success.

CHAPTER 2: PERSONAL DEMOGRAPHIC FACTORS AND ENTREPRENEURIAL SUCCESS

2.1. INTRODUCTION

The introductory chapter outlined the orientation of the study, the primary aim and objectives, the significance of the study and a synopsis of the research methodology. This chapter builds on the previous chapter by focusing on a review of literature review covering the diverse personal demographic factors that influence the success of businesses in emerging economies. This literature review draws on parallel studies conducted worldwide to develop a cohesive perspective on the determinants of the success of women-owned/managed engineering businesses in South Africa. As such, ensuing sections present an in-depth account of each of the aforementioned variables and their influence on entrepreneurial success.

2.2. THE NATURE OF DEMOGRAPHIC FACTORS

The concept of demography relates to “...the study of people’s vital statistics...” (Lamb, Hair & McDaniel, 2017: 53). Burch (2018) suggests that demography relates to the qualitative and quantitative aspects of populations. Demographic factors can entail the age, race, ethnicity, culture, literacy, level of incomes and work experience of individual participants, factors relevant to the study of entrepreneurship behaviour and activity. A review of extant literature suggests a strong relationship between the demographic characteristics of entrepreneurs and their entrepreneurial success as expanded below.

2.2.1. Age

The age of an entrepreneur generally describes the number of years at which s/he could have mastered the art of opportunity recognition and mobilisation of resources in pursuit of successful ventures. Entrepreneurship is a process and not an event, thus, the assumption is that the older the entrepreneur, the higher their chances of having accumulated business and marketing experience, more resources to run the business successfully and the higher the chances of having learnt from their own failures to be able to run their businesses successfully (Rambe, 2018). As such, most opportunity-driven entrepreneurs are generally older (35–44 years) than necessity

driven ones (18–24 years) (Bijaoui, 2012; Giacomini et al., 2011; Rambe & Ndofirepi, 2016). Other studies emphasise that entrepreneurship-entrepreneurs age relationships go through complex cycles - considered considerably lower among those below 24 years, rises significantly among the mature adults aged 25 to 34 years and then dissipates completely after the age of 54 (Tweneboah-Koduah & Adusei, 2016). This topic is addressed in detail later in this study.

2.2.2. Ethnicity

The concept of ethnicity is a social construct which is difficult to define. Scholars propose different definitions for the concept. As a result, Hutchinson and Smith (1996) contend that ethnicity is multi-faceted and incorporates aspects that include kinship, group solidarity, a common culture, and self-identification with a group. In addition, Sharma (2005) notes that the concept also covers issues such as physical appearance, subjective identification, cultural and religious affiliation, stereotyping, and social exclusion. However, the appropriateness of these characteristics is difficult as they differ depending on the group of people under consideration. More so, describing people by their physical experience could be criticised as racial profiling and therefore Sharma (2005) proposes the need for a flexible and practical approach in the selection of specific criteria to demarcate the boundaries of ethnicity of a particular society. For Gill, Kai, Bhopal and Wild (2005:228), "...the term is neither simple nor precise but implies one or more of the following: shared origins or sociological background, shared cultural traditions that are distinctive, maintained between generations and lead to a sense of identity and group common language or religious traditions." It is unusual, but not rare, in business or economic discourse for the term to be used as customarily distinct from some supposed native norm, hence the terms ethnic/minority/immigrant entrepreneurship. The term is also used to refer racial groups as a way of social and cultural classification. For instance, the British categorise ethnic groups as White, Black or Asian (Jivraj & Simpson, 2015) while the United State of America (USA) uses White, Blacks and Hispanics (Abascal, 2015). Interestingly, the Americans confine the use of the term Asian to the Japanese and Chinese only while the British use it in reference to people from the Indian sub-continent. Shifting attention to the South African context, Urban, Van Vuuren and Owen (2008) categorise the country's racial groups as either Black/African,

Indian/Asian, or White/Caucasian South Africans and Coloured even though the use of coloured tends to generate some controversy among this community. Hence, Arko-Achemfuor (2013) draws distinctions between Afrikaner, Black, Indian and Coloured entrepreneurship.

2.2.3. Education

Good quality education, particularly the formal type that equips recipients with numerate and literal skills, affords people the opportunity to effectively function in the socio-economic environment of their profession (Biesta, 2015). The formal education objectives, which fall into the cognitive, affective and psychomotor domains, allow individuals to cope with numerous life complexities (Sönmez, 2017). According to Bloom (1956), the cognitive domain equips individuals with the cognitive skills of knowledge, comprehension, application, analysis, synthesis and evaluation, which are essential to cope with the complexities of one's professional career such as a construction and engineering. The affective domain, which encompasses feelings, values, appreciation, enthusiasm, motivations, and attitudes (Bloom, Krathwohl & Masia, 1973; Rumbaugh, 2014), is intended to change an individual's attitude and afford one the dexterity to manage relationships and cope with diversity. As such, it plays a critical role in the entrepreneurial success of business organisations. Equally important for economic activities are the, psychomotor skills, which include physical movement, coordination, and use of the motor-skill areas. The belief in the necessity of education for success is strengthened by the observation that those with higher academic qualifications have wider employment opportunities and get higher paying jobs (Crawford et al., 2016) over and above having a higher chance of being successful entrepreneurs.

2.2.4. Business training

The concept of training is regarded as a methodical improvement of proficiencies necessary for an individual to execute a task. Training advances, alters and guides individuals' capabilities to perform particular tasks. Armstrong (2001) defines training as involving a formal and systematic modification of behaviour through learning, education, instructions and development and planned experience. As such, training involves empowerment of the workers with the necessary competencies that enable

them to tackle their current job responsibilities effectively. As such, it can be differentiated from employee development, which targets the enhancement of the competencies of employees for future environmental demands and adaptability (Amadi, 2014). Rami and Hichami (2015) distinguish between management education and training and emphasise the long-term perspective of the former and the short-term focus of the latter. Rami and Hichami (2015) emphasise that training is tailored to the specific knowledge and skills needs of the task at hand. In contrast, management education is design for long-term general understanding of the broad field of enterprise without any specific reference to specific tasks. Thus, training seeks to close a current knowledge gap, in the process overhaul and augment workers' knowledge, skills and attitudes. It is pitched towards satisfying both current and future work needs of employees. In this study, emphasis is on business/entrepreneurial training whose purpose is to equip participants with knowledge, skills, and attitudes, which are relevant to the creation, management and growing businesses.

2.2.5. Business/construction industry experience

The duration to which a business is established in a specific industry is critical to the generation of the entrepreneur's experience in that industry, what is called industry specific experience (Rider et al., 2013). A clear distinction must be made between entrepreneur/employee-specific experience and industry-specific experience. The former describes knowledge and capabilities, which are acquired through their prior exposure to, ownership or management of particular business operations (Eggers & Song, 2013). On the contrary, industry-specific experience denotes knowledge and capabilities that is generated through the entrepreneur's exposure to a specific group of inter-related businesses (i.e. an industry), thus allowing the serial entrepreneur to use such experience to establish and succeed in their subsequent ventures and entrepreneurship pursuits in the same industry (Eggers & Song, 2013). This view can be extended by arguing that the accumulation of experience in a specific industry may have limited impact when transferred to other unrelated industries as each industry experience is unique to that industry and might have limited application in other industries. This transcends Eggers and Song's (2013) focus on a serial entrepreneur who fails in his first venture in a specific sector, attributes the failure to the external environment and then establishes a new venture in a different industry, in which both

argue that the failure denies him/herself of the opportunity to validate their potentially-useful industry experience and lowers his/her chance of success in the second venture.

2.2.6. Entrepreneurship exposure

Prior entrepreneurship exposure relates to an individual's personal history, such as entrepreneurial parents or prior work experience in a small or newly founded firm, which is related to entrepreneurship (Zapkau, Schwens, Steimetz & Kabst, 2015). Literature suggests that 35% to 70% of the entrepreneurs who succeed have entrepreneurial role models (Shirokova, Osiyevskyy & Bogatyreva, 2015). The observation is that role models tend to model and guide the behaviours and activities of nascent entrepreneurs around the development of value propositions, marketing of their products, development of financial budgets and entrepreneurial resilience. As such, role models (coaches, mentors, family business partners or leaders) affect an individual's decision to become an entrepreneur and these role models tend to mould entrepreneurship behaviour (Ozaralli & Rivenburgh 2016). In a similar way, being exposed to family businesses increases a nascent entrepreneur's chances of knowing and participating in the critical businesses and thus increases the chances of success in future entrepreneurship. For instance, Hoffmann, Junge, and Malchow-Møller (2015) contend that children raised in those families where parents were entrepreneurs have a greater chance of pursuing entrepreneurship as a career choice based on the example set by the parental model than those born in non-entrepreneurial families. However, there is literature that contradicts this belief and contends that being born in entrepreneurial families does not necessarily guarantee children's pursuit of entrepreneurship nor entrepreneurial success.

2.2.7. Financial literacy and access to resources

The concept of financial literacy relates to "the ability to use knowledge and skills to manage one's financial resources effectively in a lifetime of financial security" (Mandell, 2008). Other scholars conflate financial literacy with knowledge about financial products (loans, mortgages, credit cards, pension accounts, shares) and knowledge about financial concepts, and possession of skills to make sound financial

decisions (Hastings, Madrian & Skimmyhorn, 2013; Lusardi & Mitchell, 2014). Put differently, financial literacy entails knowledge about the methods, tools and strategies about personal financial management and is therefore, broader than mere knowledge of financial products.

Financial literacy issues like borrowing, record keeping, budgeting, personal finance, investing and savings are relevant to business owners particularly in the developing world where resources are scarce. Xu and Zia (2012) postulate that limited financial education in low-income countries limits access to the more sophisticated financial products, which denies some individuals access to financial products. Thus, accumulation of financial knowledge and skills is key to entrepreneurs and to entrepreneurial success.

2.2.8. Creativity

Baer (2012) highlights that creativity is the development of ideas that are both novel and useful in the short or long term. The reality that the current study emphasises novelty of ideas as a success factor for engineering and construction firms, means that creativity has to be measured. Thus, creativity will be measured using three items developed by Subramaniam and Youndt (2005) and these are having developed ideas that imply substantial departures from existing product and services lines; having developed ideas that make existing knowledge about current products/services obsolete and having developed breakthrough ideas – not minor changes to existing products/services.

Sometimes, creativity is approached from the perspective of creative capabilities, which describes an individual's inclination to produce novel and appropriate scientific outcomes in the form of products or solutions to open-ended tasks (Amabile, 2012; Sternberg, 2006). Since the engineering profession is characterised by a frequent performance of highly complex tasks and activities, such as designing and inventing products, engineering entrepreneurship demands the female entrepreneur to possess considerable creativity and by extension creative capabilities (Hubka & Eder, 2012; Jordaan, 2015; Ngowi, 2017). In addition, the rapid technological change in the business environment, which creates both opportunities and threats for emerging businesses, requires entrepreneurs to be creative in order to match and outwit

competitors in the proximal fields (Chen-Cheng, 2009). Thus, the possession of divergent and convergent thinking capabilities as foundations for creativity would be an asset to potential and existing engineering and construction entrepreneurs (Ramorena, 2016; Reid, de Brentani & Kleinschmidt, 2014).

2.2.9. Operational capabilities

For the purpose of this study, operational capabilities are what the firm requires in order to implement its strategy and achieve its overall organisational goals (Hiatt & Sine, 2014). The capabilities are usually measured at the firm level as a set of resources, knowledge, skills and routines that let the firm perform its strategic functions, and they reflect the owners and top management's abilities (Tatikonda, Terjesen, Patel & Parida, 2013). Thus, the operational capabilities of a firm reflect the ability of both senior management and firm owners to identify market opportunities and create value for customers in a complex and uncertain business environment (Glavas & Matthews, 2014). Literature suggests, in view of the high sunk costs, risky nature of engineering and construction businesses and the accompanying high probability of failure that, successful engineering and construction ventures emphasise capabilities such as managing cost, time and the quality of products/services (Akaba, 2016; Arslan & Kivrak, 2008). In other words, entrepreneurial success in the engineering and construction field is inevitable for entities that possess strong operational capabilities in the management of human and technical resources, internal communication, planning and scheduling, project management and leadership (Luthra, Garg & Haleem, 2015; Zunguzane, Smallwood & Emuze, 2012).

2.3. CONCEPTUALISATION OF ENTREPRENEURIAL SUCCESS

Despite different authors' attempts at developing an all-encompassing definition of entrepreneurial success (Baron & Henry, 2011; Fisher, Maritz & Lobo, 2014; Gorgievski, Ascalon & Stephan, 2011), such a holistic definition is yet to emerge. The complexity of operationalising and measuring entrepreneurial success is compounded by both its multi-dimensional nature and multistage process (Fisher, Maritz & Lobo, 2014). Disconcertingly, some empirical studies use the entrepreneurial success construct as a key variable with varying operational definitions or operationalising it

differently (Fisher, Maritz & Lobo, 2014; Desai, 2017). For instance, Rasmus and Laguna's (2018) conception of success in the context of entrepreneurship incorporates other constructs that could be conceptualised with varying indicators such as the successful entrepreneur, the entrepreneur's success, and the venture's success.

Different authors define entrepreneurial success differently. Saleem (2017) underscores that the exact definition of the concept of entrepreneurial success remains fuzzy regardless of the scholarly interest that have been produced over the years. This lack of clarity of definition has not undermined the important influence of entrepreneurial success in society and in any economic sector (Unger, Rauch, Frese & Rosenbusch, 2011) including the engineering and construction sector. Characterisations of entrepreneurial success in extant literature generally emphasise financial performance measures such as return on assets (ROA), growth in sale revenue, percentage growth in market share, profitability, income, size of the business, stock market performance, return on investment (ROI) and return on equity (ROE) (Fisher, Martz & Lobo, 2014; Halabi & Lussier, 2014; Marco, 2012; Unger et al., 2011). Such characterisation of the construct arises from the reality that entrepreneurs generally expect reasonable financial returns for the risk that that they assume in business ventures (Beckout, Hartog & Van Praag, 2016; Block & Landgraf, 2016; Davidsson & Honig, 2003). However, the general observation is that reliable and accurate information on the financial performance of small entrepreneurial businesses is difficult to obtain in practice (Laguna, Wiedutek & Talik, 2012). In addition, the complexity of defining entrepreneurial success within the engineering and construction businesses lies in the fact that while the entrepreneur is a critical vehicle to the success of the business (i.e. their satisfaction, their actions, and processes), the analysis of the business as an entity can also be a unit of analysis for evaluating success.

The complexity of using financial records as measures of entrepreneurial success has compelled other scholars to define entrepreneurial success based on non-financial aspects such as the number of people that an entrepreneur employs, business survival and entrepreneurial resilience (Coad, 2014; Rey-Martí, Porcar & Mas-Tur, 2015). The use of an entrepreneur's duration in business as an indicator of success, however, is

questionable. First, keeping the business in operation may not mean that the business is financially viable nor expanding in size. Moreover, the choice to terminate business operations is either deliberate (a construction or engineering business entrepreneur quitting business to pursue other personal interests) or forced (associated with business failure). Hence, there is need for careful consideration of context when selecting criteria to use in defining and measuring entrepreneurial success. Despite its shortcomings, the preceding measure is relevant to the current study due to the high attrition rate of South African female entrepreneurs in the engineering and construction business sectors arising from the real and perceived environment hostilities to women in such sectors.

Furthermore, research provides different views about the measurement of success. Gorgievski, Ascalon and Stephan (2011), just as the above-noted scholars, emphasises the need to employ non-financial measures in the measurement of entrepreneurial success. In addition, Parker (2009) and Van Praag and Versloot (2007) proffer that the definition and assessment of entrepreneurial success is not confined to one but is dependent on multiple aspects such as the sector in which the business operates, motivations of the entrepreneurs, and the varying forms of utility that the entrepreneur seeks such as social recognition, independence and satisfaction. Recent literature indicates the use of the entrepreneur's psychological characteristics as an important indicator of an entrepreneurial success. For instance, numerous scholars propose the use of the entrepreneur's motivation, aspirations, personal development, work enjoyment and resilience as indicators of success (Ayala & Manzano, 2017; Wach, Stephan & Gorgievski, 2016; Rauch & Frese, 2000; Yamakawa, Peng & Deeds, 2008). Further considerations include the entrepreneurs' desire for self-realisation, the security of their families, and attempts at enhancing employee relations to societal contribution (Edelman, Brush, Manolova & Greene, 2010; Jayawarna et al., 2011; Jennings & Brush, 2013). Another proposal, as noted by Gorgievski et al., (2011), focuses on using aspects that include personal satisfaction with life, satisfied stakeholders, utility and usefulness, public recognition, as well as the achievement of a good balance between work and private life as important measures of entrepreneurial success. In other words, the psychology-based definitions of entrepreneurship success largely depend on the entrepreneur's

attainment of individual goals and their subjective assessment. However, the probability of bias in such measurement forms is high owing to the entrepreneur's dispositional inclination to be positive and satisfied with life (Cardon & Kirk, 2015).

It is evident, from the foregoing that the process of defining entrepreneurial success is complex and not yet fully resolved. Notwithstanding this *status quo* this study will adopt a multi-dimensional definition of entrepreneurial success that is based on both financial and non-financial criteria. This stance is informed by the current study's intention to unravel the factors and processes that enhance the entrepreneurship success of South African women in these career fields. Hence, the operational definition of entrepreneurial success in this study is as follows: "the individual understanding and assessment of the achievement of criteria that are personally important to the entrepreneur" (Wacht, Stephan & Gorgievski, 2016: 3). Although some authoritative definitions of the term tend to revolve around economic outcomes such as firm size, growth in revenue, sales and expansion of market, there is general consensus that subjective entrepreneurship success relates to the individual entrepreneurs' evaluative judgements of the economic indicators of their firms (Rauch & Frese, 2007; Richard, Devinney, Yip & Johnson, 2009). Although this study does not necessarily cover the factors, personal learning and fulfilment, work life balance or contribution to the community (Jayawarna, Rouse & Kitching, 2011), the author does recognise other factors that transcend economic outcomes often narrowly defined under firm performance that entrepreneurs may seek.

2.4. THEORIES OF DEMOGRAPHIC FACTORS AND ENTREPRENEURIAL SUCCESS

Various theories could apply to demographic factor-entrepreneurship success relations. However, the multiplicity of demographic factors in literature, as some are individual entrepreneur related and some are firm related, this study will concentrate exclusively on those considered fundamental to this relationship in its desire for precision. Therefore, the theories considered here, as shows in the discussions below, include the Human Capital Theory, Capabilities Theory and Gender Theory and systemic approach covered under the General Systems Theory.

2.4.1. Human Capital Theory

The Human capital theory, which was originally developed to study and demonstrate the essence of education (Becker, 1964; Schultz, 1961), postulates that individuals that possess varying knowledge and skills tend to have significant economic value (Marvel, Davis & Sproul, 2016). Schultz (1961) originally noted a disproportionate growth in national capital relative to land and hours of labour and attributed this disequilibrium to amount of investments in human capital. Becker subsequently built on this to develop the theory of human capital founded on the prevalent evidence indicating that individuals who are highly trained, skilled and educated tended to be paid comparatively higher than their counterparts (Becker, 1964; Marvel, Davis & Sproul, 2016).

As such, at the core of the human capital theory is the postulation that investments in human capital, especially education and work experience, contribute directly to the human capital outcomes, which are acquisition of knowledge and skills (Becker, 1964; Davidsson & Honig, 2003; Schultz, 1961;). There is a clear distinction between general human capital and specific human capital as they apply to specific entrepreneurial contexts. *General human capital* tends to be harnessed across varying and multiple occupations and industries, while *specific human capital*, tends to be specific to particular occupational context; job, sector, or occupation (Estrin, Mickiewicz & Stephan, 2016), such as the engineering and construction sector. Therefore, the way in which these two types of capital are infused, integrated and adapted to build entrepreneurship-specific knowledge applicable to specific entrepreneurship encounters is integral to the realisation of effective entrepreneurial outcomes, especially entrepreneurial success. For instance, specific human capital characteristics facilitate the recognition and exploitation of opportunities to realise economic outputs for the business (e.g. increased sales, profit and return on investment) as well as realise positive externalities to society (e.g. increased employment opportunities, social empowerment) (Estrin, et al., 2016; Marvel, 2013). In addition, education's effects on socialisation may influence individuals' cognitive alertness to business opportunities, their exploitation to maximise economic value for

the business and social status for the entrepreneur and thus increasing their social legitimacy and impact of their entrepreneurial exploits.

Unger, Rauch, Frese and Rosenbusch (2011) argue that, as generic human capital investments, formal education and work-related experience have a comparably lesser impact on entrepreneurial success, especially on venture success, than the acquisition of specific skills. Nevertheless, a counter argument is that, despite their limited contribution to venture success, education and experience are still vital sources of generic skills, which are considered pertinent in different entrepreneurship phases (Mamabolo, 2016). In view of these arguments, Human Capital Theory has been widely applied to entrepreneurship studies especially those focusing on the identification and creation of vital entrepreneurship opportunities (Alvarez & Barney, 2007; Davidsson & Honig, 2003; Ucbasaran et al., 2008; Unger et al., 2011). It also applied ideas on the exploitation of opportunities through access to financial opportunities and launching of new firms (Bruns, Holland, Shepherd, & Wiklund, 2008; Dimov, 2010). Other areas where the theory has been applied include the acquisition of new knowledge and the generation of value creating advantages for ventures (Bradley, McMullen, Artz, & Simiyu, 2012; Corbett, Neck, & DeTienne, 2007). However, Mamabolo (2016) concedes that the studies that apply Human capital theory to entrepreneurship success have often concentrated on a specific entrepreneurship phases (e.g. start-up or establishment phase) rather than the entire venture creation process for instance (Brixy, Sternberg & Stüber, 2012; Singer, Amoros & Moska, 2015).

2.4.1.1. Age

There are inherently conflictual thoughts about the link between the age of the human resource and entrepreneurial success. There is a general postulation that because older individuals already enjoyed a longer life span, they are expected to have accumulated considerable resources, labour experience and procedural knowledge to successfully run business and realise entrepreneurial success (Matos, Amaral & Baptista, 2018; Parker, 2009). This assumption consolidates the popular claims that the age of the individuals in general and workforce (i.e. owner/manager) is associated with wisdom as life lessons and lessons about business are acquired through personal experiences and past failures.

The counter argument to this popular assertion on the positive relationship between age of the human resource is even surprising. It postulates that, the longer the life span of an individual, the greater their chances of having a longer spell outside the job market or being unemployed culminating in human capital depreciation (Neuman & Weiss, 1995; Parker, 2013). This applies to the South African scenario where the retirement age is 65 and human resources can consider early retirement at 60, the ages most of which most people would be starting to mature based on their human skills and experience. The observation arises from the reality that those who hold tertiary education qualifications (especially Masters and doctoral education) would have spent the first thirty to thirty-five years at university thus, leaving only thirty years for the acquisition of human experience, skills and competences necessary for becoming an accomplished entrepreneur.

The last interesting counter argument on the age of human resource – entrepreneurship success relationship is that, in consistent with the socio-emotional selectivity theory (Carstensen et al., 1999), many older individuals tend to consider time as a scarce resource and therefore accord lower premium to future outcomes (Lévesque & Minniti, 2006). As such, older individuals tend to change their life aspirations from more logical desires and intentions to more emotionally oriented ones (Matos, Amaral & Baptista, 2018). Therefore, they may not value engaging in entrepreneurship out of the realisation that they may not enjoy the benefits of their diligent work as entrepreneurship is a unique enduring investment founded on future rewards rather than present gains.

Overall, the oxymoron is that. on the one hand, there is a large accumulation of entrepreneurial knowledge, experience and skills that may arise from a long-term interaction with entrepreneurial exploits by older mature individuals than younger ones. On the other hand, the reality is that older individuals' cognitive aptitude, especially fluid intellectual abilities (i.e. abilities to comprehend and interpret complex ideas), tend to diminish with advances in age (Baltes et al., 1999; Matos, Amaral & Baptista, 2018).

2.4.2. Gender-based Theories

Gender is often described as an equivalent for sex (i.e. a biological description) without problematisation (Henry, Foss & Ahl, 2016) even though the term emphasises the different ways in which individual or different gender are socialised in society to appreciate their different roles and responsibilities. The World Health Organisation (WHO) defines gender as socially constructed roles, behaviours, and attributes that a given society considers appropriate for women and men (WHO, 2016). There exist, inter alia two main strands to Gender theories of entrepreneurs and these are, the *Liberal feminist theory* and *Social feminist theory*. The Liberal feminist theory does not attribute gender variations in the performance of the firm to biological differences between men and women but rather to the systemic differences in the structural factors, such as firm size and liquidity, which relate to the firm (Nienaber & Moraka, 2016; Orser, Spence, Riding & Carrington, 2010). A further contention is that gender differences in performance outcomes (e.g., profit, growth, size) are a product of organisational inputs, such as individual ability, actions and choices, and the gendered nature of access to deployment of resources such as financial capital, professional experience, managerial acumen and education (Gottschalk & Niefert, 2013; Orser et al., 2010). These disadvantages are conceived to stem from clear discrimination as much as they are consequences of the socialisation of women, which undercuts their potential to develop their capacities and capabilities fully. Therefore, encouraging females to train in traditionally male dominated domains, such as entrepreneurship and engineering, is considered as a remedial strategy.

Other research, for instance, Gottschalk and Niefert (2013), have contended gender difference in preference for industries with female entrepreneurs and the selection of those sectors that tend to realise low sales and growth (e.g. retail and catering) than men (e.g. engineering and construction). Gender differences were also reported in aspects such as education, experience, or attitudes, which have serious implications for business outcomes (Gottschalk & Niefert, 2013). Early research by Fischer et al., (1993) attributes variations in business performance, between genders, to the asymmetries in social opportunities that are availed to both genders and the

deprivation of women of these resources, which leads to their constrained potential. Ahl (2006) bemoans the perceived equality of men and women and the assumption that any subordination of women is a consequence of structural barriers, such as unequal access to education, which can be eliminated.

This theory draws attention to the situational factors of men and women that trigger variations in entrepreneurial behaviours and business performance, and entrepreneurial outcomes, such as varying levels of access to education, discrimination and lack of experience among women (Ahl, 2006; Fischer, Reuber & Dyke, 1993; Motsomotso, 2019). For instance, lower business ownership rates among women have been an endemic phenomenon in both advanced and emerging economies with women-owned businesses being comparatively fewer and having sub-optimal outcomes than those owned/managed by men (Sandra & Michaela, 2015). As such, these gender gaps in entrepreneurial activity across countries and women, tend to constitute a significant yet hitherto unaccounted source of economic growth (Carter & Marlow, 2003; Ogunjemilua, Olaposi, Jegede & Efunwole, 2007) and contribute significantly to the development of innovations and the creation of various countries' wealth (Brush et al., 2009). Therefore, the theory demonstrates that, despite the biological differences between men and women, women are not inferior to men – even though it fails to overcome the common view that these two genders are intrinsically different (Nienaber & Moraka, 2016). Nonetheless, the theory falters in that it fails to account for whether it would matter or not if men or women were to run a business (Nienaber & Moraka, 2016).

Furthermore, Socialist feminism appreciates the varying differences among men and women such as their class, sex, age, race, ethnicity, nationality, and sexual orientation (Ogunjemilua et al., 2018) and how these have a different bearing on their entrepreneurial success. Women tend to have different forms of early socialisation, different attitude towards the exploitation of risks and business growth and pursue different goals due to their social conditions and socialisation processes (Gottschalk & Niefert, 2013). Social feminism postulates that women possess different attitudes and values and, consequently, adopt a different approach to business compared to

that of men (Ogunjemilua et al., 2018). For instance, Adebowale (2015) reports differences in the motivations and priorities of women entrepreneurs from those of men as women tend to have different demands placed on them than men and display different motivations when starting firms. In addition, Motsomotso (2019) contends with regard to sexual orientation that women-owned/managed businesses in Lesotho perform poorly when compared to those of men due to the systemic constraints such as limited access to education, discrimination in funding and lack of business experience, which women often encounter. Women in male-dominated professions, such as engineering and construction, are often confronted with multiple challenges that undermine their entrepreneurial success. These challenges, faced by women, include being compared to men, when pitching ideas for funding, limited collateral, and systematic discrimination when accessing funding (Moodley, 2011; Brooks et al., 2013). Orser et al., (2010) therefore, highlight that gender-based differences in firm performance can be accounted for only if owner and firm level differences are controlled for in the determination of the firm's entrepreneurship success.

The *Social Feminist Theory* critiques the Liberal feminist theory for their inclination to the "entrepreneurs-as-male" perspective and for failure to acknowledge that gender influences lie not only in the business founder and her entrepreneurial self-perception and decisions, but in the broader social structures, power and class structures and politics, which are often at play in entrepreneurship business operations (Orser, et al., 2010). The standpoint of the Social feminists on gender is a clear recognition of the unique circumstances, needs, and experiences as women (Black, 1989).

Both approaches constitute different lens for interpreting the role of gender in social processes. Liou and Aldrich (1995) conceive the Liberal feminist theory to represent the situational perspective, one in which gender differences in performance are considered as a consequence of skewed access to opportunities in labour markets and organisations and these have some implications for the gaining of skills and capabilities. In addition, the Social Feminist Theory closely represents what Liou and Aldrich (1995) consider as a dispositional approach, which contends that differences in levels of education and socialisation of men and women contribute to differences in

experiences, thought processes and values and hence affect the motives and intentions of the entrepreneur. Notwithstanding the varied assumptions for explaining the gender differences in business performance, both theories are not mutually exclusive as variations in resource availability and values while attitude differences may be concomitant factors in explaining the underperformance of female entrepreneurs. For instance, research has validated both the resource endowments of founders (their academic backgrounds, entrepreneurial experience, capital for business start-up, family situation, and working hours), and attitudes and values of the founders (e.g. their extent of risk aversion, internality of locus of control, growth propensity, and founding strategy) in explaining gender variations in business performance (Fischer et al., 1993, Carter et al., 1997; Rosa et al., 1996, Gottschalk & Niefert, 2013).

Overall evidence of gender differences has been reported in some aspects and less obvious in others. For instance, research notes that women tend to have limited experience in those industries, in which businesses operate and have lower entrepreneurial experience, and affects the performance of their businesses (Hundley 2001, Fairlie & Robb 2009). Finally, men have been reported to have higher managerial experience than women, yet the actual of contribution of such variations to the gender gap ranges from small, insignificant to negative for certain performance (Boden & Nucci, 2000; Fairlie & Robb, 2009; Fischer et al., 1993; Gottschalk & Niefert, 2013).

2.4.3. Perspectives on entrepreneurial success

One approach that can be considered as an offshoot of the Social Feminist Theory is the Female Advantage approach. The *female advantage approach* contends that women have different, unique and even better skills compared to men in managing the demands in the global workplace (Green et al., 2003). This means that although women are different from men who are pre-disposed to demonstrate psychological traits such as dominance, aggressiveness, and competition, they generally bring a different set of psychological traits, such as candour, generosity, attentiveness, empathy and care that are critical to nurturing employees, developing management

strategies and expanding the clientele base, which complement the entrepreneurial environment. Literature claims that women tend to exhibit particular skills, such as strong interpersonal relations, power sharing power, nurturing of their subordinates and inclusiveness of employee sinfull decision-making, which are different from those of men (Davidson & Burke, 2000; Vecchio, 2003). More so, the world of work is increasingly away moving from, silo-based and ivory tower-based organisations into more adhocracies (i.e. flatter organisations created around collaboratively working teams). As a result, Eagly and Carli (2007) concede that male dominated command structures and control-based behaviours are falling out of step and being replaced by the more preferred transformational and androgynous leadership styles of women. Thus, the complexity of the engineering and construction sector and its demands for businesses' interactions with multiple clients and stakeholders, might mean that the leadership styles of women are what the industry needs for its long-term survival.

There are multiple perspectives for categorising entrepreneurship success. Audretsch (2012) considers three approaches to entrepreneurship and these are the organisational context approach (i.e. the organisation in which entrepreneurship success unfolds), performance criteria approach and behavioural approach (i.e. the activities and behaviours of entrepreneurs). Shane (2000) proposes the Neoclassical equilibrium theories, Psychological theories and Austrian theories as possible classifications. The contestation has been on whether to place emphasis on the success of the entrepreneurial career or the success of the entrepreneurial firm (Keh et al., 2002; Lau at el., 2007). This is because of the argument that entrepreneurial firms are the natural extension of entrepreneurs and that studying those individuals provides some insights into the success of these firms (Herath, 2014). However, for the sake of brevity, Rauch and Frese (2000) provide a more coherent approach, which covers personality characteristics, entrepreneurship strategies, demographic attributes (human capital) and environmental conditions. These approaches are examined briefly in the next sections.

2.5. MEASURING ENTREPRENEURIAL SUCCESS

As already noted, there is agreement amongst entrepreneurship scholars on the intricacy and multi-dimensional character of the concept of entrepreneurial success. Thus, it has a different meaning to different people. Evidence from extant literature suggests that, to some scholars, the concept is still like a black box despite it having a long history of empirical inquiry (see, Montagno et al., 1986; Razmus & Laguna, 2018). For instance, empirical studies (e.g., Kiviluoto, 2013) and theoretical research (e.g., Rauch & Frese, 2000) demonstrate that assessing entrepreneurial success solely on economic indicators constrain our grasp of entrepreneurial success. Some studies even exhort researchers to examine other indicators especially with regards to the determination of SMME success (Davidsson, 1989; Greenbank, 2001). This is particularly the case because financial indicators of SMMEs do not always adequately reflect their performance (Reijonen & Komppula, 2007; Walker & Brown, 2004). The interpretation of entrepreneurial success is complicated by the fact that entrepreneurs have different reasons for being in business, which complicates a precise measurement of their success (Mead & Liedholm, 1998; Rauch & Frese, 2000). Given its amorphous character, the concept can be credibly measured using different benchmarks.

Notwithstanding the aforementioned controversy, there is consensus that entrepreneurs, as business people, make every effort to obtain monetary returns from their commercial activities (Rauch & Frese, 2007; Richard, Devinney, Yip & Johnson, 2009). Hence, several financial variables are suggested as measures of entrepreneurial success in literature. For instance, some studies suggest measures such as growth in profit, sales revenue and return on capital employed as indicators of entrepreneurial success (Chandler & Hanks, 1994; Lukes & Laguna, 2010). Other studies call for more inclusive measures and thus suggest the incorporation of non-financial aspects in any attempt to assess entrepreneurial success. As a result, factors such as growth in the number of employees, employee satisfaction, respect from customers, career progression, customer satisfaction, customer retention, relationship with suppliers, and business image have been proposed as potential measures of entrepreneurial success.

The next subsection presents detailed explanations of some of these aspects.

2.5.1. Profitability

The profitability variable is widely used as an indicator of entrepreneurial success and firm performance in numerous studies (Andersén & Samuelsson, 2016; Feng, Morgan & Rego, 2015; Kodongo, Mokoaleli-Mokoteli & Maina, 2015; Yazdanfar & Öhman, 2015). This probably stems from traditional economics theory, which assume that entrepreneurs and business owners are motivated by the prospect of harvesting maximum possible returns from any given set of economic resources that are invested in an entrepreneurial venture (Baumol, 1968). In other words, entrepreneurs are rational human beings who would not engage in entrepreneurship if they cannot make profit and therefore, profitability is a key measure of enterprise performance and success.

However, the use of the profitability indicator is not beyond reproach. The primary problem is revealed by economic literature, which underscores the accountants' and economists' dichotomy on the definition of profit (Hirschey, 2016). Economists view profits as denoting saving costs (i.e. economy) while for accountants' profits find expression in a healthy financial balance sheet (arising from selling prices higher than purchase price of goods and services). In view of the different approaches to the calculation of the profit, the question on which perspective to use when evaluating entrepreneurial success arises. Apart from this, some accounting conventions and assumptions guiding the calculation of operating profits may be misleading, which obscure the conception of business success. An example of such a convention is the accruals concept, which requires the full recording of revenue and expenditure in the financial period in which they arise (Hribar & Yehuda, 2015). This creates an ambiguous financial position for the business as recording of accruals creates an impression that money has been received even if actual cash receipts or payments have not been realised. In reality, some accruals may turn out to be bad debts as money is forfeited by the business.

While it is useful to employ profitability as an entrepreneurial success measure for large listed companies because their financial statements are consistently prepared based on generally accepted accounting practices and publicly available, this cannot be said of small non-listed entities (Rensberg & Botha, 2014). In fact, there are no rigid conventions, which SMEs and non-listed business have to adhere when preparing financial statements (Nieman & Fouché, 2016). As a result, varying accounting assumptions may be applied over different financial periods and between different firms. Consequently, profitability becomes an unreliable measure of entrepreneurial success across small business organisations and over time. To circumvent this limitation, a survey of past researches, which employed profitability as a measure of entrepreneurial success, reveals that several SMMEs used the business owners' or managers' satisfaction with the level of profitability as a way of measuring success (Aluko, 2003; Amah & Okoisama, 2017; Watson, Gatewood & Lewis, 2014). In these studies, Likert statements like "Indicate the extent to which you are satisfied with the level of profits made by your organisation over the last two years" were usually used for assessment purposes. The response categories for the statements were measured using a five Likert-based scale ranged from "totally satisfied" to "totally unsatisfied." However, the use of personal assessments may undermine objectivity as personal experiences and perceptions may interfere with measurement. Finally, such measurements remain the popular and more accessible ways of assessing levels of profitability for most SMMEs.

A variable that is closely related to profitability and sometimes used to gauge entrepreneurial success is earnings per share (EPS). It relates to the portion of profit, which is allocated to each unit of common stock (Reid & Myddelton, 2017). In other words, EPS reflects shareholders' wealth. Dichev, Graham, Harvey and Rajgopal's (2013) study of approximately 400 chief financial officers in the USA on the definition and drivers of earnings quality reveals that about 60% of the respondents were of the view that EPS are the most important indicator of business success to external stakeholders. However, there is need for caution on relying on this variable since questions are raised over its compatibility with overall value creation. This is because share prices are consequences of market perceptions of the businesses and their valuation. According to Mauboussin (2012), there is a possibility that some measures

intended to increase EPS can be detrimental to long-term value creation, thus, suggesting that the relationship between the two variables maybe tenuous. In fact, EPS is criticised for not being consistent and lacking predictive ability. As a result, profitability is perceived as more reliable measure of business success.

2.5.2. Customer-related indicators

The customer is an important element of contemporary marketing-guided business environments and plays a key role in the performance of business organisations. Marketing theory postulates that firms or service providers thrive on creating proportionately greater value for their high value customers. In other words, the success of business partly rests on its ability to keep its customers content. As Hill and Brierley (2017:17) claim: "It's only by offering best value, by making your customers very satisfied, that you can be sure of retaining their loyalty." It is for this reason that some studies use measures like the customer satisfaction index, customer complaint ratio, customer complement ratio and customer retention as indicators of a business's non-financial performance. The perception is that due to improvements in customer satisfaction, lower customer defection will follow leading to more repeat business and increased financial gains because it reduces costs, increases returns, and generates more sales..." (Saeidi et al., 2015), which are critical to a firm's survival and performance. In general, survey-based studies use Likert-scale statements to assess customer satisfaction. For instance, Galbreath and Shum (2012) used a seven-item instrument to gauge customer satisfaction with product or service quality, customer satisfaction with value for price, and meeting customer expectations. Other studies evaluate customer satisfaction-based product quality, cost, and meeting customer expectations (provided them). The items constituting the instruments use five-point scales with response categories ranging from "strongly dissatisfied" (1), to "strongly satisfied" (5).

2.5.3. Sale growth

Literature suggests levels of sales growth as an important indicator of firm performance and the extent of entrepreneurial success (Amato, Baron, Barbieri, Belanger & Pierro, 2017; Keith, Unger, Rauch & Frese, 2016; Vij & Bedi, 2016). In a

study that evaluated the effect of entrepreneurial competencies and the moderating effect of business environment on business success in small and medium sized enterprises (SMMEs) in Malaysia, Ahmad, Ramayah, Wilson and Kummerow (2010) claim that sales turnover and sales growth, among other factors, are strong indicators of firm performance. This view is collaborated by Rahman, Amran, Ahmad and Taghizadeh (2016) who employ sales growth and sales revenue as indicators of financial performance in their study of the relationship between base of the pyramid (BoP) entrepreneurship success and wellbeing. The association of sales growth and entrepreneurial success is embedded in the projection of the former as an indicator of the efficiency and effectiveness of a business organisation's marketing efforts. The argument is that sales growth is an indicator of a firm's potential for future growth (Cao & Li, 2015).

Other studies, which adopted sales growth as an indicator of firm performance, employed self-reports where respondents were asked to rate their firms' sales growth relative to competition or to indicate their degree of satisfaction/dissatisfaction with the growth of sales in their organisations (Ahmad et al., 2010; Amato et al., 2017; Rahman et al., 2016). O'Sullivan and Abela's (2010) study of marketing performance measurement and its effect on the stature of marketing and firm performance adopts a similar approach. In the study, a sample of senior marketers in high-tech companies in North America were asked to reveal their level of satisfaction with sales revenue growth over the past years. Their responses were captured on a five-point Likert scale ranging from "excellent" to "poor." Despite the convenience of self-reports as a way of gathering data, their usefulness is hampered by their vulnerability to social desirability bias, exaggeration and reliance on voluntary participation.

2.5.4. Optimum capacity utilisation

The concept of capacity utilisation is also used as a criterion for measuring the productive efficiency of a firm's fixed assets, which itself is a measure of entrepreneurial success. Situations that have an effective capacity utilisation witness a decrease in the average costs of production as production rises (Foster, Haltiwanger & Syverson, 2016). This means that a higher capacity utilisation can lessen unit costs and thus offer a firm a competitive edge and increase the chances of entrepreneurial

success. The Asian Productivity Organisation (2015) suggests that SMEs should gauge their optimum capacity utilisation using two main indices and these are capital productivity and sales per dollar of capital. Capital productivity measures the efficiency and effectiveness of fixed assets in the generation of value addition. In addition, sales per dollar of capital measure the efficiency and effectiveness of fixed assets in generating sales. The use of these indices assists in capturing data on aspects such as return on assets and stock returns as indicators of firm performance (Rust, Moorman & Dickson, 2002). A time lag is then allowed to determine causality between capacity utilisation and business performance, which is reflective of entrepreneurial success. A drawback on relying on this method is that such data is not readily available, and researchers tend to rely on the opinions of informants who are in the firms under study. This means that the method relies on using self-reports where sample elements respond to Likert scale statements.

2.5.5. Employee-related indices

Employee-related indices are slowly getting recognition as potential indicators of firm performance in management research. This acknowledgement rests on the Human Capital Theory, which argues for the significance of experienced, skilled, committed and motivated human labour in the success of entrepreneurship in firms (Miller, Xu & Mehrotra, 2015). Criteria like employee turnover rate, employee satisfaction index and employee absenteeism rate are used to gauge a firm's performance, hence the need to have a clear understanding of these indicators.

Employee turnover rate relates to the proportion of a labour force who leave an organisation during a particular period (Kovner, Brewer, Fatehi & Jun, 2014). This percentage encompasses voluntary resignations, dismissals and retirements. The degree of employee turnover reflects overall employee satisfaction, retention rate and the effectiveness of the human resources recruitment process (Bratton & Gold, 2017). Hom, Lee, Shaw and Hausknecht (2017) proclaim that labour turnover disrupts the financial performance of firms, which by extension impact negatively on entrepreneurial success. Worse still, workers leaving to join rival firms destabilise their previous firm's competitive advantage or existence (Agarwal, Ganco & Ziedonis,

2009). Hence, there is a need to keep the rate of labour turnover in check as this contributes to the entrepreneurial success of firms.

Employees are an important stakeholder constituency in firms and are perceived as having a bearing on overall performance. There is a need for firms to keep employees satisfied with their jobs (Kossmann, 2017). A tool often used to evaluate workers' satisfaction is the employee satisfaction index. It consists of a questionnaire on which employees respond on a five-point scale to statements relating to the extent of satisfaction with their current jobs (McPhail, Patiar, Herington, Creed & Davidson, 2015). The response categories range from Strongly Agree, Agree, Undecided, Disagree, Strongly Disagree and total scores are then computed from the responses derived. The index is then calculated by dividing the total score by the maximum possible score multiplied by 100. Organisational scholars are interested in this indicator because of the perceived positive relationship between employee satisfaction and external customers' satisfaction (Kossmann, 2017) which may have a bearing on sales and ultimately entrepreneurial success. The bottom-line is that happy and contented employees are those whose desires and needs are fulfilled at work and these in turn are motivated to create value for external customers.

Lastly, the rate of employee absenteeism, which reflects employee morale or lack of it, has a bearing on firm performance through its influence on labour turnover and employee engagement (Peretz, Levi & Fried, 2015). Such performance has an impact on overall entrepreneurial success with high performing firms tending to demonstrate a good measure of entrepreneurial success. According to Kocakülâh et al., (2018), employees' intentional or habitual absence from work is costly and disruptive for business and has a negative effect on overall morale and productivity. In addition, measures to deal with absenteeism place a financial burden on firms, which may undermine the financial bottom line of firms and ultimately, their entrepreneurial success. Thus, there is a need for firms to implement measures that limit unreasonable absence or wilful evasion of duty.

2.5.6. Business survival

Many researchers report on the importance of business survival as an indicator of business performance and entrepreneurial success (Coeurderoy, Cowling, Licht & Murray, 2011; Cowling, 2006; Siepel, Cowling & Coad, 2017). The perception is that poorly performing firms or failed entrepreneurs exit markets and do not last in entrepreneurship. According to Siepel et al., (2017), business survival is a sign of persistence or the thriving of the firm. Therefore, the continued progression of a firm through the various stages of its life cycle indicates success i.e. the ability to effectively use its human and non-human resources in pursuit of entrepreneurial opportunities.

The concept of business survival is often associated with that of entrepreneurial resilience, which relates to persistence and the ability to acclimatise to changed circumstances (Ayala & Manzano, 2014). The same quality (i.e. entrepreneurial resilience) enables entrepreneurs to overcome tragedy or setbacks, bounce back and survive (Bullough, Renko & Myatt, 2014). Findings from several studies suggest that entrepreneurial resilience is a good and consistent predictor of entrepreneurial success (Ayala & Manzano, 2014; Fisher, Maritz & Lobo, 2016; Williams & Vorley, 2014).

While this section provided some of the key variables, which are commonly used to evaluate entrepreneurial success and/or failure, a scrutiny of entrepreneurship literature reveals increasing emphasis towards the use of multi-dimensional indices (Bourant & Psomas, 2017; DeVaughn & Leary, 2017). The apparent popularity of this approach is founded on the argument that no single variable comprehensively captures the complexity of the entrepreneurial success construct. In fact, it is a documented fact that entrepreneurs differ in terms of reasons for being in business, thus, complicating any attempts at evaluating their extent of success (Cant & Wiid, 2015; Hefer, Ramadani, Hisrich & Gërguri-Rashiti, 2015). Hence, to use a single indicator would be self-defeating.

It has to be acknowledged that some business entities have multiple stakeholders with diverse, and at times diverging perspectives on how to define entrepreneurial success and business performance (Lawrence & Weber, 2014). For instance, internal stakeholders, such as owners of a firm, may be interested in maximising their wealth, while managers may be concerned about increasing their income and power, and employees interested in continuation of employment and living wages (Ferrell & Fraedrich, 2015). In addition, the interests of external stakeholders, such as customers and society, may be on ensuring that a firm provides environmentally friendly products, which may have repercussions for the firm's financial position. As a result of these contrasting interests, the rating of entrepreneurial success or failure based on single criterion is superficial, inadequate and contentious.

This study, which acknowledges the intricacy of entrepreneurship success, adopts a multi-factor yardstick to assess this variable. Thus, a composite measure consisting of quantitative and non-quantitative Likert-scale statements is adopted. The statements developed requested respondents to indicate their level of satisfaction with the performance of their business organisations over issues such as profitability, sales revenue growth, market share growth, employee retention, stability of industrial relations.

The next section teases out empirical studies on the relationship demographic variables and entrepreneurial success.

2.6. STUDIES ON THE RELATIONSHIP BETWEEN DEMOGRAPHIC VARIABLES AND ENTREPRENEURIAL SUCCESS

Findings from previous studies suggest that demographic factors such as previous business/construction industry exposure, owner/manager's level of education, gender, age, culture and ethnic background, are instrumental in shaping the success of emerging female-owned and managed engineering and construction businesses. These factors are elaborated in the following sub-section of this chapter.

2.6.1. The entrepreneur's age

There are divergent views on role of the age of the entrepreneur and its relation to the creation of businesses and realisation of entrepreneurial success (Daniels, Herrington & Kew, 2016; Tweneboah-Koduah & Adusei, 2016; Mokgosi, 2017). Although the age of the entrepreneur is considered a key variable in the successful incubation and profitable operation of businesses (Chiliya & Roberts-Lombard, 2012), researchers, such as Tweneboah-Koduah and Adusei (2016), affirm the prevalence of age cycles in the establishment of successful business operations. For instance, entrepreneurial activity is considered considerably lower among those below 24 years, rises significantly among the mature adults falling within the 25 to 34 years' age range and then dissipates completely after the age of 54 (Tweneboah-Koduah & Adusei, 2016).

A further strand of research postulates, in contradiction to the mature age axiom that, opportunity recognition, exploitation of opportunities, risk taking and mobilisation of entrepreneurial resources is associated with younger individuals than older ones (Awa, Emecheta & Ukoha 2015; Olugbola, 2017). The contention by Olugbola (2017) is that individuals who would have advanced in terms of age, tend to have limited drive and energy to adopt innovative behaviours or creative ideas in comparison to their younger counterparts who seem to have more time and persuasion to take risks. The general sentiment in literature is that younger individuals tend to be more inclined to exploit the new opportunities and take some risks associated with the creation of new ventures and entrepreneurship. Overall, the reality is that, while literature tends not to distinguish between the types of entrepreneurship opportunities and size of businesses referred to with reference to the entrepreneur's age, it is success in opportunity-driven entrepreneurship that often involves more mature individuals than necessity-driven entrepreneurship (Bijaoui, 2012; Mokgosi, 2017; Ndofirepi, 2016; Olivier, Frank, Jean-luc & Olivier, 2011). Therefore, the correlation between age and entrepreneurship success needs to take cognisance of multiple factors such as the type of entrepreneurship, the scale of business operations and the industry that the business is established.

2.6.2. Ethnicity

Dzansi and Arko-Achemfuor (2016) contend that ethnicity may exert an important influence on the entrepreneurial behaviour and success of individuals in a specific geographic context. This follows an observation of variations in entrepreneurial success among different South African ethnic groups. According to Dzansi and Arko-Achemfuor (2016), disparities in attitude towards risk, a factor with a large bearing on entrepreneurial success among different ethnic groups in South Africa, has a direct influence on the entrepreneurial behaviour and success among individuals in the country. Their assertion is based on the findings from a survey of a sample of 400 entrepreneurs from South Africa's four main ethnic groups (White Afrikaners, Indians, Coloureds and Tswanas as distinct groups) in a South African municipality. The outcome of the study reflects significant differences among the four ethnic groups with Indians and White Afrikaners being more risk tolerant than Tswanas and Coloureds.

The findings of Dzansi and Arko-Achemfuor (2016) are consistent with those from other studies conducted in the South African context. For instance, Van Scheers' (2010) study on the role of ethnicity and culture in developing entrepreneurs in South Africa notes significant differences in risk-taking attitudes among South Africans of Asian, Indian and Black ethnicity. The same study reveals a significant relationship between ethnicity and small entrepreneurial success based on profitability, a growing customer base, customer satisfaction, employee satisfaction, and the entrepreneur's personal satisfaction. The explanation for the differences in entrepreneurial success is that individuals in different ethnic groups have different risk propensities, face unique operational challenges and encounter different entrepreneurial opportunities. There is also evidence that specific ethnic groups effectively take advantage of the opportunities availed by their family ties and social networks in pursuit of business purposes. For instance, although both Indian and Black Africans in South Africa were once economically disadvantaged by apartheid, Indian entrepreneurs comparatively succeed in business because they utilise resources (e.g. bankers, accountants and lawyers as information sources) provided by family and their ethnic community more than Black Africans.

The ethnic-based differences in entrepreneurship/entrepreneurial success are evident in results from studies conducted in different countries across the globe. As an illustration, Kenney and Patton (2015) as well as Kerr and Mandorff's (2015) studies on the relationship between ethnicity, occupational choice, and entrepreneurship success carried out in the USA demonstrate that immigrant groups of different nationalities favour different business niches. Most importantly, businesses owned by small and socially isolated groups were relatively successful compared to those of other ethnic groups because of what the scholars term concentrated entrepreneurship.

2.6.3. Business training

Various researchers across the world have investigated the relationship between a business owner's training/expertise and entrepreneurial success (Alasadi & Al Sabbagh, 2015; De Mel, McKenzie & Woodruff, 2014; McKenzie & Woodruff, 2016; Saks & Burke-Smalley, 2014). However, before reviewing the substantial literature relevant to the stated relationship, it is important to clarify the term business/entrepreneurial training, which is used in this sub-section to advance a common understanding of the term. Explaining the term also reduces misunderstandings of opinions that emerge from the use of the term in the current study.

Findings from previous studies, which were conducted at different geographical locations across the world, reveal that business owners who have undergone business/sector specific training score relatively higher on performance measures such as profitability, sales volume, and market share and business survival among others. Eikkebrokk and Olsen's (2009) study on the relationship between training, competence and performance of small and medium-sized enterprises (SMEs) operating in the field of e-business reveals a positive correlation between these variables. The results, which emanate from a triangulation of qualitative and quantitative data collected from 339 e-business SMMEs and 116 providers of e-business related training in three European countries, has important implications for both theory and practice. The results highlight the importance of training and equipping owners and managers with the appropriate competences, and underscore? the need

to conduct context-specific studies to ascertain whether findings could be generalised across economic sectors. Therefore, the current study addresses the relationship between the business training received and entrepreneurial successes of female-owned/managed businesses in the engineering/construction sector.

In a separate study, Raven and Le (2015) examined the effects of business training programmes on women microcredit recipients in rural parts of Vietnam and found that business training improves the success of women-owned small businesses. Using data collected in 2012 from 120 women business owners in several communes in Quang Tri Province, the study findings reveal that that business training can improve microenterprise performance. In addition, business training enhances motivation and the perception of entrepreneurship as a career option for women. The results provide field evidence to support the belief that business training improves the probability of entrepreneurial success of microenterprises. However, the generalisability of these results is hampered by two factors. Firstly, the sample size was relatively small in view of the number of rural women entrepreneurs in Vietnam. In addition, the study did not specify the economic sectors in which the respondents were involved in. However, it adds to the number of studies on the importance of training and therefore strengthens the case on the positive relationship between training and entrepreneurial success.

A key study carried out in South Africa that supports claims of a strong relationship between training and entrepreneurial success of women-owned businesses was conducted by van Vuuren and Botha (2010). The purpose of the investigation was to assess the effect of three different training interventions, namely the business start-up, basic entrepreneurship, and advanced entrepreneurship programmes on entrepreneurial success. The study sought mainly to quantify the business performance indicators and skills transfer that occurred after the training intermediations. The results of the pre-test and post-test (ten weeks after the training interventions took place) research design reveal following: business performance indicators improved for all three training groups after they attended the training interventions. Furthermore, it was proved that skills transfer took place after the respondents attended the training interventions.

2.6.4. Previous business/construction industry experience

Previous industrial/start-up experience, such as past involvement in operating a business in a specific industry or direct involvement in founding a business (Toft-Kehler, Wennberg & Kim, 2014), enhances the chances of entrepreneurial success. This postulation corroborates findings from Chong's (2012) study of the perceived success factors of operating small, micro and medium enterprises amongst Malaysian entrepreneurs. The findings of his study reveal that the owner's and or managers' previous business experience had a positive significant influence on entrepreneurial success. Using results from a separate study, Mitchelmore and Rowley (2013) argue that the possession or lack of previous entrepreneurial and managerial experience among many female business owners undermines the probability of the success of their businesses. In addition, Lee and Stearns (2012) underscore the significance of female business owners'/managers' industry experience in the success of their businesses.

Despite evidence that support the existence of a strong positive between owner's previous business experience and entrepreneurial success, findings from Soriano and Castrogiovanni's (2012) study suggest that the relationship may not be universal. Their investigation of the effects of entrepreneurial human capital on SMME performance using data on 2,713 SMEs within the European Union suggest that previous business experience influences business productivity positively but not profitability (NB the two factors are measures of entrepreneurial success). The same study also draws attention to the reality that the influence of previous business experience on entrepreneurial success/performance is conditional. According to Soriano and Castrogiovanni (2012), there is a link between business performance and incorporation of other CEO-owners in the founder's advisory board. The link is affirmative when the advisor's own business has failed before and adverse when the advisor's venture has been successful.

The findings on this relationship become more complex as it is industry specific. Cassar (2014) argues that the positive effect of the owner's previous business

experience on entrepreneurial success is felt more in high technology industries. However, Cassar's (2014) study suggests that there is no significant evidence to support the positive relationship between the owner's start-up experience and improved entrepreneurial performance in other industries, which runs contrary to the predominant view in literature. Similarly, Toft-Kehler, Wennberg and Kim (2014) proffer that the positive business experience-entrepreneurial success relationships only apply to adept entrepreneurs. The relationship is negative in the case of novice entrepreneurs because of the failure to apply past experiences in new businesses.

The business environment is full of risk and uncertainty and therefore, experimenting in the field allows one to acquire knowledge on the state of the environment and the task at hand (Lee & Klassen, 2016). This knowledge facilitates greater comprehension of the task at hand and reduces the uncertainty when forecasting future outcomes of the task. With exposure and performance of successive tasks, one acquires greater competence and expertise that could be critical to entrepreneurial success. Start-up experience that is specific to the industry is also associated with improved entrepreneurial success (Cassar, 2014).

The relationship between entrepreneurial success or failure and the owner/manager's experience in business has been widely investigated in the South African context (Chadhliwa, 2015; Martin & Root, 2010; Ntuli & Allopi, 2014; Worku, 2016). Mavetera, Sekhabisa, Mavetera and Choga's (2015) study on factors influencing the success of construction projects by emerging contractors in the Mahikeng area of South Africa reveals that several emerging contractors in the construction industry had challenges in completing construction projects. This was attributed, mainly, to the owners' and managers' lack of construction project skills and experience. This finding is supported by findings from Worku's (2016) study on developmental obstacles adversely affecting emerging contractors in the construction industry of Limpopo Province. Apart from identifying a lack of key entrepreneurial and construction industry skills among the firms surveyed as a key hindrance to entrepreneurial success, the study acknowledged that most emerging contractors in the Limpopo province were hampered by limitations in terms of exposure to the technical and entrepreneurial aspects of the construction industry.

The research undertaken in different countries worldwide underscore a positive correlation between a firm founder or owner's previous professional exposure and entrepreneurial success (Baptista, Karaoz & Mendonca, 2014; Eschker, Gold & Lane, 2017; Gottschalk & Niefert, 2015;). However, the main weakness in studies carried out in South African is in its failure to consider the gender aspect. The findings could have been comprehensive had they addressed how previous professional exposure affected engineering and construction businesses owned by men and women. So far, there has been limited scholarly discussion on the issue and therefore further studies would enrich this research area.

2.6.5. Education

A relationship between an entrepreneur's level of education and success in business has not been conclusively established and is ambiguous in academic literature (Lafstrom, Bates & Parker, 2014). There are numerous narratives/stereotypes about the uneducated entrepreneur /high-school dropout who have thrived in the business world armed with informal education only (Robinson & Sexton, 1994). However, the same scholars proclaim that "higher levels of education increase both the probability of becoming self-employed and entrepreneurial success of individuals in that sector in terms of the earnings." What is not clear is the effect of exposure to specific types of education or educational programmes such as business school or entrepreneurship programmes as opposed to general levels of education on entrepreneurial success.

However, there is a general consensus on the positive correlation between small and medium entrepreneurs' level of education and entrepreneurial success (Ayala & Manzano, 2010; Lostrom et al., 2014; Millán, Congregado, Roman, van Praag & van Stel, 2011;). According to Millán et al. (2011), the competencies and skills acquired by entrepreneurs through education are a strong drive of entrepreneurial success and business performance. The aforementioned scholars proclaim that a higher level of education, among potential and active entrepreneurs, is intricately linked to high quality entrepreneurship, innovation and economic growth.

Surveys by Ntuli and Allopi (2014) and Mohlala (2015) reveal that many of the challenges encountered by South African emerging contractors in the construction industry arise from their lack of key skills, knowledge and competencies. In fact, Ntuli and Allopi (2014) proclaim that SMMEs owned or managed by individuals with higher technical qualifications and knowledge perform better and are more resilient than those owned or managed by individuals without such credentials. This view corroborates Martin and Root's (2010) observation that emerging contractors fail to develop enduring enterprises because of inadequate knowledge of the construction industry. There is also evidence that potential suppliers and clients have little faith in conducting business with contractors with limited levels of technical knowledge and education (Mohlala, 2015). However, the preceding results were based on studies which did not differentiate between the effect of owner's level of education on women and men owned businesses. Much more interesting results would reveal such gender distinctions and give a broad understanding of the different critical success factors for men and women businesses. It is for this reason that this study emphasises engineering and construction businesses owned and managed by female entrepreneurs.

2.6.6. Prior entrepreneurship exposure

The link between prior entrepreneurship exposure and other business-related aspects is inconclusive (Chlosta, Patzelt, Klein & Dormann, 2012; Shook, Priem, & McGee, 2003). However, there is substantial evidence that indicates a positive correlation between an individual having close entrepreneurial ties and the business pre-entry variables (Crant, 1996; Matthews & Moser, 1995;). Having close entrepreneurial ties with people already operating in an industry or running specific businesses (e.g. family entrepreneurs and family business role models) affords individuals the opportunity to acquire both human capital and financial capital (Dunn & Holtz-Eakin, 2000) necessary to run business entrepreneurially. However, what is not clear is the relationship between such exposure and post-entry business performances. Results from a study by de Jong and Marsilli (2015) reveal that an individual's prior entrepreneurial exposure is only associated positively with business survival in cases where the individual is taking over an existing business. Paradoxically, prior entrepreneurial exposure is negatively associated with the post-entry survival of businesses started

by serial entrepreneurs. Following the findings of the preceding study, the influence of prior entrepreneurship exposure on entrepreneurial success can be understood if analysed in the context of other contingent factors.

2.6.7. Owner's financial literacy and access to financial resources

An existing robust body of literature suggests that there is a positive relationship between the owner/manager's financial literacy and the entrepreneurial performance of a business. A study by Fatoki (2014) reveals that businesses managed by financially literate owners perform better than those managed by less literate counterparts. A disconcerting issue is the relatively lower level of financial literacy across the world (Xu & Zia, 2012). This situation is probably more pronounced in developing countries due to the limited provision and application of financial education. This scenario can be extended to the business environment where women business owners are presumed to have lower financial literacy than men (Eniola & Entebang, 2016). As such, women business owners have limited awareness of financial products available on the market as well as a relatively lower capability to make sound financial decisions. This is despite the fact that women-owned businesses contribute substantially towards the effective performance of economies across the world (Allen & Truman, 2016). That said, "when the financial literacy skills of entrepreneurs fall short of those needed to operate a successful business, it is more than the individual business at risk (Dahmen & Rodriguez 2014:1)." The bottom-line, therefore, is that financial literacy and access to finance have a significant effect on entrepreneurial success.

Convenient access to finance at affordable rates is critical to the success of any business enterprises (Adomako & Danso, 2014; Wiklund & Shepherd, 2005). Neneh's (2016) study on the effect of the owner's financial literacy on firm performance, which was carried out in the Free State Province of South Africa reveals a positive correlation between the variables. However, the study findings also indicate that the average SMME owner had low levels of financial literacy and access to financial resources. Thus, the inference from these findings is that the availability of financial resources to SMME owner/ managers that have limited financial understanding may effect entrepreneurial success negatively. In addition, numerous studies undertaken using South African SMMEs in the engineering and construction sector indicate that the

survival of such entities, is to a large extent, undermined by the owner/initiators' limited financial resources and financial management skills (Chadhliwa, 2015; Ntuli & Allopi, 2014; Worku, 2016). This is worsened by the fact that most of these owners are from historically disadvantaged groups, which are still trying to establish themselves in the sector (Mohlala, 2015) and hence access to financial training and sophisticated financial literacy remains a grey area for most of these enterprises. What has not been scientifically proven, however, is whether women entrepreneurs in the sector fare worse than men.

2.6.8. Age

The issue of the factors influencing entrepreneurial success in developing countries is still open for investigation (Alasadi & Abdelarim, 2008, add recent sources here). However, there is a sizeable body of literature on small entrepreneurial success performance, which suggests that the business owner's characteristics (age included) can influence entrepreneurial success (Alasadi & Al Sabbagh, 2015; Mas-Tur, Pinazo, Tur-Porcar & Sánchez-Masferrer, 2015; Robinson & Stubberud, 2014).

Some research considers age to influence a person's expectations about his or her choice of self-employment, which suggests that individuals from different age groups hold different perceptions about entrepreneurship. For instance, Kautonen, Tornikoski and Kibler (2011) observe that older individuals' individuals are increasingly showing a higher propensity towards entrepreneurship than individuals in lower age categories. This is because early retirees tend to have comparatively better professional and entrepreneurial know-how, financial means and social capital to successfully launch and manage new business venture than younger individuals. In fact, some scholars observe that the older individuals have the means to launch successful ventures in a risky environment but are unwilling to engage in risky entrepreneurship ventures (Mokgosi, 2017; Singh & De Noblem, 2003; Weber & Schaper, 2004). This is because they put more emphasis on the opportunity cost of time and thus prefer investments that yield quick returns in short time (Levesque & Minniti, 2006) of their existence compared to long term investments that take time to mature.

However, these findings are from the Western world and may not apply to the developing world. Thus, dedicated research needs to be undertaken in the emerging economies context so that more context-relevant conclusions can be drawn. For instance, it would be interesting to ascertain if age is related to the uptake of engineering and construction-owned and managed businesses by South African women entrepreneurs. Other scholars, however, emphasise the age of the business rather than that of the entrepreneur as having a greater bearing on entrepreneurial success/performance (Liu, Wright & Filatotchev, 2014; Osunsan, Nowak, Mabonga, Pule, Kibirige & Baliruno, 2015).

2.6.9. Entrepreneurial competence as a mediator between education and entrepreneurial success

Research indicates that a good quality education can have an impact on entrepreneurial development as it can enhance an individual's level of self-efficacy and self-confidence (Global Entrepreneurship Monitor, 2012). Entrepreneurial education and entrepreneurial competence are both considered as contributing factors to entrepreneurial success such as improved firm performance. Garcia-Rodriguez, Soto, Ruiz-Rosa and Sene (2017) suggests that a person's attitude towards entrepreneurship and skills could be directly influenced by her entrepreneurial education. It is generally understood that entrepreneurial education is as much about developing general creative skills as much as it is about developing enterprising skills to enhance entrepreneurial success.

Literature further suggest that entrepreneurial education contributes to the development of the entrepreneurial competencies to successfully operate the business and helps build entrepreneurs' confidence in performing entrepreneurial activities (Engle, Dimitriadi, Gavidia, Schlaegel, Delanoe, Alvarado & Wolf, 2010). Following this logic that entrepreneurship education shapes entrepreneurial competence development and entrepreneurial competence development affects entrepreneurial success, it can be argued, therefore, that entrepreneurial competence mediates the relationship between entrepreneurship education and entrepreneurial success. For instance, Athayde (2009) contends that successful entrepreneurs often have collection of certain competencies and attributes which are derived from

entrepreneurial education. Several scholars have reported that entrepreneurial education can influence and improve the entrepreneurial competencies leading to business success (Autio, Keeley, Klofsten & Ulfstedt, 1997; Kolvereid, 1996; Papagiannis, 2018). It is quite evident from different studies that firm performance, growth and profitability (dimensions of entrepreneurial success) are consequences of improvements in entrepreneurial competencies (Nakatha, 2018). Furthermore, Mitchelmore & Rowley (2010) highlighted the importance as well as the effect of competencies on entrepreneurial success. One can infer that entrepreneurial education contributes to improvements in entrepreneurial competence, which contributes to entrepreneurial success.

2.6.10. Entrepreneurial competence as a mediator between age and entrepreneurial success

Various studies have established a strong relationship between entrepreneurs' demographic characteristics such as age, gender, and education, and entrepreneur success (Islam, Khan & Obaidullah, 2011; Kristiansen, Furuhoif & Walid, 2003; Mazzarol, Volery, Doss, & Thein, 1999). Although there has been a strong relationship between demographic characteristics and entrepreneurial success, multiple viewpoints have emerged on how an entrepreneurs' age may be expected to influence the success of the entrepreneur. Some authors argue that younger entrepreneurs' may be in a better position to achieve entrepreneurial success (Kammel, 2012; Wolverson, 2013), others have taken an opposite stance, suggesting that older entrepreneurs' possess a distinct advantage in the realisation of entrepreneurial success (Cooner, 2012; Wadhwa, 2011). Advocates of a positive relationship between entrepreneur age and venture performance observe that several qualities commonly associated with older age may be conducive for success. For example, Wadhwa (2011), has suggested that there is no substitute for the value of experience in an entrepreneur achieving venture success. One can infer from this view that with experience nurtures the development of entrepreneurial competence, which means age positively impacts entrepreneurial success by first improving the competences deemed critical to the realisation of success. This buttresses the argument that older entrepreneurs have had the opportunity to build several advantages relative to their younger counterparts, including the capacity to construct of a more developed social

network, the accumulation of greater financial resources, and the capacity to make more seasoned judgements (Conner, 2012). Therefore, age can be conceived to affect entrepreneurial success via the development of competences such as social network development and resource management competences.

In sharp contrast to those citing the positive effects for age, supporters of a negative relationship between entrepreneurs' age and venture success argue that qualities commonly associated with youth, in fact, offer the greatest advantage relative to realising entrepreneurial success. For example, both Kammel (2012) and Wolverson (2013) have suggested that the energy and motivation levels of younger entrepreneurs may be greater than older entrepreneurs. A study by Prasad, Ehrhardt, Liu and Tiwuri (2013) offered mixed results whether older or younger entrepreneurs may be able to achieve entrepreneurial success. The study found out that innovative competence mediated the relationship between an entrepreneur's age entrepreneur's success. This could mean that age affect entrepreneurial success via competence development.

2.7. CHAPTER SUMMARY

This chapter focused on the concept of entrepreneurship success and reviewed its multi-dimensional and complex nature. It is this intricate character that lends the variable to multi-factor measurement. The chapter also noted, in the literature review that, business success is subject to various demographic characteristics. The next chapter deals with the human capital variable, which is one of the dependent variables in this study.

CHAPTER 3: CAPITAL FORMS, ENVIRONMENTAL DYNAMISM AND ENTREPRENEURIAL COMPETENCE

3.1. INTRODUCTION

The previous chapter discussed personal variables and entrepreneurial success in order to untangle the fundamental effect of personal factors on entrepreneurial success. The chapter demonstrated how various female managers' and SMMEs owners' personal demographic attributes in the engineering and construction industry are employed to detect and exploit opportunities in the business environment to ensure entrepreneurial success. This chapter builds on Chapter 2 and locates the extant literature on various forms of capital, environmental dynamism and entrepreneurial competence and their effects on entrepreneurial success of engineering and technology businesses operated by female owner/managers.

This chapter will also address various of forms of capital and environmental dynamism, and their effect on the entrepreneurial success of small businesses such as female owned/ managed firms in the engineering and construction industry. The central argument is that a moderation of the interaction of various forms of capital and entrepreneurial competence from an environmental dynamism perspective will lead to entrepreneurial success. The following sections present the disputed nature of capital, a discussion on the categories of capital, and an evaluation of the influence of the various forms of capital on entrepreneurial competence. The chapter also discusses environmental dynamism and closes with a deliberation on the nature of the relationship between capital, environmental dynamism and entrepreneurial competence and entrepreneurial success as key constructs of measurement in the study.

3.2. CONCEPTUALISATION OF CAPITAL

There exists both controversy and lack of agreement on what capital is (Hanushek & Kim, 1995; Piazza-Georgi, 2002; Trivadi, 2009; Kiosse & Otley, 2016). For instance, Rowles (2007) alludes to the inability of capital accounting reporting to distinguish the underlying stock of wealth (capital) from the underlying gains or losses of wealth financial reports (that is income). However, despite the controversy there is consensus

that, in its basic form, capital comprises the non-consumable but depreciating inputs into the production process (Piazza-Georgi, 2002; Trivedi, 2009). The original use of the term, capital, had strong resonance with economics as it mainly focused on economic capital even though the expanded use of the term recently to cover natural capital, human capital, intellectual capital and social capital only extends the use of the term in metaphoric terms (Kiosse & Otley, 2016). As such, the reality that capital can be created and maintained using human effort indicates that it constitutes an investment. For instance, land can be invested through irrigation and fertiliser to generate an improved land capital in the same way an investment can be applied to labour through education and skills development to form human capital (Kiosse & Otley, 2016; Piazza-Georgi, 2002). It is from this understanding that human and social capital emerge “productive assets that are also created and maintained at the cost of considerable investment in human time and funds” (Piazza-Georgi, 2002).

Karl Marx (1887/1995) defines capital as inputs that share the residual profits. This definition has some resonance with female engineering and construction entrepreneurs who share in the profits of their labour and skills. The definition could apply to human capital (which comprises education, talent, skills and competencies) concerning the way human capital contributes to the generation of business profit. However, the definition is somewhat problematic as it is difficult to disentangle the returns generated from labourers’ efforts and that which is generated from the talent and effort of the individual entrepreneur.

Overall, this study identifies with Kiosse and Otley’s (2016) definition of capital as tangible resources, which are exploited in production of goods and services but which have a durable life. Kiosse and Otley (2016) elaborate that such resources are generally depleted with increased use and thus resulting in the depreciation of their asset value over an expected lifetime. This definition demonstrates that capital has economic significance and value, and contributes to increases in the utility of humans even though its value can be accentuated or devalued. At the core of capital stock is the fact that capital has an inherent potential to produce economically desirable outcomes even though the assertion about desirability is contested (Godwin, 2003).

Nonetheless, Godwin (2003) warns that assertions about desirability could accentuate the reductionist effect of capital with the fear that concentrating on essence could entrench the belief that natural and human capital are only important to the extent that they are productive resources exclusively.

While extant studies emphasise the role of the possession or non-possession of financial capital in new venture creation and business start-ups, there is a growing realisation among scholars that non-monetary assets also play a vital role in expediting entrepreneurial processes (Light & Dana, 2013; Martin, McNally & Kay, 2013; Pena, 2002; Vershinina, Barret & Meyer, 2011). Westlund & Bolton, 2003; Although traditional economics theory portrays financial capital in conjunction with land and human labour as one of the key economic resources, economic activity largely depends on the vibrancy of innovation, creativity, and transformation that are a result of other non-material forms of capital (Kling, Kling & Schulz, 2009). As a result, entrepreneurship researchers acknowledge the necessity of exploring the features of different forms of capital possessed by entrepreneurs.

Nonetheless, existing studies have gone overboard in describing the significance of distinct capital and ignoring the flexible nature of different types of capital (Al Ariss & Syed, 2011; Svendsen, Kjeldsen & Noe, 2010; Vershinina et al., 2011). The current study pursues this research gap by examining how available forms of capital influence entrepreneurial competence and entrepreneurial success. While the influence of the various forms of capital, such as social capital, emotional capital and intellectual capital on entrepreneurial processes, has received theoretical attention (Adler & Kwon, 2002; Coleman, 1988; Nahapiet & Ghoshal, 1998), practical studies are fundamentally lacking from literature.

A notable development across the world is that policy-makers in different contexts strive to grow entrepreneurship among women (Garg & Agarwal, 2017; Halkias, Nwajiuba, Harkiolakis & Caracatsanis, 2011; Hattab, 2012; Vijayakumar & Naresh, 2013). The reason for such interest is that women are viewed as representing a

comparatively unexploited cradle of entrepreneurial potential particularly in traditionally male-dominated occupations. In addition, some studies attribute the performance of female-owned and managed firms in male dominated fields to the possession or lack of non-financial forms of capital such as social, emotional and cultural (Prasad et al., 2013; Santarelli & Tran, 2013; Širec, Tominc & Rebernik, 2010). However, it is lamentable that such capital forms seem to be in short supply among females as noted in their limited involvement in engineering and construction sectors, especially at a time when female entrepreneurs are in demand in South Africa. These forms of capital are elaborated in subsequent sections.

3.2.1. Classifications of capital

There are various intersecting classifications of capital. Bourdieu's (1977, 1984, 1986) theory of practice is adopted as a fitting lens for classifying the various forms of capital and the related entrepreneur behaviours. This is specifically founded on Bourdieu's (1986) capital theory to differentiate between the social, emotional and cultural capital-controlled entrepreneurs. Social capital denotes "the sum of the resources, actual or virtual, that accrue to an individual or a group by virtue of possessing a durable network of more or less institutionalized relationships of mutual acquaintance and recognition" (Bourdieu & Wacquant, 1992:119). It is clear that Bourdieu (1984,1986) and Bourdieu and Wacquant (1992) adopted an individual perspective of social capital where access to resources and networks is considered critical to the attainment of individual goals. For instance, female entrepreneurs in engineering and construction who are proximally located near established and successful male entrepreneurs demonstrated greater proclivity to use such closeness and connections to access financial resources, markets and expertise than those without such networks. However, social capital can also be harnessed as a tool to exclude and prevent closely-knit group from entering or to fulfil unsavoury intentions (Bourdieu, 1986) as in the case of the Ku Klux Klan or Boko Haram.

Despite its lack of precision, emotional capital is considered to be an emotional resource that is passed down from parents to children through parental involvement (Reay, 2005). As such, children born into family businesses and those whose parents

are entrepreneurs can tap into emotion resources arising from their constant engagements with parental role models (Mogkosi, 2017; Rambe, 2019). In his famous book *Distinction*, Bourdieu (1984) documents how cultural capital is employed by middle class individual as cultural knowledge to cement their social status in the social hierarchy. As such, cultural capital becomes a tool harnessed by the middle class as cultural signifiers, a way of identifying themselves with the elite class and to distinguish themselves from the working class (Gauntlett, 2011). With reference to entrepreneurship, cultural knowledge for the identification of business opportunities may be inherent in the way entrepreneurs interact with their cultural practices, norms and mannerisms in order to create advantage at the expense of their counterparts. For instance, research that focuses on ethnic entrepreneurship in South Africa associated high orientation towards risk taking with White Afrikaners and Indians than in other ethnic groups such as coloureds and Tswanas (Dzansi & Arko-Achemfuor, 2016). Nonetheless, the existing body of entrepreneurial research shows that Bourdieu's theory stands out as a notionally strong means of examining the standpoints of entrepreneurs (Patel & Conklin, 2009; Terjesen & Elam, 2009). Although Bourdieu's classification has been noted as the one applicable to in this study, it is critical to acknowledge other classifications. For instance, Godwin (2003) classifies capital into natural capital, financial capital, produced capital, human capital and social capital. For Gordon, any natural resources that has the capacity to sustain economically productive processes, such as fertile soil, clean water, clean air, forests, fisheries, and natural ecosystems, could constitute natural capital. Although the original focus on natural capital was on productive natural resources that are usable by humans, the expanded conception of the term now covers physical capital and in particular the interaction between these resources and other natural and artificial ecosystems (e.g. infrastructure, factories and technologies). For Godwin (2003) financial capital (e.g. money, shares, bonds and stock) is considered a capital stock if it is invested in the production of goods and services (e.g. renting offices, paying human labour and acquiring equipment) of value to society. Produced capital would cover physical assets created through the application of human productive activities to natural capital, that are used to provide goods or services in various sectors, homes and communities. Since the last two forms of capital are discussed later, they will be excluded from Godwin's (2003) discussion of what they are.

Trivedi (2009) has classified capital into two intricately intertwined forms and these are physical capital and financial capital – that is capital goods and the monetary value that can be embodied in the capital goods. Although the dually constitutive nature (i.e. the twin notions) of capital is incontrovertible, what is contested in capital theory is the tendency to elevate one form at the expense of the other (Cohen & Harcourt, 2005).

However, Kiosse and Otley (2016) distinguish between economic capital, social capital and human capital. From an economic point of view, economic capital concentrates on physical assets with estimated monetary value, statement of ownership and their economic values (for example, value of shareholding and loans). Human capital would comprise stock of knowledge, skills and competences that contribute to their increased productive capabilities and be projected as a capital asset deployable over time. Unlike conventional economic capital, human capital may not depreciate with increase use – for instance experience is expanded with increased encounters to relevant work-related entrepreneurship tasks even though there is a limit to its application in a life time (Kiosse & Otley, 2016). Human capital has more flexibility and greater transferability in terms of the contexts that they can be applied in comparison to other forms of capital such as natural capital.

3.3. FORMS OF CAPITAL

The trajectory of building a viable and dynamic new business-start-ups is influenced by the possession or non-possession of tangible and intangible assets (Drucker, 1985; Eckhardt & Shane, 2003). However, limited research has focused on trying to understand the non-financial and intangible capital in the context of entrepreneurship.

A large body of literature focuses on the concept of social capital (Kwon & Adler, 2014; Light & Dana, 2013; Payne, Moore, Griffis & Autry, 2011). These studies fall largely in the realm of sociology even though increasing interest is now developing in the contexts of management and entrepreneurship. The first serious discussions and analysis of social capital emerged during the 1980s with Bourdieu's (1986)

conceptualisation of different forms of capital. However, the definition of social capital is contested with different scholars proposing a diversity of characterisations (Aldrich, 2012; Dubos, 2017). A closer analysis of extant literature suggests that the concept is anchored on two concepts and these are social networks and social capabilities. Both factors work together to influence how nations/regions/firms/individuals perform in terms of advancing entrepreneurial success.

Gedajlovic, Honig, Moore, Payne and Wright (2013) associate social capital with an individual's networks of relationships with the people that he/she knows. This is in sync with Bourdieu's (1986) characterisation of social capital as the total of all actual and potential resources available through a lasting network of social relationships. It can be inferred from the preceding descriptions that social capital emerges from social relationships and networks as opposed to individual connections. The networks manifest in the form of repeated group activity, such as the incidence of meetings and other formal interactions, social and family relationships, informal get-togethers and other social events (Burt & Burzynska, 2017). These associations facilitate the identification, pooling, and distribution of scarce resources, which could otherwise have not been available to an individual entrepreneur (Light & Dana, 2013). Therefore, the significance of social capital lies in its ability to augment one's education, experience, and financial capital in pursuit of economic and social goals. Notwithstanding the aforesaid importance of social capital, the potential benefits that accrue from the network of social relations can only be realised if the links connecting network members are strong and if there is a propensity to share resources (Granovetter, 1973; Jack, 2005). However, the process of establishing and sustaining ties remains a challenge (Nahapiet & Ghoshal, 1998; Vershinina et al., 2011) due to the fluidity and complexity of relationships.

The link between social capital and entrepreneurship processes is increasingly getting recognition in extant entrepreneurship literature (Gedajlovic, Honig, Moore, Payne & Wright, 2013). Some studies suggest that robust social networks and relationships affect entrepreneurial performance through the opportunities to (i) access established and untapped markets, (ii) acquire inputs at affordable costs, and (iii) get stakeholders

buy-in (Stam, Arzlanian & Elfring, 2013), all which can be used to leverage entrepreneurial success. Such capital is invaluable particularly among small engineering and construction firms, which are vulnerable and benefit from any source of resources and assets because of their financial and network constraints. However, access to strong social networks and robust relationships with significant players (such as individuals or groups) creates opportunities for access to economic and cultural impact. This view is supported by numerous studies, which have explored the relationships between the variables social capital and firm performance (Stam, Arzlanian & Elfring, 2014; Westlund & Adam, 2010), social capital and new venture creation (Moyes, Ferri, Henderson & Whittam, 2015), and social capital and firm resilience (Brewton, Danes, Stafford & Haynes, 2010; Chrisman, Chua & Steier, 2011). The reality that dependent variables such as firm performance, new venture creation and firm resilience can collectively form part of entrepreneurial success suggests that the appropriation and utilisation of social capital is integral to advancing entrepreneurial success.

There is also scope for the conversion of capital from one form to another. Estrin, Mickiewicz and Stephan (2013) proclaim the possibility of converting social capital into economic capital. Arguably, the breadth of South African female entrepreneurs' social capital is a critical success factor for their entry and effective participation in engineering and construction industry given the male dominance of these sectors. Therefore, it can be contended that there is perceived information asymmetry (itself a critical element in the generation of social capital) between males and females given male's established industry knowledge and depth of relationships with markets, sources of finance and suppliers (English & Le Jeune, 2011; Haupt & Fester, 2012; Martin & Barnard, 2013). This often works to the disadvantage of female players and may undermine their effective operation of engineering and construction businesses. In some extreme cases, these disparities may lead to women's failure and exit from the industry. The next section presents the different forms of capital separately from using Bourdieu's (1986) Capital theory as presented above.

3.3.1. Emotional capital

Emotional capital has its roots firmly embedded in sociological research. Jackson's (1959) first coined the concept of emotional capital in a study on the role of religion in helping individuals to cope with grief. In his study, Jackson (1959:219) states "religion enables the individual to meet the fact of death at the physical level with a firm sense of reality, a healthful expression of feelings, and a capacity to reinvest *emotional capital* where it will produce the best fruits in life". In addition, Nowotny (1981:148) defines emotional capital as "knowledge, contacts, and relations as well as access to emotionally valued skills and assets". Thoits (2004) also describes the notion of emotional capital as a combination of emotion-based knowledge and skills, as well as the capacity to experience social emotion. Pierre Bourdieu presents emotional capital as a variant of embodied cultural capital that arises when "bodily capacities and cultural requirements meet" (Scheer, 2012: 202). Lastly, the concept is viewed by Gratton and Ghoshal (2003) as an individual's capacity to act and get things done through the support of vibrant social networks of relationships. The expression and individual manifestation of emotional capital, therefore, depends on one's level of self-awareness, self-esteem and personal uprightness.

Some researchers attempted to interconnect, albeit inconsistently, emotional capital with gender, with some scholars suggesting that it is a purely feminine tool. The claim is that emotions tend to reside in women only or that women have more emotional capital than men. For instance, Reay (2004) suggests that, in middle-class families, mothers are better resourced than fathers to equip their children with emotional resources. This view is supported by Gillies (2006) in the suggestion that fathers are too emotionally detached to render any emotional resources to their children. However, this perspective is criticised for blurring the relationship between gender, capital and practice. It is further criticised for over-feminising emotional capital to the point of shutting out "theoretical and empirical attention to how it may be shaped by masculinity and mobilized and embodied in men's everyday lives" (Cottingham, 2016:455). In the face of this criticism, Shepherd (2004) attempted to present emotional capital as a gender-neutral phenomenon.

According to Shepherd (2004), emotional capital is a part of an entrepreneur's skills arsenal that provides him/her with the capacity to cope with failure and enhances their resilience in complex environments. Hence, a high level of emotional capital arguably affords South African women in male-dominated fields with essential mechanisms to adapt to market, policy, legal, technical and technological changes and complexities in engineering and construction businesses given the high subtle environmental hostility towards females' participation in such fields.

3.3.2. Cultural capital

The concept of cultural capital was first proposed by Bourdieu (1986), in a study on the different academic performances of students coming from different social backgrounds. The outcome of this study reveals the significance of cultural investment in the academic success of children from various social classes. According to Valdez (2012), cultural capital relates to the social resources of a person as evidenced by their intellect, life-style and manner of speech, which promotes one's social flexibility in a class-ridden society. This takes three forms, which are embodied, objectified and institutionalised states (Erel, 2010). The three forms are explained in detail below.

3.3.2.1. Embodied capital

The embodied or incorporated state of capital relates to people's values, skills, knowledge and tastes. It comprises long-lasting personal dispositions, which influence actions and help individuals 'sense make' (Bourdieu, 2011) of entrepreneurial situations. Essentially, in this case, embodied capital, unlike other forms such as monetary capital, cannot be accumulated or assimilated in a short time. Hence, the one who seeks to acquire it will have to exert some effort, sacrifice time or incur substantial costs. This first-hand experience cannot be shirked or delegated. In Bourdieu's (1986:18) view, "This embodied capital, external wealth converted into an integral part of the person, into a habitus, cannot be transmitted instantaneously (unlike money, property rights, or even titles of nobility) by gift or bequest, purchase or exchange". Remarkably, there is a limit to the amount of embodied cultural capital that one can build-up and this is all subject to one's biological make-up (Pret, Shaw &

Dodd, 2016). For instance, one cannot assimilate what is beyond his/her mental faculties and memory. In addition, embodied capital dies with its host.

3.3.2.2. Objectified capital

Objectified cultural capital relates to the ownership of cultural merchandise (Pinxten & Lievens, 2014). It appears as materials, items and things of culture, for example, writings, art and craft. Unlike embodied cultural capital, this objectified form of capital is transferrable in its physical form (Bourdieu, 2011). For instance, a volume of poetry writings can be bequeathed to other people as it is or symbolically. While it is possible to instantaneously transmit objectified capital, its use or consumption by the recipient is conditional (Pret et al., 2016). For instance, an individual may just need economic capital to acquire a collection of an author's books, and yet the books should be used or consumed in a way that does not violate the conditions of the sale and rights of the owner of the intellectual property.

3.3.2.3. Institutionalised capital

Cultural capital in the institutionalised state relates to academic qualifications (Johnson, 2006). This is particularly applicable to societies with formal systems of education (Bridge, 2006). This means that when an educational institution attests individuals' proficiencies and expertise by handing out a certificate, their embodied capital assumes a neutral value and institutionalised capital takes effect. This unique aspect of capital is best illustrated by fact that holders of a similar educational certificate are perceived to have an equal value on the labour market (Lareau & Weininger, 2003). Against this background, individuals in a labour market are substitutable giving institutionalised cultural capital a functional role similar to the one accomplished by money in the situation of economic capital.

A key component of cultural capital is cultural habitus, which is a system of dispositions that combines an individual's past experiences and enhances his/her resilience in the face of environmental hostility and difficulty (Gaddis, 2013) such as that required in running engineering and technology businesses. These dispositions can be acquired through family experiences, education and institutional socialisation (Lamont &

Lareau, 1988, Madzima, 2010) with implications for business management. Thus, cultural capital is closely related to the institutionalised capital notion, which relates primarily to the competencies, training and occupational experience of entrepreneurs (Elam, 2008).

Several studies in the entrepreneurship research field have explored the concept of cultural capital (De Clercq & Voronov, 2009; Jayawarna et al., 2014; Kim et al., 2006). Some notable interest has been addressed towards its convertibility and how it can be leveraged for the benefit of the entrepreneurs, particularly upcoming ones who are comparatively vulnerable and less resourced. According to Anderson and Miller (2003), entrepreneurs with high socio-economic backgrounds (embodied cultural capital) have more opportunities for developing extensive social relations with other significant entrepreneurial actors. Furthermore, certain cultural capital competencies and talents enable one to craft economically valued cultural products (Townley et al., 2009; Bhagavatula et al., 2010) while sectoral exposure can aid networking and name-building (Beverland, 2005; Bitektine, 2011). Equally important, a paucity of cultural capital can potentially restrict one's habitus, which in turn hinders access to useful social connections and the possibility of transition from a lower social class to a higher one (De Clercq & Voronov, 2009; Lounsbury & Glynn, 2001).

As noted in the preceding paragraph, an individual's level of cultural capital is dependent on their position on the social strata (Parcel & Hendrix, 2014). Hence, the higher one is on the social strata, the more they are endowed with cultural capital. As such, female individuals with higher social positioning in society would be expected to have higher cultural capital, which would increase their sense of agility and resilience in male dominated businesses such as engineering and construction than their counterparts from low social stratum. For Valdez (2012), the possession of cultural capital is positively correlated to entrepreneurial success. This is due to the relatively easy access to financial and human resources that cultural capital affords to entrepreneurs that possess it. In the context of the current study, it is logical to assume that current and potential female engineering and construction entrepreneurs who possess higher cultural capital will fare better in male-dominated career fields that

include engineering and construction compared to their counterparts with lower cultural capital due to the complex, masculine and often gender-discriminatory nature of the sector.

It is critical to understand that, compared to social capital, other forms of capital (e.g. emotional capital, cultural capital, embodied capital and objectified capital) have remained under-theorised, lack coherent classification and remain abstract due to lack of strong empirical support (Fine, 2010; Kiosse & David Otley, 2016; Piazza-Georgi, 2002). For these reasons, these capital forms are excluded from greater theorisation due the absence of theories and classifications. As such, the next section discusses the theorisation of social capital.

3.4. THEORIES OF SOCIAL CAPITAL

In the current study, Bourdieu's (1977, 1984, 1986) theory of practice is adopted as a fitting theoretical lens for understanding capital and the related behaviours of entrepreneurs. In addition to Bourdieu's propositions, social capital is explained based on two other main theories, which are the Social exchange and Social network theories. Both theories are discussed in detail in the following sections.

3.4.1. Social exchange theory

The Social exchange theory is based on perspectives from a group of scholars that seek to provide an alternative explanation for human behaviour in social settings (Emerson, 1976). The most prominent contributors to this theory are George Homans, John Thibaut, Harold Kelley, and Peter Blau. The theory, drawn from psychology, suggests that social relationships, as outcomes of human behaviour, are driven by exchange relationships between members of a society (Cook, Cheshire, Rice & Nakagawa, 2013). Members of a society engage in a cost-benefit analysis process to ascertain if there is perceived fairness in interactions before they engage in any particular relationship with other members of society. Hence, a decision is arrived at after a comparison of the competing negative and positive outcomes.

Inequity occurs where perceived costs exceed benefits and vice-versa. The cost-benefit analysis outcome determines whether one should stick with or leave any form of association with other members of a society. In short, the Social exchange theory suggests that the value of a social relationship depends on the associated costs and benefits with low worth attached to those relational transactions where one feels there is some inequity in the form of perceived costs exceeding benefits (Stafford, 2008). The Theory of Social Exchange is also applicable to the context of entrepreneurship and business transactions particularly in the development of relationships that facilitate the flow of resources between entrepreneurs and investors and influence the growth of new ventures (Carsrud & Johnson, 1989; Zafirovski, 2005; Zhang & Jia, 2010; Zimmer, 1986). Despite its prominence, the theory is not whole and uniform because it is a conglomerate of various perspectives, such as cost benefit analysis, social exchange and equilibrium in relationships and rational decision making, emanating from psychology, sociology and economics.

The main criticism levelled against the Social exchange theory is that it elevates social issues in decision making, and often generates the opposite effect of imposing individualism (Claridge, 2018). The importation of methodological individualism and reductionism restricts social capital to the individual behaviours of economically rational beings (Antcliff, Saundry & Stuart 2007). This has been blamed for inviting economic thinking to dominate the territory of sociologists with economic notions (Fine & Green, 2000; Haynes, 2009) the culmination of which is to make social capital anti-social (Claridge, 2018). The notion that entrepreneurs are rational being that use their social networks and interactions to maximise the exploitation of personal opportunities at individual level and economic value for their businesses is one such half-truth.

3.4.2. Social network theory

The Social network theory seeks to explore the human interaction within the context of societal networks. It gives an inner view of the character of the participants and relations in a social set-up. The theory views social relationships as nodes and ties (Liu et al., 2017) with the nodes referring to actors or members of a social network while ties relate to the connections between the nodes/actors as represented by lines.

It is important to acknowledge that while all members or actors constituting a social network are connected, the degree of closeness varies (Liu, Sidhu, Beacom & Valente, 2017).

According to Granovetter (1977, 1983), social ties can be either weak or strong, and this determines the extent of the social capital available to the actors involved in the network. Strong ties are marked by actors who are closely-knit and very connected, while the opposite is true for weak networks. The stronger connections are often regarded as bonding ties while weaker connections are considered as bridging ties. In addition, some ties are durable while some are temporary. The general suggestion is that strong ties avail a higher social capital to the network actors while weak ties tend to generate limited amounts of social capital. However, the strength of a social network is not always a reflection of its value as some networks can be temporary and yet very invaluable in terms of resources exchanged.

Like any other theory or model, the Social network theory has its strengths and weaknesses. Scott and Carrington (2011) and Borgatti, Brass and Halgin (2014) make the salient observation that the Social network theory underplays the role of individual attributes as an important source of social capital. Instead, it over-emphasises the nature and strength of relationships and ties between members. Furthermore, while this theory offers an alternative explanation for the driving force behind entrepreneurship success, its salient shortcoming is its understatement of the contribution of individual effort in the overall realisation of entrepreneurial success. Lastly, the theory is also criticised for its subjectivity, which makes replication difficult (Kilduff & Brass, 2010).

The argument, with regard to entrepreneurship, is that entrepreneurs at different stages of entrepreneurial development attach different degrees of importance to different social relationships (Davidsson & Honig, 2003). For instance, an entrepreneur attaches more significance to strong ties particularly with family and friends at the formative stages/ start-up level. However, at later stages, the entrepreneur is less

reliant on close relations and depends more on the help from acquaintances and other industry players (Jaafar, Abdul-Aziz & Sahari, 2009). Perhaps, the lack of connections with industry players could be one of the main reasons why female-owned/managed engineering and construction businesses often struggle to reach their maturity and advance their entrepreneurial success.

3.5. HUMAN CAPITAL THEORY

The Human capital theory is a further framework for understanding capital, its link with entrepreneurial competence and success. Historically, Joseph Schumpeter's work on entrepreneurship, which was expanded by Theodore Schultz, laid the foundation for a greater understanding of how human resources contribute to economic growth of nations. Schumpeter's (1942, 1991) human capital school considers economic equilibria to be at the heart of economic growth because growth is both a consequence, as much as it contributes to disequilibria, and a continual process of "creative destruction." For Schumpeter an economy striving to attain a constant state of equilibria and disequilibria is mainly attributed to technological progress and involves the search for more enhanced forms of capital (Piazza-Georgi, 2002). Therefore, entrepreneurs, such as those in engineering and construction, are conceived as equilibrating agents because they absorb risks in the market and search for alternatives that can adjust the state of disequilibria.

Schultz (1993) expands the Schumpeterian human capital notions of growth in the argument that growth in the United States of America's (USA) agriculture in the 20th century was inconsistent with the law of diminishing returns (as applied to fixed resources e.g. land). The increasing returns to scale in USA's agriculture were attributed to technological advancements, in particular the critical role of human capital in production because the labour theory of value carries an insufficient explanation (Piazza-Georgi, 2002). Human resources knowledge and capabilities can serve as factors of production that increase economic value of activities. As a result, Godwin (2003) and Kiosse and Otley (2016) contend that they represent important capital asset, which could be over time, despite the fact that organisations require a range of employee skills and talents to function optimally.

Literature emphasises the capacity of human capital (e.g. education, experience and exposure), improved organisational performance (Amin, 2018; Zainol et al., 2018), and the world of work (Van Jaarsveldt, 2018) in the development of entrepreneurial competences (Kerrin & Kele, 2017; Matanda, 2008;). For instance, Mamabolo et al., (2017) drew on the Human capital theory in their investigation of the effects of investing in different human capital (formal education, work experience and prior entrepreneurial experience) on the success of different entrepreneurship phases. Mamabolo et al., (2017) study revealed that firms deploy sources of skills differently across the entrepreneurship phases with the application of formal education being critical at the start-up phase. The application of formal education dissipates sharply as the business gravitates towards the established stage and entrepreneurship-specific investments become necessary. In addition, Matanda (2008) uses the Human capital theory as a theoretical lens in her examination of the influence of human capital variables and entrepreneurial orientation on the radical implementation of product innovations among small scale carpentry workshops in Nairobi, Kenya. Matanda's study concluded that the availability of family role models and the adoption of a strong entrepreneurial orientation served as effective strategies for the organisation's pursuit of radical product innovation. It is therefore clear that, possession of and investment in human capital has a significant effect on entrepreneurial competence and improves entrepreneurial outcomes.

Amin's (2018) research into the relationship between entrepreneurial human capital (especially education, experience and skills) and organisational performance in Pakistan reveals some positive associations. This demonstrates that improvements in entrepreneurial human capital can significantly leverage the performance of firms and the utility of the shareholders. In the same vein, Zainol et al., (2018) explored the effects of human capital and entrepreneurial competences on the business performance of informal SMMEs owned and managed by women in Kelantan, Malaysia. Their (Zainol et al.) findings suggest that investments in human capital and entrepreneurial competencies contribute to improvements in the performance of informal micro-enterprises. Therefore, these studies point to the central place of

investing in and the skilful deployment of human resources and entrepreneurial capabilities towards the advancement of the productivity of firms.

However, other studies have reported a significant but minor relationship between certain human capital investments and entrepreneurial success with stronger relationships for some human capital investments (knowledge/skills) than for other human capital investments (education/experience) (Unger, Rauch, Frese & Rosenbusch, 2011). The lack of precision in this human capital-relationship is further alluded to in the complexity of human capital with high task-relatedness being more related to firm success compared to low task relatedness (Unger et al., 2011). Overall, it can be inferred that the relationship between human capital and entrepreneurial competences vary widely depending on whether it is task focused or not and whether it targets human capital outcomes or just human capital exclusively. In addition, Van Jaarsveldt (2018) reported that knowledge and communication skills, collaborative skills and workers' ability to engage with diverse groups in multinational teams are critical competencies in the contemporary public administration spaces.

3.6. ELEMENTS OF SOCIAL CAPITAL

A key limitation of the Social capital theory is in its poor definition and conceptualisation. This challenge arises from the fact that social capital is multi-faceted, with individual pieces partially explaining the meaning of social capital. Each of these parts cannot comprehensively capture the notion in its totality. A survey of extant literature on social capital reveals that the concept is too complex to be defined by a single component. Hence, there exists various scholarly attempts at identifying the elements of social capital. For instance, Liu and Besser (2003) suggest that social capital can be split into the following components: norms, reciprocity, trust and networks. These components are considered in detail in the following section:

- **Norms**

There is agreement among scholars that the shared normative beliefs among members of a specific society constitute a key element of social capital. Norms refer

to the principles of behaviour for community members which are determined by the communities themselves (Boudon, 2001). Adherence to the norms is encouraged and approved while their violation necessitates the imposition of penalties. It is important to stress that Coleman (1987) and Putman (2000) agree that norms are a manifestation of social capital. In the engineering and construction industry, refraining from unfair competition serves as a norm which guides and regulates the behaviours and actors in this industry. This means behaviours such as collusive bidding and tender rates manipulation are conceived a violation of the norms and this attracts penalties from the regulators of the industry such as the Engineering Council of South Africa (ECSA) and the Construction Industry Development Board (CIDB).

- **Reciprocity**

Reciprocity refers to “knowledge exchanges that are mutual and perceived by the parties as fair” (Chiu, Hsu & Wang, 2006:1877). This component of social capital stresses the interdependence of members of social actors. Thus, each community is obliged to every other member. According to the Social exchange theory (Thibaut & Kelly, 1959), members of communities anticipate mutuality that vindicates the time and effort they spend on sharing their knowledge. In the same vein, Blau (1964:15) suggests that reciprocity depends on rewarding reactions from others and that cease when these expected reactions are not forthcoming. In reality, the emerging contractors and engineering firms are reluctant to share information because of the stiff competition for financial resources and customers in the industry, which undermines the principle of reciprocity.

- **Trust**

Trust refers to a set of specific beliefs dealing primarily with the integrity, benevolence, and the ability of another party (Mayer, Davis & Schoorman, 1995). It is generally presumed that members of a social group conduct their affairs with integrity and not in a self-seeking manner. According to Nahapiet and Ghoshal (1998), trust creates conditions for cooperative liaisons. In addition, Nonaka (1994) points out that mutual trust among organisations or member’s augments value creation and cross-pollination of knowledge.

- **Networks**

Networks are a system of social linkages with other members of the community (e.g. family, neighbours and members of the same organisation) on whom one can rely (Inkpen & Tsang, 2005). It also refers to the degree of contact and accessibility one has with other people (Nhapiet & Ghoshal, 1998). In the organisational context, networks connect businesses to knowledge, resources, markets and technologies. Female owned and managed engineering and construction businesses often have a limited resource, knowledge and market base due to their limited range of networks at both business and industrial levels unlike their male counterparts. However, there is still some research interest on how the social context in which firms are embedded influences their behaviour and performance (Uzzi & Gillespie, 2002).

Other authors have also proposed various categorisations of social capital. For example, Narayan and Cassidy (2001) isolate a variety of dimensions, which include trust, volunteerism, neighbourhood connectedness, everyday sociability, togetherness, generalised norms, and group characteristics. Volunteerism does not seem to exist among engineering and construction businesses judging from their individual quest for financial success and independence. However, togetherness seems to manifest on their involvement in local associations such as Business Unity South Africa (BUSA) and National African Federated Chamber of Commerce (NAFCOC) which increase their connectivity, recognition of each other and their relatedness.

3.7. PERSPECTIVES ON SOCIAL CAPITAL

As has already been highlighted earlier on, the concept of social capital is complex. Hence, scholars tend to approach it from different perspectives. Two main perspectives emerge from existing research on this concept and these are the network and social structure perspectives and are presented briefly below.

3.7.1. Network perspective

Social capital can be ordered, from a network perspective, as either bonding, bridging and linking. These subcategories are described below as follows:

- **Bonding social capital**

This category relates to links between social actors who have a relatively high degree of social relations connectedness (Poortinga, 2006). Bonding social capital is commonly portrayed as lateral interconnections between people in the same social group (Adler & Kwon, 2002). Typically, bonding social capital exists in local community contexts where members of a community group are acquainted to many other members of the same group (network closure). In the engineering and construction industry, the grading of firms according to their specialisation may entrench differentiation, which complicates firm owners/managers in different statuses' knowledge of each other even though those that share the same status may be attracted and know each other well. According to Putnam (2000), the defining features of bonding social capital include strong norms, robust moral principles and trust. These attributes can have both positive and negative implications for the attainment of individuals' or commonly shared goals. In as much as it may provide social actors with access to similar social network resources leading to group solidarity, such network assets may not be useful in all environmental contexts.

- **Bridging social capital**

This category of social capital describes links between individuals, which cut across social groups (Putnam, 2000). A bridging social capital affords social actors the opportunity to leverage social network resources from different social groups, which may be at different levels from the one they belong. Finally, bridging social capital, unlike bonding social capital, is characterised by vertical linkages, which operate through formal hierarchical structures (Coffé & Geys, 2007).

The context of engineering and construction firms is such that, female owner/managers with access to various networks operating at different levels (e.g. national and regional levels) are better positioned to achieve entrepreneurial success than those entirely dependent on their bonding capital. This is because such owner/managers may be able to tap into the different spheres of networks to access financial, intellectual and market resources better than their counterparts. In addition, bridging social capital is not dependant on shared norms, principles and values. However, it emphasises reciprocity and trust among participants in social relationships (Beugelsdijk & Smulders, 2003). Finally, this form of capital affords social actors network assets which is known to go beyond those of an individual group.

- **Linking social capital**

This variant is closely related to bridging social capital. It relates to norms of respect and networks of trusting relationships between people who are interacting across explicit, formal or institutionalised power or authority gradients in society (Hawkins & Maurer, 2009). In as much as it may seem convenient to separate bridging from linking social capital, there is a fundamental conceptual confusion that makes the measurement of this social capital challenging.

3.7.2. Social structure perspective

The social structure perspective, according to Nahapiet and Ghoshal (1998), categorises social capital into the structural, relational and cognitive categories. These categories draw their names from their sources and are essentially dependent on each other, and are discussed below.

- **Structural dimension of social capital**

The structural dimension of social capital describes the attributes of the social system, which constitute a social grouping or society (Tsai & Ghoshal, 1998). It lays out the duties, guidelines, standards and processes (Nahapiet & Ghoshal, 1997) of such a social system. It also enables the sharing of deeds by making the social actors' behaviour more foreseeable and constructive (Bolino, Turnley & Bloodgood, 2002). Hence, these elements unravel opportunities for the attainment of social goals. The

laid down rules, duties, guidelines, standards and processes, in conjunction with inducements for toeing the line and reprimands for rebelliousness, afford a potent motivation for industrious behaviours (Tsai & Ghoshal, 1998).

- **Cognitive social capital**

The cognitive aspect of social capital relates to the social context, which determines the rules of behaviour in certain environments (Harpham, Grant & Thomas, 2002). Therefore, it stipulates the accepted and unaccepted ways of behaviour in a social system (Hsu et al., 2007). It also influences people to act in unison and in a collective manner. Clearly, the cognitive form of social capital is an outcome of mental thought processes and ideas, which are driven by culture and give rise to values, attitudes and beliefs. The norms, values, attitudes, and beliefs that comprise cognitive social capital seek to enhance cooperative behaviour and make it the preferred way of behaviour (Nahapiet & Ghoshal, 1997). The cognitive social capital's stability reveals itself via specific language and codes. For instance, certain words, which are used within in a particular social group may have no meaning outside that group. Therefore, while cognitive social capital is tied to the socially acceptable behavioural conduct for a specific group, structural social capital provides a coherent structure and processes to follow for members of a specific group.

- **Relational social capital**

The relational aspect of social capital concerns itself with the nature of the close relationships developed by social group members with each other through interactions (Adler & Kwon, 2002). Essentially, it relates to the resources which are generated or reinforced through the prevailing close ties (Nahapiet & Ghoshal, 1997). It is the flow of resources through interaction in social relationships. Finally, the key dimensions of relational social capital are trust, shared norms, group obligations and identification, which are all embedded in social relationships (Lin, 2017).

3.8. ENTREPRENEURIAL COMPETENCE

There is no single appropriate definition of entrepreneurial competencies. This is partly explained by the reality that the term “competency”, which gives effect to the term entrepreneurial competence, is usually conflated with other related terms such as “skills”, “expertise”, and “acumen”. This lack of clarity is worsened by diverse individuals’ use of the term for different purposes. People in different contexts understand competence differently. On one hand, the term can be taken to mean some conduct that a person exhibits on the job. On the other hand, it can be taken to mean a performance standard (Strebler et al., 1997).

Overall competencies have been conceived as a cluster of related knowledge, skills, and attitudes, which affect a significant component of an employee’s job (i.e. his role or responsibility) that correlates with performance on the job and can be calibrated against well-accepted standards (Lucia & Lepsinger, 1999). Therefore, competencies can be honed through further training and development of the employees as they tend to be job specific and task oriented – even though a clear distinction should be made between generic and specialised competences. For Smith et al., (2007:303) competency refers to knowledge, skills and value orientation, which are applied to a specific relevant context. Kock (2018) submits that competencies comprise four main components namely knowledge, skills, attributes and abilities. Knowledge would involve the factual truths and principles acquired through education, formal training and work-related experiences while skills relate to those physical and mental proficiencies gained through specialised training. Attributes relate to those qualities that individuals possess, which are (or may not necessarily be) associated with a given profession. Abilities describe aptitudes relevant to the effective execution of tasks and activities, which relate to a specific profession (Kock, 2018). The bottom line is that the demonstration of a competence will lead to an effective execution of a task or job (Rambe, 2018). A deeper comprehension of the competence concept is a reasonable first step in the quest to understand entrepreneurial competencies.

Entrepreneurial competencies are unique and specific to the field of entrepreneurship. They are qualities possessed by individuals (entrepreneurs who initiate or add value

to organisations) that manifest through organisational performance (Bird, 1995). Since entrepreneurs are expected to start and manage small businesses, individuals who are entrepreneurially competent should be able to effectively launch and run a small business. However, it is important to note that entrepreneurship is not confined to the form explained above. In recent years, corporate entrepreneurship or intrapreneurship, which does not require one to start a business, has emerged. Thus, individuals can become entrepreneurial whilst under the employ of others. Yet, the stated entrepreneurial contexts may require similar performance standards or competencies for tasks to be effectively carried out. An individual with entrepreneurial competencies should be able to perform in a way that leads to entrepreneurial success as defined by birth, survival and growth of a venture (Bird, 1995; Baum, 1994).

However, there is convergence of scholarly opinion on some of the elements, which constitute entrepreneurial competencies. These elements include idea generation, innovation skills, envisioning opportunities, product innovation, willingness to take risks, environment scanning for opportunities and risk-taking (Mitchelmore & Rowley, 2013; Kyndt & Baet, 2015; Sanchez, 2013). In addition, Men and Lau (2000) summarise entrepreneurial competencies as opportunity, organising, relationship, strategic, commitment and conceptual competencies. For the current study, entrepreneurial competencies are taken to mean skills, knowledge, behaviours and attitudes required to perform entrepreneurial roles effectively (Brophy & Kiely, 2002). The current study proposes that the entrepreneurial competencies and the entrepreneurial success of South African women entrepreneurs in engineering and construction businesses could be outcomes of the interaction of selected demographic, psychological and capital variables moderated by environmental dynamism.

3.9. IMPACT OF CAPITAL FORMS (SOCIAL, EMOTIONAL AND CULTURAL) ON ENTREPRENEURIAL COMPETENCE

Scholars worldwide have sought to ascertain the nature of relationships between types of capital and elements of entrepreneurship competencies due to the increasing acknowledgement of possible relationships between various forms of capital and

entrepreneurship in general (Aldrich & Martinez, 2006; Baron, Gedajlovic et al., 2013; Lin, Li & Chen, 2006; Markman & Hirska, 2001). Such studies extend across entrepreneurship fields and geographical contexts, and focus on the different entrepreneurial elements that include idea generation, innovation skills, envisioning opportunities, product innovation, willingness to take risks, environment scanning for opportunities and risk-taking.

Çakmak, Lie and McCabe (2018) studied the contribution of different types of capitals controlled by informal tourism entrepreneurs in Thailand to the field relations that influence their impact to the tourism system. The study drew on Bourdieu's theory of fields and capitals and used ethnographic descriptive accounts of participants in tourism to evaluate these roles. The outcome of this study reveals that participants in the study had restricted access to capital. They singled out dynamism, positive social capital, flexibility, and symbolic capital as key factors that influenced the competence of informal entrepreneurs in the tourism sector.

Sahasranamama and Nandakumar (2018) explored the relationship between individual capital (financial, human and social capital), social entrepreneurship opportunity recognition and exploitation. Based on capital and institutional theories, as well as the Global Entrepreneurship Monitor data, the researchers found that financial, human and social capital were imperative for entry into social entrepreneurship. Furthermore, this connection was dependent on the formal institutional arrangements to the extent that (i) philanthropy-oriented financial systems have a positive moderating effect on investment of financial capital; (ii) educational systems have a positive moderating effect on investment of human capital; and (iii) political systems have a positive moderating effect on investment of both human and financial capital.

In recognition of the limited attention, which research on the impact of non-material capital on the entrepreneurial process has received, Lee and Shaw (2016) studied the influence of cultural, social and symbolic capital forms in occupationally distinct entrepreneurship. The research study partook on two enterprise-training programmes

funded by the 1997–2010 United Kingdom’s Labour Government and examined the non-material capitals of diverse emerging entrepreneurs by occupational classification. The study findings reveal that professional and higher technician entrepreneurs possessed higher non-material capitals compared to non-professional entrepreneurs. Hence, this study’s findings (Lee and Shaw) implied the need for business policy makers to generate appropriate support measures to promote the cherished, productive non-material capitals and competencies of professional and higher technician entrepreneurs. In addition, Jardon’s (2017) study examined the moderating effect of intellectual capital on innovativeness with the Latin American subsistence small businesses operating in the timber industry. The study reveals that human capital produces social capital with the social capital dependent on structural capital to develop the innovativeness of subsistence small businesses.

In the Asian context, Wang (2016) explored the link between dynamic capabilities and Chinese social capital in family businesses. The outcome of the study demonstrates that structural, cognitive, and relational capital impacted on the dynamic capabilities of family businesses. Despite the limitations (i) based on a non-representative sample of businesses and (ii) on using respondents from different regional contexts in China, the study managed to juxtapose detached research fields, i.e. social capital and dynamic capabilities, thus providing a partial explanation on why some family businesses endured and thrived dynamic environments while others floundered.

Glover, Champion, Daniels and Boocock (2016) used the Capital theory to explore problem solving and innovation in small firms. Their study sought to examine how small firms used the available social and cultural capital to innovate and solve problems. The results of the study suggest that firms, which have higher levels of social and cultural capital have more potential for success and engagement in innovative activities than those with lower levels. In essence, both forms of capital supplemented and fortified each other in small firms. This study offered an insight into how small firms used different forms of capital in their operations.

Lastly Dutta (2013) attempted to establish a conceptual link between social capital and innovative capability firms under environmental turbulence. This study was grounded on the Resource-Based View of the firm and institutional theory. The results of the study demonstrate that social capital augments the innovative capability of firms but to a limited extent. Notably, it emerged from the study that social capital has both a positive and negative influence and a non-linear relationship with innovative capability. However, it also emerged that this association is subject to the degree of environmental turbulence faced by the firm.

3.10. STUDIES ON THE IMPACT OF CAPITAL FORMS ON ENTREPRENEURIAL COMPETENCES OF FEMALES

Female entrepreneurs are often labelled as performing sub-optimally because many of them continue to operate small and periphery located firms. This might be an unfair and inaccurate depiction of the competencies and capabilities of female entrepreneurs given that, a substantial number of male-owned businesses in the SMEs sector demonstrate similar performance patterns (Marlow & McAdam, 2013). Therefore, statements that female entrepreneurs under-perform reveal a gendered prejudice within entrepreneurship discussions where femininity and inadequacy are considered to be synonymous. This view supports the findings from El-Hamid's (2011) study on the performance of Egyptian female entrepreneurs, which showed that there were no differences between male and female respondents concerning the efficient running of their businesses. In fact, their businesses showed better revenue generating capability (i.e. economic capital) in comparison to male-owned businesses. However, the same study suggests that some of the competence deficiencies exhibited by female entrepreneurs were attributable to human and financial capital disparities where females were at a perpetual disadvantage. A similar study conducted in Turkey by Hisrich and Öztürk (1999) cements this view and shows that inadequate social capital hampers the performance of female-owned businesses in the country.

The relationship between different forms of capital and the entrepreneurial competences of females is attracting research attention across the world. The suggestion from some quarters is that the possession of various forms of non-material

capital augments the competencies of women entrepreneurs, and vice-versa. However, research on the subject has been mostly restricted to narrow geographical locations at the expense of others. McGowan, Cooper, Durkin and O’Kane (2015) studied the effect of social and human capital in developing young women as entrepreneurial business leaders. The findings of their study reveal that women seeking to assume entrepreneurship responsibilities tend to be under-resourced of human and social capital. Such inadequacies hinder the efficacy of their leadership capacity and the growth of their business enterprises. In line with the same theme, Prasad, Naidu, Murthy, Winkel and Ehrhardt (2013) explored the contribution of human and social capital resources towards venture growth of female owned businesses in an emerging economy context (India). The results of their study show that human capital aspects (industry experience and prior entrepreneurial experience) and social capital variables such as the size of individuals’ business networks and the support received from family members, play a positive significant role in the entrepreneurs’ ability to grow their businesses. However, the same study shows that education, parental business ownership, and network composition characteristics in relation to kinship connections were not significant predictors of venture growth in an Indian context.

3.11. ENVIRONMENTAL DYNAMISM

Dynamism denotes the level to which the business operational environments are influenced by random and swift change and, consequently leading to high intensities of ambiguity (Garg, Walters & Priem, 2003; Jansen, Vera & Crossan, 2009; Simerly & Li, 2000). Extremely dynamic environments are volatile and linked with rapid and intense transformation, which every so often encompass uncertainty and risk (Wu, 2010). Hence, decision makers in business organisations must make major decisions against a background of imperfect evidence. Accordingly, the levels of stimulation among decision-makers are probably higher in dynamic than static environments. Huber (2004:3) posits that that in the near future, “environmental dynamism will be greater, and it will be increasing.”

In a dynamic business environment, a business entity's capacity to churn useful innovations is integral to its competitive advantage (Barney, 1991; Dierickx & Cool, 1989). Clearly, the possession of this elusive resource affords small- and medium-sized enterprises (SMEs) the opportunity to compete robustly with other businesses. Hence, entrepreneurial dynamism can influence the input (personal and capital)-output (entrepreneurial/business success) relationship. However, dynamic environments create opportunities and unleash environmental complexities and hostilities, which may force managers and owners of business entities, SMEs included, to make erratic decisions in the course of trying to cope with changing environment.

The above-noted ideas suggest that environmental hostility, such as policy inconsistency and an unfavourable tax regime, just like other historical and institutional factors, may undermine South Africa women entrepreneurs' capacity to effectively compete in traditionally male-dominated industries (e.g. manufacturing and construction). Thus, the female entrepreneurs may be relegated to sectors with lower entry barriers (e.g. the services and retail sector) that are less exposed to the vagaries of environmental dynamism. To clarify the concept of environmental dynamism, two of its key components, which are environmental hostility and environmental complexity, are explained below.

3.11.1. Environmental hostility

Findings from previous studies undertaken in the South Africa construction and engineering sectors reveal that gender-based discrimination is a key hindrance to women's participation and retention in these sectors (English & Le Jeune, 2012; Haupt & Fester, 2012; Ndhlovu & Spring, 2009;). A study conducted by Martin and Barnard (2013) on the experience of women in male-dominated occupations in South Africa reveals that official and subtle structural practices, which endorsed gender discrimination and prejudice, were the key hindrances that women face in these occupations. These practices encompassed the insufficient provision of distinctive physical, personality and work-life balance support systems to female managers and employees. Such discriminatory practices force women to leave these fields for more female-friendly fields.

Chiloane-Tsoka (2013) underscores the crippling role of women as home-makers, which diminishes their determination to start up business entities in male-dominated fields, and the lack of access to networks of information to lobby and capital due to gender-bias of financiers. As some previous studies have proven, these factors also apply to female entrepreneurship in general (Deborah, Wilhelmina, Oyelana & Ibrahim, 2015; Naguib & Jamali, 2015; Zhu, Kara, Chu & Chu, 2015).

Overall, these challenges are not unique to the South Africa context. Some studies from across the globe confirm the under-representation of women in Science, Technology, Engineering and Mathematics (STEM) area. For instance, Castillo, Grazzi and Tacsir's (2014) study on gender gaps in STEM careers in Latin America emphasises gender-biased promotion practices, stereotypes and conflicts between work and family roles as hindrances to female participation in traditionally male dominated fields, such as engineering and construction fields.

3.11.2. Environmental complexity

Environmental complexity is another key factor, which adds to environmental dynamism. This concept is closely related to the number of dimensions that constitute a firm's operating environment (Cannon & St. John, 2007). For instance, a simple business environment comprises fewer products or services on offer, a limited number of players, and no need for sophisticated knowledge about the operational environment (Haynes, 2015). However, a complex business environment is characterised by a wide range of products on offer, many players, and the need for intricate industry knowledge. Furthermore, the strength and interdependence of industry actors adds to environmental complexity in a particular industry. The South African construction and engineering industries are characterised by many players of varying sizes and strengths, each offering a unique service, thus making the environment in this industry complex (Bowen, Pearl & Akintoye, 2007; Ugwu & Haupt, 2007). Such a complexity makes it difficult for new players to enter these industries.

Finally, academics who seek to evaluate environmental complexity often encounter challenges because of the lack of a hypothetically convincing and scientifically rigorous system for operationalizing this key concept (Li & Liu, 2014; Ward, Duray, Leong & Sum, 1995). However, a survey of previous studies, which explored environmental complexity reveals that the concept is multidimensional and therefore research should use a multidimensional measure to assess it (Cannon & St. John, 2007; Vasconcelos & Ramirez, 2011).

3.11.3. Previous studies on the moderating/mediating influence of environmental dynamism on business success/performance

Several studies have explored the moderating influence of environmental dynamism on business performance (entrepreneurial competences included) in diverse contexts. For instance, Prajoge and Oke (2014) studied the influence of human capital on service innovation advantage (SIA) and business performance (BP) in service sector firms based in Australia and evaluated how external environmental dynamism affected these relationships. The outcome of this study shows that HC was positively related to SIA. In addition, the results demonstrated that the effect of SIA on BP was swayed by environmental dynamism and competitiveness with dynamic environments enhancing the effect while competitive environments weakening it. The findings of this study illustrated the interdependency between the Resource-Based View and Contingency Theory as they clearly show that the value of innovation as a firm's competency is boosted or debilitated, depending on whether the business environment is more dynamic or competitive. Nonetheless, the findings of this study are different from Kektar and Sett's (2014) study, which suggest that environmental dynamism has a causal linkage with business performance. The relationship was fully mediated by human capital flexibility.

In another study, Turulja and Bajgoric (2018) used the Dynamic Capability View and Contingency Theory to illuminate the character of the influence of environmental turbulence on the relationships between firm's product and process innovations and business performance in the context of firms in a transitional economy in South-Eastern Europe. The results of the study reveal that environmental turbulence does

not moderate the relationship between innovation and business performance. However, the authors found a clear role of environmental turbulence in augmenting innovation instead of moderating the relationship between innovation and performance. The results of this study suggest a negative influence of environmental turbulence on business success. Nevertheless, the inclusion of innovation in the postulation may boost a firm's ability to innovate and achieve entrepreneurial success.

In a different context, Soto-Acosta, Popa and Martinez-Conesa (2017) studied the effect of technological, organizational and environmental factors on innovation ambidexterity as well as its effect on the business success of manufacturing SMEs. The study also examined the moderating effect of environmental dynamism on these associations. The study, which was grounded on the Technology–Organization–Environment theory and the Knowledge-Based View, used a sample of 429 Spanish SMEs with the outcome demonstrating that information technology capability, knowledge management capability and environmental dynamism were positively correlated with innovation ambidexterity. In addition, environmental dynamism was observed to reinforce the positive influence of innovation ambidexterity on firm performance. This demonstrates that environmental dynamism provides a positive reinforcement on different capabilities that affect innovation ambidexterity and firm performance.

Furthermore, Mura, Radaelli, Spiller, Lettieri and Longo (2014) studied the effect of social capital on knowledge exploration and exploitation and modelled the moderating effect of environmental dynamism. The results of the study suggest a positive consequence of structural, relational and cognitive social capital on knowledge exploration and exploitation. The study also proves the moderating influence of environmental dynamism. This demonstrates that the interaction of different forms of capital with knowledge exploration and exploitation unfolds through the moderation of environmental dynamism, which implies that when environmental conditions are favourable, knowledge exploration and exploitation is enhanced than when it is hostile.

Omri (2014) studied the moderating influence of environmental dynamism on the relationship between innovative behaviour and venture performance of Small Medium and Micro Enterprises (SMMEs) in Tunisia. The study considered a multi-industry sample of Tunisian SMMEs. The findings show that innovative behaviour positively influenced innovation output, which in turn had a positive and significant effect on venture performance. However, the direct effect on business performance turned out to be positive but weak in terms of significance and these positive associations tended to decline under dynamic market conditions. Therefore, it can be inferred that although innovation behaviour did not seem to have a strong influence of venture performance, the increased competitiveness (or dynamism) of the business environment tended to weaken the innovation behaviour-venture performance relationship.

Park and Ryu (2012) used a sample of 179 SMMEs in Korea to explore the influence of SMMEs' Research and Development (R&D) capability and learning capability on their technology commercialization by factoring in the moderating effect of environmental dynamism. The outcome of the study indicated R&D capability and learning capability had a positive and significant effect on technology commercialisation, which in turn impacted on business performance. Environmental dynamism was found to moderate the relationship between technology commercialisation and business outcomes. These findings imply that SMMEs' managers ought to prioritise the consolidation of their organisational capability and prepare for turbulent business environments if they are keen to optimise the performance of their businesses.

Lastly, Yu, Ramanathan, Wang and Yang (2018) studied the ties between operations capability, productivity, and business performance in the situation of environmental dynamism. In this study, the scholars used the Resource-Based View and Dynamic Capability View (DCV) to analyse archival data from 193 carmakers in the UK. The outcome demonstrates that operations capability had a significant positive effect on productivity, which also led to enhanced business performance. In addition, it emerged that productivity fully mediates the relationship between operations capability and business performance, and that environmental dynamism significantly moderates the

relationship between operations capability and productivity. The implications of the study findings are that managers should create operations capability to reap superior productivity and business performance in a dynamic environment. It can also be inferred that productivity should be kept at its optimal as it is a critical ingredient to the performance of such businesses.

The findings are consistent with those of Chen, Wang, Nevo, Jin, Wang and Chow (2014) who suggest that environmental dynamism has a multi-faceted and nuanced influence on the IT capability and organisational performance relationship. Specifically, environmental hostility deteriorated the effect of IT capability on business process agility, while environmental complexity strengthened it. However, environmental dynamism does not always exert a moderating influence on the relationship between independent and dependent variables as shown by the results of Li and Liu's (2014) study of the link between dynamic capabilities, environmental dynamism, and competitive advantage within Chinese firms. The Li and Liu's (2014) study reveals that environmental dynamism, like dynamic capabilities is a driver of competitive advantage instead of being a moderator.

3.11.4. Entrepreneurial competence as a mediator between social capital and entrepreneurial success

The development of network relationships with different actors has become an integral component of business strategy in the twenty-first century, particularly in the case of SMMEs. Large firms can leverage available internal and external resources (which may not necessarily include network partners) in their quest to compete, grow and survive. One can therefore argue that SMMEs' access to diverse resources such as business networks (e.g. relevant stakeholders such as financial institutions for capital, suppliers, distributors and customers) would involve building and maintaining relationships with these actors. The process of building and maintaining these networks would contribute to the development of the entrepreneurial competences of the entrepreneurs (e.g. through entrepreneurs' interaction with seasoned technical experts, financiers, marketers, academics), which contributes to entrepreneurial success of firms through improved firm growth and performance.

According to Bovnlin & Lee (2006), success in entrepreneurship derives from social capital employed by entrepreneurs for the growth of their new ventures. A study by Fabová & Janáková (2015) has indicated that social capital plays an important role in entrepreneurs' development of firm strategies and creation of an innovative culture, which can also foster the success of the business. Despite the importance of social capital towards business success, a number of studies have claimed that a lack of entrepreneurial competencies hinders SMMEs' success (Ahmad, 2007; Beaver & Jennings, 2005; Dulewicz & Higgs, 2000). The inability of entrepreneurs lacking entrepreneurial competence to realise success despite their possession of social capital, implies that social capital positively impacts entrepreneurial success through entrepreneurial competence.

Several studies that have examined the effectiveness of different dimensions of entrepreneurial competencies in realising entrepreneurial success have reached different conclusions (Ahmad, 2011; Dubey & Ali, 2011; Mohammed, 2017) pointing to a lack of clarity on the mechanisms through which competences affect entrepreneurial success. Tehseen, Ahmed, Quresh, Uddin and Ramayah (2018) argue that this confusion is derived from a lack of exploration of the effect of entrepreneurial competencies. The failure to establish what role entrepreneurial competences play in social capital- entrepreneurial success relationship, necessitated this investigation.

3.11.5. Environmental dynamism as a mediator between social capital and entrepreneurial success

External factors such as environment play a vital role in the success of SMMEs businesses. The success of SMMEs is contingent upon the performance indexes factors such as financial, customer, internal processes, environment and innovation (Behn, 2013). In traditional management view, the number of employees, volume of financial resources and tangible resources critical to improving the success of businesses. But in recent years, that view has changed to include intangible resources such as social capital. The entrepreneurial value of social networks have been heavily emphasised in scholarly literature (Hite, 2005; Hite & Hestetly, 2001; Liao & Welsh,

2003). The value of such networks such as Facebook has also received considerable attention, and social networks are considered part of social capital. Huang and Wang (2011) investigated the effect of social capital and environmental dynamism on the link between entrepreneurial orientation and resource acquisition. The study results suggested that social capital and environmental dynamism are interrelated with entrepreneurial orientation and resource acquisition capability. Perhaps, the dynamism of the environment moderates how social capital interacts with entrepreneurial orientation and resource acquisition capability. For instance, Gilley and Rasheed (2000) provided evidence of the moderating role of the dynamic environment in relationship between outsourcing and firm's performance. Since outsourcing necessitates the firm to develop well developed social networks with external experts for it to work, one can insinuate the moderating role of environmental dynamism in the relationship between social capital (required in outsourcing) and firm performance (a dimension of entrepreneurial success).

3.12. CHAPTER SUMMARY

This chapter addressed the various forms of capital and their possible impact on the entrepreneurial competence and success of female owners and managers of South Africa engineering and construction businesses in South Africa. It also focused on the mediating influence of environmental dynamism on entrepreneurial competence and success. Supporting research evidence from across literature that was reviewed in this chapter revealed that the influence of distinct personal and capital attributes on entrepreneurial competence and eventually entrepreneurial success is increasingly gaining acknowledgement. Women-owned and managed business in the SMMEs sector, particularly those in male-dominated industries (e.g. the engineering and construction industry), South Africa included, were found to demonstrate low levels of entrepreneurial success. The chapter noted that claims have been made about the female entrepreneurs in the male-dominated industries failing to leverage their unique personal attributes and various capital resources in the quest for entrepreneurial success. Finally, the chapter also noted that environments characterised by hostility, prejudice and limited receptivity of female entrepreneurs affect the competence and ultimately the entrepreneurial success of such women in a negative way. Therefore, the said entrepreneurs should strive to achieve the right balance between their innate, acquired resources, and the environment, which they operate in if they are to enhance their

competencies, and eventually, their probability of success. The next chapter discusses the methodology used in the study.

CHAPTER 4: RESEARCH METHODOLOGY

4.1. INTRODUCTION

The foregoing three chapters reviewed the literature on the key research variables, personal demographic factors, personal traits (e.g. creativity and operational capabilities), social capital and entrepreneurial success, which are central to this study. These chapters served to provide some theoretical and conceptual responses to the research question posed in the study. A research methodology employs researcher's paradigmatic view, approach, design, target population, data collection procedure and data analysis techniques with a view to address the research questions posed in the study and propose some recommendations for policy and practice gaps identified in the research. Research ethics and issues concerning the credibility of the study are also deliberated. These concepts are respectively discussed in the subsequent sections.

4.2. RESEARCH PARADIGM

Scholars define the term research paradigm in different ways. Kuhn (1962) defines it as "a particular way of thinking that is shared by a community of scientists in solving problems in their fields." Bryman (2012:630) portrays the concept as "a cluster of beliefs and dictates which for scientists in a particular discipline influence what should be studied, how research should be done, and how it should be interpreted." As such, for this research, the paradigm will serve as a philosophical and analytical lens for investigating the challenge of understanding personal demographic, personal traits, capital determinants of entrepreneurial competence and entrepreneurial success, and how this challenge can be interpreted. Finally, Creswell and Plano Clark (2007:22) describe the concept research paradigm as "how we view the world, and thus go about conducting research". It can be inferred from the three definitions that paradigms provide research communities with some guiding frames to make sense of complex phenomena and to acquire new knowledge. This interpretation coheres with Guba and Lincoln's (2005) view that "As we (as researchers) think, so do we act." The paradigm therefore, provides the theoretical, methodological and analytical framework for approaching the study and the courses of actions in implementation of the research in fulfilment of research objectives.

A research paradigm comprises a unique set of philosophical assumptions about the nature of knowledge (ontology), ways of knowing (epistemology) and value systems (axiology). Therefore, it provides a shared world view that captures and represents the beliefs and values of a discipline and renders some courses of action for resolving societal problems (Schwandt, 2001). Creswell and Clark (2007) consider positivism, post-positivism, interpretivism and pragmatism as the most popular research paradigms. This study adopts a positivist epistemology. Positivism is considered appropriate when researchers seek to establish relations of associations between concepts and constructs using a predetermined conceptual model (Leedy & Ormond, 2010). A positivist stance was considered ideal since this study examines the relationships among personal demographic variables, psychological variables, forms of capital, entrepreneurship competence and entrepreneurship success. Furthermore, a positivist epistemology allows the researchers to measure the relationships among variables reliably and validly (Biggam, 2008) as well as predict their effect sizes.

4.3. RESEARCH APPROACH

This study employs a quantitative approach. This research approach is “concerned with quantifying data and generalising results from a sample of the population of interest, and asks questions such as ‘how long’, ‘how many’ or ‘the degree to which’” (MacDonald & Headlam, 2008:9). The assumption underlying quantitative approaches is the existence of objective knowledge, which can be reliably measured using scientific means (Cohen, Manion & Morrison, 2007). Consequently, valid conclusions can be drawn from such scientific measurements. The variables explored in this study and their relationships are quantifiable and the product of the examination of these associative and predictive relationships is the generation of objective and testable knowledge.

The goal of quantitative research is to unravel knowledge about observed reality in the form of associations among variables (Leedy & Ormrod, 2010). This is consistent with the study’s purpose of exploring the associative and predictive relationships among personal demographic, psychological, capital variables, entrepreneurial competence

and entrepreneurial success. The quantitative approach, allows the researcher to analyse, predict the relationships between variables and make inferences of sample characteristics to the broader target population. With reference to this study, hard data drawn from a sample of selected female engineering and construction entrepreneurs, located in the Free State Province, was employed to make some inferences on the entrepreneurial behaviours of the population they represented. A quantitative research approach examines a phenomenon from an outsider perspective in order to explain and predict the relationships in the phenomena under study (Cooper & Schindler, 2010). For the purpose of this study, multiple relationships were examined drawing on numerical data to establish the effects of selected personal demographics and capital variables on entrepreneurial competence and entrepreneurial success of these female SMMEs' owner/managers.

In the absence of integrated models exploring the interactive effects of personal demographic and capital variables, entrepreneurial competence and entrepreneurial success of women-owned/managed engineering and construction SMMEs, a quantitative research approach provided a useful investigative framework for unpacking these multiple relationships to establish their associative and predictive effects. The approach facilitated the testing for any associative or prognostic linkages between independent and dependent variables. Finally, a quantitative approach is an ideal fit for this study because the study tested objectively verifiable relationships between variables with a view to develop a conceptual model founded on the hypothesised relationships.

Decisions relating to the selection of a research approach inform the choice of the research design. As such, when an approach of a quantitative nature is adopted, it naturally follows that the design needs to be of a similar nature in order to conform to parameters and statistical standards that will be applied in the study. Thus, the next section focuses on the research design selected for the present study.

4.4. RESEARCH DESIGN

The research design can be conceived as the blueprint for a research study. According to Biggam (2011), a research design spells out how the research effort will proceed. The current study adopts a cross-sectional survey design as a means to find answers to the research questions. The goal of such a research design is to collect data from a single point in time as opposed to collection at intermittent intervals (Punch, 2003). This study sought to develop an in-depth profile of successful women in the engineering field and the construction sector, which makes a cross-sectional survey research design ideal for developing such a profile because it affords the opportunity to unpack summarised data on the respondents' perceptions and attitudes (Leedy & Ormrod, 2010).

According to Privitera (2014:226), a survey research design emphasises “the use of a series of questions or statements presented orally or in written form to characterise an individual or group.” In this study, a survey design is employed because it affords the generation of information on respondents' attitudes, emotions and perceptions on the strengths of various antecedents and moderators shaping entrepreneurial competences and entrepreneurial success. Furthermore, the suitability of a survey design for this study was informed by its ability for gathering data from isolated respondents in a comparatively short time and at a reduced cost. The findings from surveys are based on the target population and the conclusions based on such findings are backed-up by substantial empirical data. Lastly, data gathered from surveys can be used to test models, theories and causal relationships –in this instance, it was used to confirm the proposed conceptual model of entrepreneurial success.

4.5. SAMPLING PROCEDURE

This section describes the sampling issues used in the current study. It encompasses the unit of analysis, target population, sampling method and sample size details that are dealt with in detail in the following subsections.

4.5.1. Unit of analysis

A unit of analysis is an observation for which independent and dependent variables are measured (Courgeau, 2003). According to Rubin and Babbie (2016:163) the unit of analysis describes “those things that we examine in order to create summaries and explain the differences among them.” In social research, such units can be individuals, groups, institutions or nations. The current study’s unit of analysis consists of selected female business owners and managers of engineering and construction SMMEs. The study’s focus on developing detailed profiles of successful women entrepreneurs made the consideration of female owner/managers ideal for this study. In addition, the centrality of personal and capital variables in this study made the use of individuals as unit of analysis suitable for this research.

4.5.2. Target population of the study

The target population is the universal set of research subjects that a researcher intends to study (Morgan & Sklar, 2012). The target population possesses all the variables that are of interest to the researcher (Nenty, 2009). It is from this group that the respondents of a study are sampled, and the findings of a research study are generalised. The target population of the study comprised all 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) were consulted to establish the number of registered female owned/managed engineering and construction firms. The first database established that there are an estimated 800 female owned/managed engineering businesses in the Free State registered on the ECSA website while the CIDB website register revealed an estimated 400 female owned/managed construction businesses. Therefore, 1200 female owned businesses were considered as the target population of this study.

4.5.3. Sampling method

It was not feasible to research the entire target population in the present study owing to logistical restraints, time constraints and research costs (Maree & Pietersen, 2016). Thus, it is essential to extract a representative sample with the sample elements of

engineering and construction business owner/managers selected using probability sampling. Probability sampling provides all sample elements in the target population with equal chance of being considered as part of the sample (Saunders et al., 2009). The sample for this study was extracted from databases of ECSA and the CIDB. A sampling frame ought to be of suitable configuration to facilitate a representative sample to be selected (Blumberg, Cooper & Schindler, 2014). Hence, an online random number generator was used to select sample components from the sampling until the preferred size was reached.

4.5.4. Sample size

A critical issue in any empirical study is to decide on the appropriate and representative size of a target population. Saunders, Lewis and Thornhill (2009) caution on the use of the law of large numbers as one of the guiding tools for deciding sample size in quantitative studies. This law posits that a larger sample size has a higher probability of being normally distributed. Moreover, larger samples are credited with giving the researcher greater opportunities for conducting different statistical tests (Saunders et al., 2009). Nonetheless, the final decision on the appropriate sample size is informed by aspects such as cost, time frame, the size of the target population and the level of representativeness that is required (Martínez-Mesa, González-Chica, Duquia, Bonamigo & Bastos, 2016).

This study gave due consideration to the time constraints of the researcher who is a full-time employee of the Department of Human Settlements, Free State. It also considered the relatively limited budget and the impossibility of including all population elements. In quantitative research, statistical formulae are used to determine an appropriate size. A rule of thumb is to accept a minimum sample size of 30 elements for a quantitative study (Saunders et al., 2009). The logic is that at this size elements are normally distributed around the mean and findings from a sample with similar characteristics can be generalised to the target population (Cohen et al., 2007). In the final analysis, the choice of a sample size is eventually an educated and personal decision.

The researcher considered a sample size of 400 elements for this study. The researcher established this figure by first determining the total population of female owned/managed engineering and construction SMMEs in the Free State Province, which is 1200. The Macorr Sample Calculator set at 95% confidence level, and a confidence interval of 5% was used to determine the actual sample size. The sample size of 291 units was established from the calculation but was increased to 400 units to cater for the low response rate, which is normally characteristic of surveys. Increasing the sample is often recommended when the response rate is expected to be low as this eliminates chances from sampling bias, and thus enhances the representativeness of the sample (Cohen et al., 2007). This is essential for the study given the need to generalise the results to the target population.

4.6. INSTRUMENTATION

This section discusses the tool used for data collection. This is dealt with in detail under three subsections choice of instrument, pilot-testing and its administration.

4.6.1. Choice of Instrument

The researcher collected data from respondents using structured self-administered questionnaires. This research instrument sought respondents' feedback on their demographic data, creativity and operational capabilities, forms of capital, entrepreneurial competences and responses on the stability of the entrepreneurship environment in order to develop a broad profile of variables that most predict entrepreneurial success.

Structured self-completion questionnaires were deemed as appropriate research tools because the researcher needed to elicit a large amount of respondent standardised data from which inferences to the target population could be made. In addition, structured questionnaires afford the researcher the opportunity to gather accurate data from a sample of respondents quickly and at marginal cost. The questionnaire consisted of close-ended questions, which restricted the respondents' answers to a

provided set of options such as from strongly disagree to strongly agree. These questions were pre-coded as a provision for further statistical tests.

The structure and content of the questionnaire was kept simple and clear in order to capture and retain the interest of respondents. The questionnaire was developed in English, which is one of the official languages in South Africa.

The contents of the questionnaire were as follows:

- *Demographic information of the SMME owner/manager*
- *Business information*
- *Statements /questions on*
- *SMME owner/manager's creative abilities*
- *SMME owner/manager's social capital*
- *SMME owner/manager's entrepreneurial competence*
- *SMME owner/manager's perception of the hostility of the business environment*
- *SMME owner's perception of the success of her business*

The non-demographic and non-business information were presented in Likert scale format.

4.6.2. Pilot Testing

According to Blessing and Chakrabarti (2009), a pilot study is a test run of the actual study. It takes place before the main study and is done on elements of the target population who are not part of the main study sample. However, these elements must have the same attributes as the sample elements. The purpose of a pilot study is to assess issues that include the lucidity of the research instrument items, instructions and layout. In addition, its goal is to reduce obscurities or complications in questionnaire phrasing and to enhance the readability of the questionnaire. The end-product is a better research instrument with higher validity, reliability and feasibility.

The instrument was pilot tested on 30 female owner/managers of engineering and construction businesses who were not respondents in the main study. The trial-run of the questionnaire was followed by amendments to the phrasing before conducting the

detailed study. The research supervisor and a trained statistician provided useful comments before and after the pilot study that is, after the instrument was designed and after the pilot study when the wording and ordering of variables had to be adjusted.

4.6.3. Administration of The Questionnaire

A total of 400 questionnaires were distributed to the engineering and construction businesses in the Free State Province. Three research assistants were appointed to assist the researcher with administering the questionnaires to respondents. The use of research assistants yielded a high response rate from the study's respondents. Out of the 400 distributed questionnaires, 340 were completed, representing a high response rate of 85%. According to Leedy and Ormond (2010), personal delivery and collection of self-completion questionnaires improves the response rate.

4.7. ENSURING CREDIBILITY

The usefulness of any outcome of any empirical research process depends on the credibility of the process that gave rise to such findings. The existence of any defects in a research instruments undermines the credibility of the results of any research (Leedy & Ormond, 2010). Thus, it is possible that the researcher may assess or observe an incorrect phenomena or may even assess or observe phenomena inaccurately and this leads to incorrect findings and ultimate establishment of unsound deductions and generalisations. Nevertheless, the magnitude of error and bias in an empirical study can be reduced through ensuring the validity and reliability of the research instrument being used (Blumberg, Copper & Schindler, 2008).

The credibility of an instrument is normally discussed under two broad concepts and these are validity and reliability. The reliability of a research instrument is a necessary but and insufficient requirement for validity (Leedy & Ormrod, 2010). The subsequent subsections outline how validity and reliability were addressed in the study.

4.7.1. Validity

Validity in research relates to whether a data collection instrument measures what it is intended to measure (Zikmund, Babin, Carr & Griffin, 2012). The concept of validity

communicates the level of a sufficient and intended measure. Therefore, a research instrument validity has a huge bearing on the credibility of the results of a study. Where a research instrument is used on respondents, maintaining credibility is a challenging issue given that one has to deal with nonconcrete ideas such as dispositions, outlooks and perceptions (Maree & Pietersen, 2016).

There are two types of validity and these are external and internal validity. Internal validity relates to whether the research instrument used in a study measures what it is purported to measure. Upon the completion of the study, anyone making some judgements on the credibility of the study should address the question “Was the study done right?” In addition, external validity relates to whether the findings generated using a research instrument can be generalised from the sample to the target population (Blumberg, Cooper & Schindler, 2008). Based on this understanding, a research tool that exhibits good external validity when used by one researcher in a study should yield a similar result when used by another researcher. In this regard, external validity largely depends on the characteristics and representativeness of the sample, concerns which have already been addressed under the sampling design subsection. Therefore, this section is concerned more with the forms of internal validity and in particular, content, criterion and construct validity.

4.7.1.1. Content Validity

Content validity, also known as the face validity of a research, tool denotes the extent to which the research instrument adequately embodies the subject matter of a variable. In this study, content validity was safeguarded by including, in the questionnaire, components that sufficiently embodied the constructs of social, cultural and emotional capital, entrepreneurial competence and entrepreneurial success as noted from the literature review. Furthermore, the study promoter, another expert on entrepreneurship and a statistician extensively commented on the questionnaire construction process.

4.7.1.2. Criterion Validity

Criterion validity relates to the predictive capability of questionnaire items used to measure a variable in comparison with an established standard (Blumberg et al.,

2014). It deals with the extent to which a measure is associated with some other standard benchmark that is known to show the same variable precisely. To evaluate the criterion validity of an instrument, the 'existing scores of an existing instrument which is known to measure the same construct should be available for the same sample of respondents' (Maree & Pietersen, 2016:240). However, there is no dedicated current research instrument that comprises the different variables mentioned in this study, so there were no mechanisms for comparing the scores from this instrument and those from another related standard.

4.7.1.3. Construct Validity

Maree and Petersen (2016:240) define construct validity as 'how well the constructs covered in the instruments are measured by different groups of related items.' Leedy and Ormord (2010) conceive it as the level to which an instrument measures an abstract feature. Thus, construct validity shows whether a research instrument measures what it anticipates to measure and if an appropriate identification of the independent and dependent factors was done in the study (Hair, Anderson, Tatham & Black, 2008). In addition, Maree and Petersen (2016) note that construct validity forms the basis of the standardisation process of any research instrument. Finally, the researcher safeguarded this form of validity by operationalising the dependent and independent variables and drawing on extant literature to produce the questionnaire items.

4.7.2. Reliability

The concept of reliability relates to the level to which a measuring instrument yields stable and consistent results. An instrument must yield similar results if it is used to measure the same construct at different times. This reflects the instrument's freedom from random or unstable error (Saunders et al., 2009). Thus, a reliable research tool produces constant results when fielded at different times and to a different set of respondents of the same target population.

According to Maree and Pietersen (2016), there are many types of reliability which include test-retest, equivalent form, split half and internal reliabilities. The issue of concern in the current study was the internal consistency of the research instrument. The concern focused on whether a set of scaled items measure the same construct. Thus, any measure that assesses the degree of this consistency reflects the reliability of a research instrument, with the Cronbach's alpha coefficient used to measure internal reliability. The possible values of this indicator range from zero to one, with those close to one indicating high reliability and those close to zero reflecting low reliability. The general guidelines for determining the acceptable levels of reliability are: 0.90- excellent reliability; 0.80- good reliability; and 0.70- acceptable reliability. All the continuous scale variables measured showed good reliability (see the reliability section of the Findings chapter)

4.8. DATA PREPARATION

4.8.1. Data Cleaning

After data had been gathered, the completed questionnaires were inspected for inaccuracies and faults in order to determine the elements that could probably undermine data analysis. The common problem observed in the process included partially filled and, at times, uncompleted questionnaires. The half-filled and spoilt questionnaires were thus left out of the data analysis process. Finally, 335 of the 340 successfully completed questionnaires were analysed as five were excluded from analysis because they were deemed incomplete.

4.8.2. Data Entry and Coding

The cleaning process was followed by the coding of raw data in preparation for analysis and testing. The process of coding involves grouping data in an understandable way in preparation for analysis (Bryman & Bell, 2015). Symbols or numbers are assigned to alternate responses to questions and statements on the research instrument. This study used a pre-coded instrument for which numerical values were given to different response possibilities prior to the data collection process. Hence, it was not necessary to allocate new codes to the responses after

data collection. After coding, the data was entered into statistical software Stata 12 in preparation for analysis.

4.9. PROCEDURE FOR DATA ANALYSIS

Data analysis is the “procedure of separating the aggregated exploration information to a reasonable organization and framing outlines utilizing factual methods” (Desta, 2015:9). The challenges faced in the data analysis process included wrongly completed, incomplete and even uncompleted questionnaires. Thus, the data was cleaned before further analysis was conducted. After sifting the data of errors, it was coded to prepare for further analysis and testing. Once the data was coded, it was then entered into statistical software, Stata 12, for in-depth analysis.

The current study employed basic descriptive statistical tools such as frequency distributions, graphs and pie charts to present and interpret data. Lastly, the researcher used inferential statistics, such as linear regression and correlation analysis, to analyse the data.

4.10. ETHICAL CONSIDERATIONS

Research ethics involve moral obligations expected on daily work and in the protection of the dignity of subjects and the publication of the information in the research. Research ethics require the researchers to consider the ethical implications of their research to mitigate negative risks, prejudices and undesirable consequences on subjects that may arise from the conduct of their research (Fouka & Mantzorou, 2011).

The current study adhered to the following ethical standards:

- The researcher obtained the necessary ethical clearance from the University’s Faculty of Management Sciences and from the University’s Institutional Planning Office before the study was conducted. Once ethical clearance was granted, the researcher sought ethical clearance from the Provincial Office of the Department of Human Settlements in the Free State Province.

- Research subjects were appraised of the objectives of study, the expected benefits of participating in the study and further informed that no financial benefit would accrue from their active participation.
- Respondents were informed that participation in the study was voluntary and therefore, they could withdraw from the study without any potential sanctions or risks.
- Respondents' identities were protected for their dignity, safety, security and from law enforcement agencies such as the South African Receiver Revenue Services (SARS). The researcher ensured anonymity of respondents' responses by reporting their responses in aggregate form to protect their individual identities.

The fundamental ethical rule of social research according to Babbie (2007:27) is that research must not bring harm to the respondents, a rule that this study also observes. Therefore, the current study was conducted in a way that took into account all the ethical issues in social research.

4.11. CHAPTER SUMMARY

This chapter outlined the research design methodology employed in this study. The research methodology was founded on the positivist research philosophy and quantitative research approach. In addition, the study expounded on the research design, target population, sampling procedure, research instrument, pilot study, and the administration of questionnaires, data collection, ethical considerations and data analysis. The chapter also focused on the validity and reliability of the questionnaire used in the study. The next chapter discusses the results of the study.

CHAPTER 5: FINDINGS AND DISCUSSION

5.1. INTRODUCTION

The preceding chapter presented the research methodology adopted in the study. The current chapter presents empirical findings and discussion of the survey of female managers/owners of SMMEs in the engineering and construction industries operating in the Free State Province. The main findings reported on include the response rate, business owner/manager's personal and business demographics, capital attributes, environmental hostility, entrepreneurial competence, and entrepreneurial success relationships. Correlation analysis was applied to test for any statistical relationships between the independent, mediating and dependent variables. The last segment of the chapter provides results of the Analysis of Variance (ANOVA) and multiple regression analyses performed to estimate the predictive influence of the independent variable on the dependent variables.

5.1.1. Response rate

Out of 400 questionnaires distributed, 340 were completed, which represents a response rate of 85%. Literature suggests that a response rate of 50% is acceptable (Bryman & Bell, 2011), and therefore, a response rate of 85% was considered sufficient for in-depth statistical analysis. Other studies covering emerging engineering and construction firms such as Ramorena (2016) and Akaba (2016) had comparable response rates of 64.5% and 76% respectively. The data from the survey was further sorted and checked for missing values and 5 questionnaires were found to have missing values. These questionnaires were either incomplete or wrongly completed and subsequently excluded from in-depth statistical analysis.

5.2. SAMPLE DEMOGRAPHICS

The results in Table 5.1 indicate that the study sample was mainly made up of married respondents (42.8%), followed by the divorced or separated (20.5%), the single (19.6%) and then the widowed (17.2%). The results can be accounted for by multiple possible explanations – with the most obvious being that the sample simply comprised more married and separated female entrepreneurs who completed the survey – given the study's focus on successful female entrepreneurs. It should also be noted that this is a capital-intensive business, which requires multiple pooling of resources (Oladinrin,

Ogunsemi & Aje, 2012) from multiple players (e.g. partners). As a result, it is logical that married couples or partners would be naturally inclined to operate such engineering and construction businesses as they would have more economic capital to start-up and operate these businesses than individuals who are single. The Capital Theories (Bourdieu, 1984; Marx, 1867) underline the critical role of financial capital in accessing economic goods and services in the market. Thus, the paucity of financial capital, which undermines many entrepreneurial firms (Chandler & Hanks, 1998; Unger, Rauch, Frese & Rosenbusch, 2011) means that resource pooling among couples becomes a critical financial strategy for overcoming financial burden among married individuals or partners.

Table 5.1: Demographic profile of the respondents

Demographic Variables	Category	Frequency	Percentage
1. Marital Status	Never Married	65	19,6%
	Married	142	42,8%
	Divorced/Separated	68	20,5%
	Widowed	57	17,2%
2. 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%
3. 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%

Assuming that the argument about resource pooling by couples is plausible, it would find support from Capital Structure Theory, which suggest that small firms strategically choose a complex mix of equity and debt to reduce the costs of securing capital (Kum, 2019; Modigliani & Miller, 1958). The same argument resonates with the postulation of the Pecking Order Theory. The theory suggests that information asymmetry and high transactional costs of borrowing and other external sources for small entrepreneurial firms (Winborg & Landstrom, 2001), such as firms' risk averseness,

implies that firms will be compelled to private equity (e.g. from private saving) as forms of resource pooling (Myers, 1984; Kum, 2019). Overall, there was a fair distribution of respondents with varying marriage status, which suggested that although married female entrepreneurs were in the majority of engineering and construction entrepreneurs, other female entrepreneurs with other status participated in this industry.

The 51 years and above age group had the highest representation (38.4%) followed by the 41-50 age group who constituted 35.4%. The predominance of the 40 and above groups seems to suggest that capital and knowledge intensive industries, such as engineering and construction, require mature adults who would have accumulated industry knowledge (e.g. by serving in other firms or have experimented with other businesses for creating their own) and financial capital to successfully run their individual businesses independently. Consistent with Becker's (1964) Human Capital Theory, the possession of entrepreneurial and industry knowledge is considered critical in the acquisition of utilitarian resources, such as financial and physical capital (Brush, Greene & Hart, 2001; Unger et al., 2011), which is critical to the successful operation of engineering and construction business. Therefore, it can be assumed that older and mature female entrepreneurs would have secured a wide range of industry relevant knowledge, skills and financial resources over their life time than younger entrepreneurs. This finding somewhat resonates with Ramorena (2016) who reports the 36-55 age group was comparatively higher (46%) in his sample on emerging contractor firms than the 26-35 age group (34%). One can argue that the female entrepreneurs operating in the engineering and construction industry need sufficient time to acquire financial and human capital (knowledge, competencies and industry exposure) that is required to create their businesses in industries they were previously employed.

The results of the racial composition show that black South Africans formed the majority (65.7%) of the sample with coloureds constituting the second largest group with 17.6%. This can be attributed two main reasons. First, the study was conducted in the Free State which is predominantly inhabited by Black Africans. Literature

suggests that the majority of the inhabitants of the Free State Province are Black African, which explains their greater representation in the sample (Small Enterprise Development Authority [SEDA, 2016]. Second, the application of Affirmative Action ingrained in the Broad Based Black Economic Empowerment (BBBEE) has resulted in a considerable number of black Africans dominating the emerging engineering and construction industry partly because of the policies that give preferential treatment to them in procurement and tenders. Such prevalence of Black Africans was expected as the emerging engineering and construction programme targets individuals from the previously disadvantaged population groups (Akaba, 2016) with regard to supply chains, tendering and provision of financial support. The prevalence of self-selected Black African females in the study may mask the claims about the prevalence of gender barriers and limited restrict the participation of females in large –scale construction and engineering reported in previous studies (Ramorena, 2016; Zunguzane et al., 2012). This does not mean that these barriers have been eliminated nor does the proliferation of black women entrepreneurs in this industry point to the nature of the study (which concentrated on female entrepreneurs) and possibly the increased provision of public support infrastructure of such women.

5.3. EDUCATIONAL BACKGROUND OF THE RESEARCH SAMPLE

Table 5.2, below, reveals that about 43% of the respondents had matric as their highest educational qualification, whilst 22.7% had a tertiary certificate qualification, and 17.9% had a diploma or degree. These variations in educational attainments are indicative of the strides made from propelling marginalised groups towards the attainment of human capital since South African's transition to multi-racial democracy. However, the sizable representation of female entrepreneurs with a matric qualification demonstrates the remnants of apartheid legacy where blacks remain concentrated on the lower levels of the academic qualification pyramid. The representation of female entrepreneurs in lower academic attainments than in higher attainments is indicative of the persistent systematic and subtle marginalisation of females in higher education attainment. This is consistent with the Liberal Feminist Theory's arguments about biological differences of women to men and the gendered nature of access to various forms of capital such as education, financial capital and professional experience (Gottschalk & Niefert, 2013; Orser et al., 2010). This also concurs with observations

from literature that persistent gender differences are evident in financial knowledge and knowledge in general relating to entrepreneurship (Lusardi & Mitchell, 2014). At the same time, the sizable number of females in the engineering and construction industry is indicative of female entrepreneurs' heeding to the South African government's call for high school leavers to venture into self-employment (Statistics SA, 2016) rather than look for employment in a country with high levels of unemployment.

Most respondents (41.7%) indicated high school level as the highest level at which business skills were acquired. This was followed by those who indicated diploma/degree (24.2%) while 15.1% and 14.8% indicated that they acquired their skills from short courses and at tertiary certificate level, respectively. The sizable number of females in the engineering and construction industry also shows female entrepreneurs' compliance with the South African government's call for high school leavers to venture into self-employment (Stats SA, 2016) rather than look for employment in a country with high levels of unemployment. The limited number of female entrepreneurs with tertiary qualifications also point to the reality that the South African government's strides in increasing access to tertiary institutions for females encounter systemic gaps that undermine the females' effective participation in higher education. In fact, the Social Feminist perspective states that women encounter unique challenges, such as the receipt of lower lifetime income than that of men, and career interruptions due to child rearing, which are different from those of men (Hasler & Lusardi, 2017) and affect the life choices women make and constrain their access to educational opportunities such as higher education.

Table 5.2: Educational background of the research sample

Educational Background	Category	Frequency	Percentage	
5. Highest academic qualification	None	25	7,5%	
	Primary	24	7,2%	
	Matric/Below	144	43,0%	
	Tertiary Certificate	76	22,7%	
	Diploma/Degree	60	17,9%	
	Postgraduate	6	1,8%	
6. Highest level of education at which skills are required	High School	138	41,7%	
	College Certificate	49	14,8%	
	Diploma/Degree	80	24,2%	
	Post-Graduate	14	4,2%	
	Short Courses	50	15,1%	
7. Highest level of education at which managerial skills are required	High School	62	18,6%	
	College Certificate	127	38,0%	
	Diploma/Degree	64	19,2%	
	Post-Graduate	70	21,0%	
	Short Courses	11	3,3%	
8. Highest level of education at which construction/Engineering skills was acquired	High School	64	19,1%	
	College Certificate	160	47,8%	
	Diploma/Degree	44	13,1%	
	Post-Graduate	62	18,5%	
	Short Courses	5	1,5%	
9. Highest level of education at which entrepreneurial skills was acquired	High School	66	19,8%	
	College Certificate	128	38,3%	
	Diploma/Degree	70	21,0%	
	Post-Graduate	65	19,5%	
	Short Courses	5	1,5%	

The results also indicated the level of education at which managerial skills were obtained. A sizable percentage (41.7%) of female entrepreneurs acquired these relevant skills at high school while 24.2% acquired the skills at degree or diploma levels. Such asymmetry in skills acquisitions can be interpreted as pointing to the

precarious situation of marginalised groups (e.g. women and Black Africans) when it comes to skills acquisition. The limited educational attainment of women is also noted in some studies as leading to the encountering of difficulties in addressing financial literacy questions correctly and lack of knowledge in financial matters (Bucher-Koenen et al., 2016; Hasler & Lusardi, 2017).

Most of the respondents indicated that the highest level at which construction/engineering skills were obtained was at the college certificate level, followed by 19.1% who indicated that it was at high school. The highest level at which entrepreneurial skills were obtained was at the college certificate (38.3% of the respondents), followed by the high school level (19.8%). The concentration of acquisition of these skills at either high school or first college qualification further demonstrates that there is a gradual transition of women's social mobility from high school attainments to university qualifications. This finding somewhat contradicts previous research, which claims that entrepreneurs with higher educational attainments tend to operate their businesses successfully than those with secondary educational qualifications or lower (Civelek, Rahman & Kozubíková, 2016).

Overall, the statistics in Table 5.2 point to the reality that although there are some shifting demographics owing to increased female participation in higher education in South Africa, women remain concentrated in high school and college certificate attainments, which are qualifications that occupy the lower rungs of the educational pyramid compared to that of men. This could be attributed, from a Gender Theory perspective, to several reasons such as limited access to schooling opportunities, difficult choices that women make regarding raising their families at the expense of completing or deferring the completion of their higher qualifications (Adebowale, 2015; Gottschalk & Niefert, 2013). For instance, gender differences were reported among men and women entrepreneurs due to different demands placed on them and different motivations for pursuit of business and other life opportunities (Adebowale, 2015).

Notwithstanding these gender variations, research drawing on the Human Capital Theory demonstrates that the possession of sophisticated human capital affects entrepreneurs' approaches to the exploitation of opportunities (Shane & Venkatraman, 2000; Unger et al., 2011). In addition, the possession of human capital correlates positively with planning and venture strategy, which subsequently, positively affects success (Baum, Locke & Smith, 2001; Frese et al., 2007). Finally, the small number of respondents with further qualifications beyond a tertiary certificate explains why some small businesses remain small for a long time. According to Venter et al. (2008), further training is critical to business owner/managers since the extent of one's educational attainment is directly related to the performance of entrepreneurs.

5.4. NATURE OF BUSINESS

Table 5.3 below, which presents the statistics on the nature of business, shows that 38.1% of the respondents' businesses had been in operation for 6-10 years whilst 25.9% had been in operation for 2-5 years. In spite of the fair distribution of firms' age from emergent to established businesses, the majority of these businesses (71.2%) had survived their first five years (see those that were six/more years old). This is consistent with the Human Capital Theory's postulation and as such, one could argue that most female entrepreneurs' possession of basic college education means that such human capital is critical to the survival of their firms (Bruederl et al., 1992; Unger et al., 2011).

However, these higher survival rates contradict the public perception that most (70/80%) SMMES (including those that are female-owned/managed) fail to survive their first five years (Mashimbye, 2019) due to multiple gender-related barriers. The high failure rates, which according to the Gender Theory, are often attributed to gender-based inequalities in access to finance, financial knowledge, poor financial management by women, and lack of gender sensitive business environment reform- i.e. legal, institutional, and regulatory conditions that eliminate gender biases and segregation in business activities (Donohue, 2011; Miles, 2017), were not evident in this study. The foregoing analysis demonstrates most of the small-scale engineering and construction firms had existed for more than five years and hence had survived.

Nieman (2006) observes that firms that would have transited their survival stages of their life cycle are usually in good standing for the realisation of sustained growth.

Most respondent's business activities were mostly civil and construction (44.6%) and mechanical engineering (42.6%). These statistics were not surprising given the study's focus on engineering and construction. In addition, these statistics confirm Ramorena's (2016) findings in which the emerging firms in engineering and construction accounted for 77.2% of his total sample. The only distinction is that Ramorena's (2016) study combined both gender while the current study concentrated on female-owned/managed engineering and construction firms.

Most respondents' businesses (50%) were private companies followed by close corporations that constituted 27.8%. The popularity of both forms of business suggests that, despite their relatively lower educational attainments, the respondents were comfortable with the complex legal technicalities, such as drafting legal documents like the Articles of Association and Memorandum of Association, associated with the formation of limited liability corporations. It also not surprising that only 27.8% constituted close corporations since the South African Companies Act no longer makes provisions for close corporations. These female entrepreneurs' choice of complex business arrangements demonstrates their deployment of general human capital (years of schooling and work experience) and specific human capital (i.e. industry specific experience, self-employment experience, leadership experience) in pooling and organising resources to secure customers and investors (Rauch & Frese, 2000). This is precisely because such business arrangements require a large amount of both capital and customer base to develop and sustain successfully. Alternatively, such institutional arrangements are reflective of their status of having developed sufficient resources to hire professionals in the development of such documents over time since their businesses had survived longer.

Table 5.3: Nature of business

Nature of business	Category	Frequency	Percentage
10. For how long has your business has been in operation?	Up to 1 year	10	3,0%
	2-5 years	87	25,9%
	6-10 years	128	38,1%
	11-20 years	48	14,3%
	Over 20 years	63	18,8%
11. Type of business activity	Civil and Construction	150	44,6%
	Electrical Engineering	6	1,8%
	Electrical (EB and EP)	6	1,8%
	Mechanical Engineering	143	42,6%
	Plumbing	19	5,7%
	General Works (GB)	12	3,6%
12. Form of business	Sole Proprietor	14	4,2%
	Partnership	40	12,0%
	Close Corporation	93	27,8%
	Private Company	167	50,0%
	Cooperative Society	20	6,0%
13. Number of employees including manager/owner	1-5	70	22,4%
	6-20	81	26,0%
	21-30	49	15,7%
	31-40	52	16,7%
	41-50+	60	19,2%

The same finding could also imply pressure on these businesses to conform to public tendering, business support (e.g. finance, technical and managerial support) requirements of the engineering and construction sector in which business with certain grading and level of capitalisation are required for such these businesses to be supported. This resonates with Ramorena's (2016) findings that most (77.4%) emerging contractor firms were closed corporations and companies which fell in Grades 1-4, had fairly developed level of capitalisation (below one million rands), tended to affiliated with Construction Industry Development Board (CIDB) and National

Home Builders Registration Council (NHBRC), which improved their networking capabilities and access to tendering opportunities.

Table 5.3 also shows that 22.4% of the respondents' businesses had a staff compliment of between one and five employees whereas 26% of the businesses employed between six and twenty persons. The fact that a sizeable proportion (48.4%) of SMMEs employed less than 20 employees reflects that most of these entities are small businesses indeed, which is consistent with the categorisation in the Small Business Act 102 of 1996. The tendency to employ a small labour force reflects financial challenges in hiring additional staff and therefore an intention to operate businesses optimally. However, remaining small can also be conceived as a deliberate strategic business orientation to avoid huge tax implications. For instance, although the size of SMMEs often advantages the entrepreneurs when they compete with large firms that have abundant resources and large economies of scale (Kremel, 2017), their innovative strategies enable surviving such competition from large firms (Chipunza, 2019, Elsaady 2011).

5.5. BUSINESS EXPERIENCE AND ENTREPRENEURIAL EXPOSURE

Table 5.4 shows further demographical information of the respondents. More than half (67.7%) of the respondents had prior experience in the construction and or engineering industries. Perhaps, the encouraging statistics point to these female entrepreneurs' appreciation of the contribution of prior experience in the successfully running of their businesses. Evidence from literature suggests that experience and exposure, as human capital forms, are a critical prerequisite for lifelong learning and integral to the accumulation of new knowledge and skills (e.g., Ackerman & Humphreys, 1990; Hunter, 1986; Unger et al., 2011).

Most of the respondents (59.5%) once tried to start a business before, which is a clear indication that experimenting with failure is an inherent component of future business success as entrepreneurs learn lessons from their previous failures. It can be inferred that a substantial number of respondents had some prior exposure to entrepreneurship in construction and engineering industries. This coheres with literature which emphasises that possession of work-related experience positions

entrepreneurs better in identifying entrepreneurial opportunities and generating capital, thus facilitating the setting up of larger and better capacitated firms (Baptista, Karaöz & Mendonça, 2014; Colombo et al., 2004). The findings support observations on the positive relationship between previous entrepreneurial or industry experience and the inclination to form a business in a certain industry (Boyd & Vozikis, 1994; Fatoki, 2014; Krueger, 1993).

Table 5.4: Business experience entrepreneurial exposure

14. Previous business /construction industry experience	Category	Frequency	Percentage
14.1 Have you ever been employed in the construction/engineering industry prior to your current position?	Yes	210	62,7%
	No	125	37,3%
15. Prior Entrepreneurial Exposure	Category	Frequency	Percentage
15.1 Did you ever try to start a business before entering the construction/engineering industry?	Yes	198	59,5%
	No	135	40,5%
15.3 Are any of your family members running a business?	Yes	120	36,3%
	No	211	63,7%
15.4 Do you have any friends running businesses?	Yes	172	51,5%
	No	162	48,5%
15.5 Do you have a personal connection with any other person?	Yes	144	43,2%
	No	189	56,8%

Only 36.3% had family members who are running businesses. Perhaps, the highly technical nature of engineering and construction businesses may prevent family members from engaging in such business. The absence of family members running such businesses deprive such female entrepreneurs the opportunity to learn through observation and participation from family role models. This is because active involvement in family businesses is reported as providing strong positive influence on entrepreneurial behaviours of business owner/managers (Kazeem & Asimiran, 2016;Radipere & Ladzani, 2014).

The percentages of respondents who had friends running businesses were evenly poised at 51.5 % (Yes) and 48.5% (No). The pattern that emerged from this analysis

is that a substantial number of the respondents had some prior exposure to entrepreneurship and the construction and engineering industries even though a sizable percentage did not have. The absence of friends operating engineering and construction businesses is disconcerting given that the Human Capital and Social Capital Theories postulate that social networks and affinities play a significant role in the acquisition and accumulation of resources to engage successfully in entrepreneurship (Becker, 1993; Burge, 2017; Schutjens & Völker, 2010). On the contrary, the female entrepreneurs who exploited their friendship networks were privileged as they could utilise them to access resources that they would otherwise not access. Following Bourdieu's theory (Bourdieu, 1990; Bourdieu & Passeron, 1977), one can argue that social networks are a form of social capital that entrepreneurs invest in, internalise and reproduce to maximise their access to financial, intellectual and market capabilities, and to exploit opportunities in markets. There is general consensus that entrepreneurs' social connections render social resources necessary for their mobilisation of financial or intellectual resources necessary for the appropriation of entrepreneurship opportunities (Hmieleski & Carr, 2008; Stam, Arzlanian & Elfring, 2014).

5.6. CREATIVE ABILITIES

An exploratory factor analysis was conducted to identify any underlying sub-constructs of creative abilities. The results of the exploratory factor analysis, presented in Table 5.5, show that the construct of creative abilities can be subdivided into three sub-constructs with the suggested names being seeing and acting differently (i.e. taking initiative), resourcefulness and the ability to adopt change. These names are suggested based on the items that fall under the derived sub-constructs. The three sub-constructs of creative abilities have high internal consistency and hence reliable latent variables can be created to form items in each sub-construct using principal components.

Table 5.5: Exploratory factor analysis of creative abilities

Creative abilities	Principal Components (Latent factors)		
	1	2	3
Q18.Seek problems where nobody else sees any	0.920		
Q19.Adopt new ways of doing things even if not sure of the outcome	0.954		
Q20.Try a new method of working even if there is a chance it could fail	0.899		
Q21.Have purposefully mastered some creativity techniques	0.425		
Q16.Usually considers more than one solution to address a problem		0.940	
Q17.Enjoy trying out new ideas in daily activities		0.916	
Q22.Makes connection between trends in environment and opportunities to improve my life			0.898
Q23.Continuously look at old problems with a fresh mindset			0.930
Chronbach's Alpha	0.830	0.925	0.845
Suggested Construct name	Taking initiative (e.g. by Seeing and acting differently)	Resourcefulness	Adopting change
<i>Note: Varimax factor rotation was used</i>			

5.6.1. Taking initiative

Table 5.6 shows that the respondents' capabilities to take an initiative are rather low. Only 11.6% indicated that they seek problems where nobody else sees any while only 28.3% are willing to adopt new ways of doing things even if not sure of the outcomes. Only 30.9% have tried new methods of working even if there was a chance it could fail. Perhaps, the highly regulated nature of the engineering and construction industry, complicated legislation and its domination by established corporations, undermine the capacity of women to excel in taking initiative. Literature alludes to the domination and crowding of the engineering and construction industry market share by the big five Johannesburg Stock Corporations namely Murray and Roberts, Aveng, WBHO, Group 5 and Basil Read (Construction Industry Development Board, 2015; Ramorena, 2016) which usurp the innovative capabilities of small emerging firms in this industry.

Table 5.6: Creative abilities-taking initiative

CREATIVE ABILITIES -Taking initiative		Frequency Distribution						Descriptive statistics		Latent Factor (Principal component) Coefficient
		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	% Agree/ Strongly Agree	Mean	Std Dev	
18. Seek problems where nobody else sees any	Count %	169 50.4%	56 16.7%	71 21.2%	38 11.3%	1 0.3%	11.6%	1.9	1.1	0.920
19. Adopt new ways of doing things even if not sure of outcome	Count %	165 49.1%	47 14.0%	29 8.6%	90 26.8%	5 1.5%	28.3%	2.2	1.3	0.954
20. Try new a method of working even if there is a chance it could fail	Count %	154 46.2%	44 13.2%	32 9.6%	91 27.3%	12 3.6%	30.9%	2.3	1.4	0.892
21. Have purposefully mastered some creativity techniques	Count %	39 11.7%	38 11.4%	16 4.8%	161 48.2%	80 24.0%	72.2%	3.6	1.3	0.478
Chronbach's Alpha								0.830		

Alternatively, these firms concentrate on entry level innovation strategies, whose impact they fail to realise at a global scale due to the large players' dominance in the industry. Research suggests that small firms often concentrate on small entry level innovations around new technologies or innovative products that create a niche market for these firms (Gottschalk, Müller & Niefert, 2009), even though they may not be conscious of such initiatives due to their limited impact in industries dominated by large players.

However, 72.2% of the respondents claim that they have purposefully mastered some creativity techniques. This finding partially resonates with findings from literature that SMMEs tend to be more efficient at creativity compared to large firms as they produce more creative products per any given expenditure on creativity than larger firms (Baumann & Kritikos, 2016, Chipunza, 2019). The finding, however, contradicts literature's claims that there is limited evidence of creativity and hence a low innovative capability of SMMEs across geographic contexts (Ladzan & Van Vuuren, 2002; O'Regan, Ghobadian & Sims, 2006; Neneh & Smit, 2013).

However, this finding is surprising given that these SMMEs generally scored low in other creativity dimensions, especially taking initiative. Consistent with General

Systems Theory one could argue that the limited demonstration of initiative indicates the limited resource subsystem environment that these businesses operate in. This theoretical perspective suggests that value creation in businesses requires the entire entrepreneurial ecosystems to be examined as a holistic system with high levels of integration between the factors intervening in the process of value creation (Grant, Shani & Krishnan, 1994; Mele, Pels & Polese, 2010). The difficulty in taking initiative among these female owned/managed SMMEs as a component of value creation requires consideration of business value creation from a Systems Theory perspective – where the sub-system (through creativity, resource availability, quality management, R&D activities, etc.) and the supra-system (cooperation between large corporations and SMMEs, regulative processes and asset improvements) are all taken into account (Mele & Polese, 2010) to get a better picture of the value creation process.

5.6.2. Resourcefulness

Table 5.7, presented below, illustrates that the respondents performed better in resourcefulness than in creative abilities. About 66.6% of respondents indicated that they had considered more than one solution to address a problem. The majority (60.1%) of the respondents also enjoyed trying out new ideas in daily activities. One can argue that the resourcefulness of these firms is derived from their simple organisational configurations and uncomplicated leadership structure (i.e. “only one head” or one director (Lima, 2017; Mintzberg, 1996) conditions that enable greater flexibility, swiftness and openness in problem solving and resource mobilisation in pursuit of entrepreneurship. Consistent with postulations which have been dubbed Schumpeterian “Mark 1” arguments, small firms have been associated with greater will power and energy to explore new opportunities as they have non-bureaucratic tendencies, are more flexible and more agile than their larger counterparts (Chipunza, 2019; Schumpeter, 1934). Alternatively, it can be argued that the hostility and unfavorability of male-dominated engineering and construction environments compel female owner/managers to be resourceful and creative in problem solving and idea generation to ensure the long-term survival of their firms. Finally, female owned/managed SMMEs are often confronted with substantial barriers and challenges in their day to day activities (Buys & Ledwaba, 2012), which could be unique and

peculiar to women as resourcefulness becomes integral to their survival and sustainability.

Table 5.7: Creative abilities - Resourcefulness

CREATIVE ABILITIES - Resourcefulness		Frequency Distribution					Descriptive statistics		Latent Factor (Principal component) Coefficient	
		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	%Agree/ Strongly Agree	Mean		Std Dev
16. Usually considers more than one solution to address a problem	Count	27	18	67	146	77	66.6%	3.7	1.1	0.965
	%	8.1%	5.4%	20.0%	43.6%	23.0%				
17. Enjoy trying out new ideas in daily activities	Count	28	8	98	121	81	60.1%	3.7	1.1	0.965
	%	8.3%	2.4%	29.2%	36.0%	24.1%				
Chronbach's Alpha							0.925			

5.6.3. Ability to adopt change

As far as adopting change is concerned, Table 5.8 shows that there is an almost fifty-fifty split between those who are willing to adopt change and those who are not. This is evident in 47.9% who indicated that they easily make connections between trends in the environment and opportunities for improvement in their lives and 55.0% who highlighted that they look at old problems with fresh mind-sets. This finding concurs with those from Neneh's (2012) study on the level of entrepreneurial mind-sets in the small and medium enterprise (SME) sector in South Africa, which state that low to moderate entrepreneurial mind-sets (creativity, risk taking propensity and growth mind-sets) contribute to high failure rate. An alternative explanation for these somewhat divergent views lies with the structural configuration of SMMEs. However, a Systems Theory perspective postulates that, SMMEs comprise both hierarchical (their constitutive parts) and functional (their different internal roles) structures in order to function sustainably, which means that women owner/managers may not always be conscious of their participation in functional and hierarchical activities (even though they perform them) as these are intricately intertwined- hence these varying results. For instance, Koestler (1967) and Dawson (2007) acknowledge that all hierarchies contain a part within a part' character even though this is more recognisable in

'structural' than in 'functional' hierarchies. SMMEs tend to have functional hierarchies and hence the varying perceptions on adaption to change.

Table 5.8: Creative abilities - Resourcefulness

CREATIVE ABILITIES - Adopting change		Frequency Distribution					Descriptive statistics		Latent Factor (Principal component) Coefficient	
		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	% Agree/ Strongly Agree	Mean		Std Dev
22. I easily make connections between trends in the environment and opportunities for improvement in my life	Count	25	43	106	93	67	47.9%	3.4	1.2	0.932
	%	7.5%	12.9%	31.7%	27.8%	20.1%				
23. Continuously look at old problems with fresh mind-set	Count	20	6	124	119	64	55.0%	3.6	1.0	0.932
	%	6.0%	1.8%	37.2%	35.7%	19.2%				
Chronbach's Alpha								0.845		

5.6.4. Ranking of all creative abilities

The ranking of all creative abilities items is presented in the colour coded Figure 5.1 below. Figure 5.1 shows that statements on taking initiative as a component of creative capabilities fall at the bottom of the ranks while resourcefulness statements rank at the top. However, there is one exception of question 21, which is far away from the other taking initiative items. The middle ranks are occupied by items that address the ability to adopt change. One can infer that female entrepreneurs were generally resourceful and moderately adapted to change even though they somewhat struggled with taking initiative. From a System Theoretical Perspective, the environment (from which all these three business orientations emerge) may not be conceived as a physical concrete entity but rather as mental representation enacted in retrospect and crafted from discrete experiences of individual managers (Brownlie, 1994). Therefore, the variations in resourcefulness, adaptation and taking initiative can be conceived as the owner/managers' varying interpretations of the same business orientations that obtained in the particular market conditions and circumstances (Mele et al., 2010). In addition, the examination of individuals (female entrepreneurs), groups (their collectivises and other role players), structure, and process of the business as a system indicates that SMMEs are better positioned to identify common and uncommon

themes that help explain their varying behaviours and effectiveness (Chikere & Nwoka, 2015).

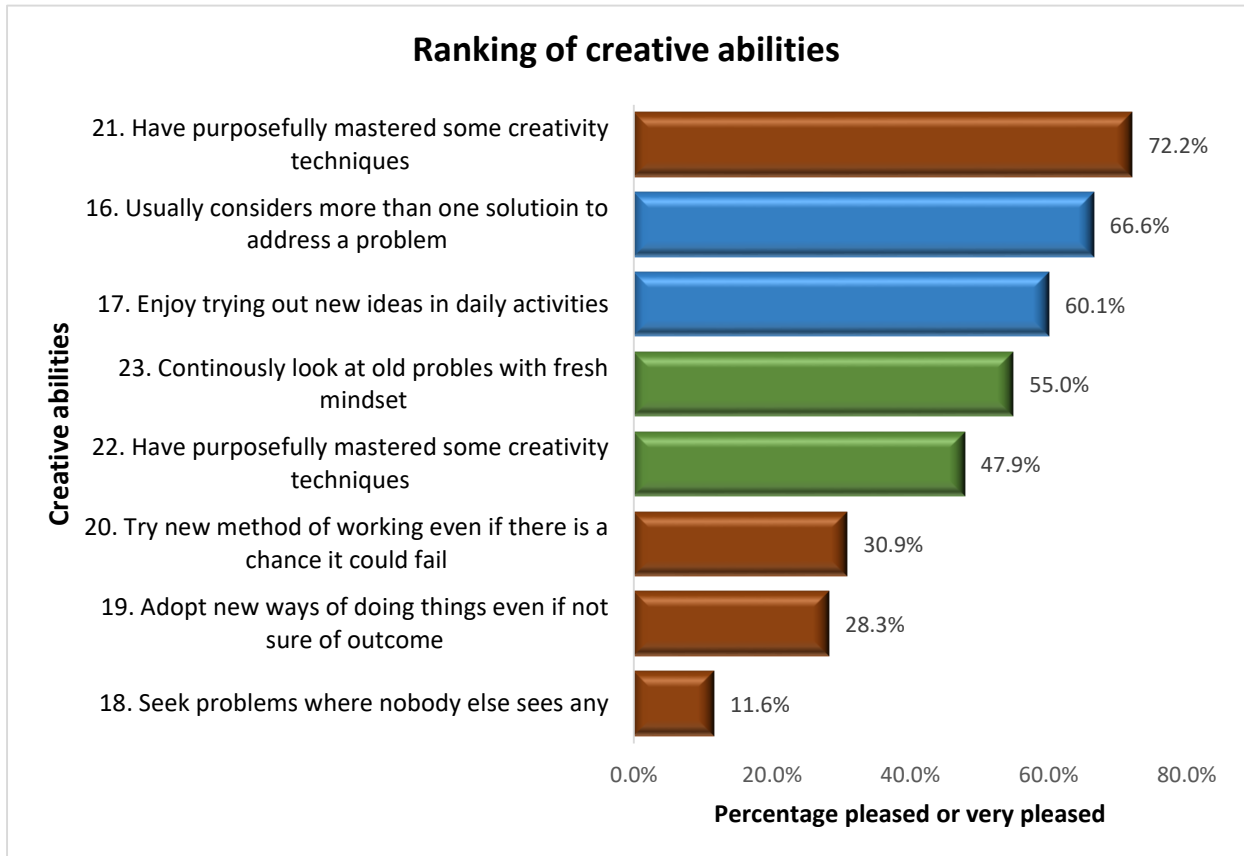


Figure 5.1: Ranking of all creative abilities

A different picture is established after viewing the different levels of resourcefulness, adaptation to change, and taking initiative from an operational capability perspective. Operational capabilities describe firm level resources, knowledge, skills and routines that enhance SMMEs' capacity to perform their strategic functions (Tatikonda, Terjesen, Patel & Parida, 2013). As a result, one can argue that the surveyed female entrepreneurs were endowed with less creative capabilities (i.e. taking initiative) than with other strategic capability traits (i.e. resourcefulness and adaptation to change).

5.7. CAPITAL ATTRIBUTES

The capital attributes, social capital, cultural capital and emotional capital, are considered in this section of the study. An exploratory factor analysis was carried out on each capital attribute in order to establish if these broad groupings of capital attributes could be subdivided into sub-constructs. The result from this analysis reveals that emotional capital could be subdivided into the categories individual's personality and relational issues. The results are presented in the subsections that follow.

5.7.1. Social capital

Table 5.9 presents the results of questionnaire items that dealt with social capital. As shown in this Table, 47.5% of the respondents agree/strongly agree that their firms maintain close relationships with their business contacts. However, only 15.9% know their contacts on a personal level. The fact that only a few female entrepreneurs know these contacts at personal level demonstrates their willingness to create binaries between professional networks and private personal lives – a sign of professional contact. In addition, the reality that a few entrepreneurs were acquainted with their business contacts at a personal level implies that they maintained and sustained bridging social capital, which refers to links that transcend a shared identity (Ramorena, 2016). Research suggests the value of bridging capital of external contacts in the generation, acceptance of new ideas and progress (Burt, 2007). Ramorena (2016) also underscores the significance of the application and deployment of bridging capital in the acquisition of better construction knowledge and intellectual capital among emerging construction firms, which is what these entrepreneurs would not otherwise gain from closed or bonded networks. Most of the respondents (79.2%) agree/strongly agree that their relationship with business contacts is characterised by mutual respect, respect and reciprocity between the parties. This is critical because literature has emphasised the centrality of mutual trust, cooperation and intensive interaction including industry structure in the forging of entrepreneurial vitality (Beugelsdijk & Smulders, 2009).

Table 5.9: Social capital

SOCIAL CAPITAL		Frequency					%Agree/ Strongly Agree	Descriptive Statistics		Latent Factor (Principal component) Coefficient
		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree		Mean	Std Dev	
24. 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
25. 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
26. Our relationship with contacts is characterised by mutual respect, 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
27. The exchanges of resource, 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
28. The contacts from which we receive advice, information or whatever element for making important decisions know each other, that is, they maintain relationships among them.	Count %	23 6.8%	14 4.2%	214 63.7%	79 23.5%	6 1.8%	25.3%	3.1	0.8	0.689
29. 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
Chronbach's Alpha								0.727		

A sizable percentage (47.1 %) of entrepreneurs were neutral or disagreed when asked on whether they have similar content in their exchange of resources and information among their contacts. A similar response was given (70.5%) by the majority when asked whether they share the same ambition and vision as their contacts. The neutrality could speak to the diversity of their experiences with their social contacts and multiplicity of visions shared with them. Therefore, the diversity of shared information shared and the heterogeneity of visions among female entrepreneurs and their social contacts (judging from the neutral to disagree options chosen for these questions) demonstrates the importance of social capital in sharing different resources.

Furthermore, literature affirms the centrality of social capital in widening the channels of access to resources such as financial capital and potential customers (Burt, 1992; Hederer, 2007, Miller, 2003). However, their limited capability to maintain strong ties with their contacts, their limited knowledge at personal levels, and limited knowledge on whether their contacts have maintained links with each other could as well symbolise the low social capital generated by these female entrepreneurs. The portrayal of the status of social capital amongst female entrepreneurs in the construction and engineering sector also somewhat strengthens the validity of the claims of low social capital among women who operate in traditionally male dominated fields (Sapleton, 2009). Recent literature affirms that limited exposure to resources, business networking opportunities and limited business awareness, due to lack of social networks, seems to undermine women's success in entrepreneurship (Mpiti, 2016; Rambe & Mpiti, 2017; Wasdani & Mathew, 2014).

5.7.2. Cultural capital

Table 5.10 shows that 72.3% of the respondents believed that when they knew that they would be meeting someone from a different culture they still treated them as they would any other person from their own culture. It is hard to understand whether such treatment, which borders on non-racialism, can be conceived as a form of effective inter-cultural communication, social cohesion and integration. What is known from a System Theoretical Perspective is that the integration different modes of thinking, behaviours and cultures is critical to the sustenance of business as a system. For instance, for an organisation to serve a holistic system, it must be punctuated by high degree of integration between the diverse factors that interact in the process of value creation (Grant, Shani & Krishnan, 1994, Mele et al., 2010). In addition, enhancing intercultural communication and the exchange of cultural capital is one such way of deepening systems thinking.

Table 5.10: Cultural capital

CULTURAL CAPITAL		Frequency Distribution					Descriptive statistics		Latent Factor (Principal component) Coefficient
		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	%Agree/ Strongly Agree	Mean	
30. 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
31. 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
32. 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
33. 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
34. 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
35. 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
36. When it comes to knowing how to cope with cultural diversity, other 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
Chronbach's Alpha							0.860		

However, only 33% of the respondents celebrated cultural differences when getting a job done whilst 74.6% maintained their own style when at parties with people from diverse cultural backgrounds. This reinforces the challenges faced in enacting and demonstrating cultural capital in work environments and in social spaces. For instance, while one could argue that task execution requires strategic direction and leadership to ensure uniformity of goals, actions and processes, the flip side is that failure to celebrate cultural differences in the implementation of projects may undermine creativity and innovation, which then compromises sustainable value creation by the female-owned engineering and construction businesses. This is because the propagation of system thinking enables firms to become learning organisations through the development of shared vision and team learning as the basis for the fostering learning capabilities: fostering aspiration, developing reflective conversation, and understanding complexity to address value generation (Senge, 1990, Mele et al, 2010).

Only 15.5% of the respondents preferred a job culture that is different from their own with 44.9% being neutral. Very few respondents (15.2%) viewed themselves as having cultural expertise. Overall, the findings presented a lower level of cultural capital among the respondents. The persistence of such a situation in the construction and engineering industries places women in a position of disadvantage compared to men. This is also consistent with Social Capital Theory's capacity to explain why interpersonal variables (e.g. various capital forms e.g. cultural capital) affect career success and its recognition of interpersonal relationships as a valuable resource (Adler & Kwon, 2002, Bozionelos, 2008). These findings seem to support previous research on the social isolation and limited exposure of women entrepreneurs to formal and informal networks – a recurrent theme of women's underachievement within women in construction research (e.g. Dainty et al., 2000; English & Le Jeune, 2012; Francis, 2017). The end-result is the perpetuation of male dominance in engineering and construction industries.

The preceding view concurs with the views of scholars that include a De Clercq and Voronov (2009) and Lounsbury and Glynn (2001) who argue that a scarcity of cultural capital restricts one's habitus. Bourdieu (1990) describes habitus thus:

“Principles which generate and organize practices and representations that can be objectively adapted to their outcomes without presupposing a conscious aiming at ends or an express mastery of the operations necessary in order to attain them” (Bourdieu, 1990: 53).

As such the habitus describes dispositions, habits, principles, archetypes and rituals, which operate in individuals' subconscious that define their actions and behaviours when confronted with scenarios in the social world and these are shaped by their social standing (Ngarachu, 2014). One can argue that the socially disadvantaged status of most emerging female entrepreneurs limits the enactment of their habitus as far as cultural expertise and inter-cultural interactions are concerned. Such a perceived lack of a strong habitus tends to undermine female entrepreneurs' access to valuable social networks in the engineering sector that remain highly male-dominated and compromises their opportunity to transition from a lower level social class to a higher level one.

5.7.3. Emotional capital

After exploratory factor analysis, two sub-constructs of emotional capital were obtained, and the results are presented in Table 5.11 below. The first sub-construct of emotional capital comprised of questions 38, 39, 40 and 41 on the questionnaire. Based on the questions that made up this sub-construct, the suggested name is personal emotions or “personality capital”. The second sub-construct comprised questions 37, 42, 43, 44 and 45 with the suggested construct name of “Relational capital”. The two sub-constructs had high internal consistency (Chronbach's Alpha statistics of 0.938 and 0.856 respectively), hence a high construct reliability.

Table 5.11: Exploratory factor analysis results of emotional capital

Emotional capital	Principal Components (Latent factors)	
	1	2
Q38.Have confidence in my skills and abilities,	0.915	
Q39.Self-directed and make independent decisions.	0.947	
Q40.Possess enough energy and motivation to achieve goals.	0.930	
Q41.Can communicate clear and straightforward.	0.864	
Q37.Own emotions affect behaviour and emotions of others.		0.680
Q42.Can listen well, understand and appreciate the thoughts of others.		0.811
Q43.Can maintain composure, and think rationally under stress.		0.844
Q44.Open to new ideas and can easily adapt to change.		0.898
Q45.Can see opportunities and resilient in the face of setbacks.		0.728
Chronbach's Alpha	0.938	0.856
Suggested Construct name	Personality capital	Relational capital
<i>Note: Varimax factor rotation used</i>		

5.7.4. Emotional capital - Personality

Table 5.12 presents the results on the sub-construct of personality capital. The items under this sub-construct relate to how individuals feel about themselves in the way they approach their work. The results show that most (86.7%) of the respondents had

very strong personality attributes and hence a high level of personality capital. Additionally, 86.7% of the entrepreneurs responded, with regards to confidence in one's skills and abilities, in the affirmative while 95.2% believed that they were self-directed and could make independent decisions. These findings seem to contradict those of Whitman (2005) whose study on 550 Australian female architects reveals that their limited confidence in themselves and lack of critical questioning abilities impeded on their social mobility in their careers. Consistent with the adage that "necessity is the mother of invention", women operating in male dominated professions are under pressure to reinvent themselves in order for their businesses to survive the competition and pressure of the industry.

The majority (94.3%) believed that they possessed enough energy and motivation to achieve their professional and personal goals. It can be inferred that females who functioned in male dominated industries, such as engineering and construction, tend to assimilate male values and archetypes, which include high motivation and energy, to survive their competitive world. This interpretation seems to concur with previous research where masculine traits demanded of manufacturing engineers and women in engineering were conceived to be invading these rationally male dominated spaces (Thurasamy et al., 2011). The same finding resonates with previous findings on the abundance of emotional capital among females compared to men (Gillies, 2006; Reay, 2004). In the context of this study, one can argue that the longevity of the SMMEs whose owner/managers participated in this study can be partially credited to the high level of emotional capital. This is particularly so because researchers investigating work performance antecedents (i.e. proficiency, adaptivity and task proactivity) among engineers report some positive associations between relationship task proactivity and professional experience (García-Chas et al., 2015). These positive associations are a clear indication that one's competence improves with experience and is derived from the longevity of the business. As such, one can contend that the duration of existence of the female respondents' business could be one critical factor that facilitates the development and entrenchment of their emotional capital (personalities) as they negotiate the elaborate intricacies of the traditionally male-dominated fields of construction and engineering.

Table 5.12: 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	
38. 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
39. 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
40. 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
41. 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
Chronbach's Alpha								0.938		

The only personality trait that was lacking, to some degree, in most of the respondents was the ability to listen well, understand and appreciate the thoughts and feelings of others (a rather low 68.8% responded in the affirmative). Perhaps motives and aspirations are at the centre of this variable as preoccupation with business survival was often considered as one of the women-operating-in-the-construction industry’s prime considerations (Dainty & Lingard, 2006; Francis, 2017). Finally, these businesses rely on “one-woman-configurations”, as a result, it would be normal for such businesses to limit democratic decision making to improve flexibility and agility in turbulent environments.

5.7.5. Emotional capital – Relationships

Table 5.13 presents the results on the sub-construct of emotional capital, which was named “relational capital. The items under this sub-construct relate to how individuals relate with others in their immediate working environment. The results show a lower level of emotional capital (relational) when compared to the personality capital items

discussed above. While emotional capital (personality) relate to the durable qualities that an individual female entrepreneur thought she possessed, emotional capital (relational) emphasised how this entrepreneur judged her personal disposition and mannerism when interacting with others.

The results from the Exploratory factor analysis split the two measures of emotional capital and highlighted that while personal emotional capital is high, the same cannot be said about relational emotional capital.

Table 5.13: 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
37. I am aware of how my own emotions affect my behaviour and the emotions on others.	Count	27	21	70	144	58	63.1%	3.58	1.12	0.620
	%	8.4%	6.6%	21.9%	45.0%	18.1%				
42. I believe that I can listen well, understand and appreciate the thoughts and feelings of others.	Count	1	1	142	144	42	56.4%	3.68	0.71	0.870
	%	0.3%	0.3%	43.0%	43.6%	12.7%				
43. I believe that I can maintain composure, think rationally under stress, and keep negative emotions under control.	Count	3	5	182	105	35	42.4%	3.50	0.74	0.900
	%	0.9%	1.5%	55.2%	31.8%	10.6%				
44. I am open to new ideas and can easily adapt to change.	Count	2	21	117	149	41	57.6%	3.62	0.81	0.889
	%	0.6%	6.4%	35.5%	45.2%	12.4%				
45. I can see opportunities and am resilient in the face of setbacks.	Count	2	25	155	106	43	45.0%	3.49	0.84	0.824
	%	0.6%	7.6%	46.8%	32.0%	13.0%				
Chronbach's Alpha								0.856		

A decent percentage of the respondents (63.1%) were aware of how their own emotions affected their behaviour and the emotions others. Slightly more than half of the respondents (56.4%) indicated that they listened well, understood and appreciated the thoughts and feelings of others while 42.4% believed that they could maintain composure, think rationally under stress, and keep negative emotions under control. Only 57.6% agreed or strongly agreed that they were open to new ideas and could easily adapt to change and 45% could see opportunities and were resilient in the face

of setbacks. The comparatively lower emotional capital (i.e. relational) compared to emotional capital (i.e. personality capital) demonstrates the difficulties of operating in male-dominated cultures, which are typically competitive, tend to be emotionally detached and display highly gendered organisational power that has proven resilient to change (Broadbridge & Simpson, 2011). However, these findings on low levels of relational emotional capital seem to contradict literature that argues that emotional capital is to a large extent associated with females than males (Reay, 2004) and that women are too emotionally invested and cannot shoulder entrepreneurial responsibilities (Johnson, 1999; Madikizela & Haupt, 2010). Perhaps, the competitive and not collaborative mentality inherent in this industry reduces the amount of emotional capital invested in the business operations. Thus, viewing the possession of emotional capital as a component of an individual's resource base that they can deploy to cope with the vagaries of a particular industry suggests that the surveyed SMMEs are in a precarious position as they possess limited emotional capital.

5.8. ENVIRONMENTAL HOSTILITY/DYNAMISM

Table 5.14 shows the results derived from the respondents' responses to the questionnaire items on market hostility. About half of the respondents (52.7%) believed that the failure rate in the market is high while 67.5% thought it very risky that one bad decision would potentially threaten the existence of a business. There are multiple factors that could explain the reported hostility of the engineering and construction businesses. These reasons include: the high levels of unionism in the sectors that sometimes compel entrepreneurs to keep incompetent and unproductive employees, the high corporate tax and its associated reduction of the profit margins leading to making the businesses less viable, and the late processing of payments by governments for services offered by SMMEs. In addition, various research identifies some of the inhibiting factors to the viability of the engineering and construction SMMEs sector in South Africa and elsewhere. For instance, research by Powell et al., (2009), Madikizela and Haupt (2010), Moodley (2012) and Francis (2017), cite a harsh engineering and construction site environment, insufficient knowledge of women about this industry, shortage of successful women who can serve as female role models, and other structural constraints such as gender-based discrimination and sexual

harassment, as some of the factors that inhibit the viability of the engineering and construction SMMEs.

Table 5.14: Environmental hostility

ENVIRONMENTAL HOSTILITY/DYNAMISM		Frequency Distribution						Descriptive statistics		Latent Factor (Principal component) Coefficient
		Very untrue	Slightly untrue	Neutral	Slightly true	Very true	% Slightly true/Very true	Mean	Std Dev	
46. The failure rate of business in this industry is high.	Count	13	9	136	32	144				
	%	3.9%	2.7%	40.7%	9.6%	43.1%	52.7%	3.9	1.1	0.875
47. It is very risky that one bad decision may threaten the existence of a business.	Count	9	10	90	59	167				
	%	2.7%	3.0%	26.9%	17.6%	49.9%	67.5%	4.1	1.1	0.799
48. Competitive intensity is very high.	Count	6	10	152	33	134				
	%	1.8%	3.0%	45.4%	9.9%	40.0%	49.9%	3.8	1.1	0.708
49. Customer loyalty is low.	Count	22	10	266	22	14				
	%	6.6%	3.0%	79.6%	6.6%	4.2%	10.8%	3.0	0.7	0.417
50. Severe price wars are characteristic of my industry.	Count	23	8	224	43	37				
	%	6.9%	2.4%	66.9%	12.8%	11.0%	23.9%	3.2	0.9	0.485
Chronbach's Alpha								0.705		

Close to half (49.9%) of the respondents believed that competitive intensity is very high in the industry. The acknowledgement of the high competition in this industry is testament to previous research that position the engineering and construction industry as highly competitive in bidding processes, predominantly male and complicated, thus compelling females to partner with male collaborators in bidding (English & Jeune, 2012; Aneke, Derera & Bomani, 2017). However, 79.6% remained neutral when asked whether customer loyalty was low. Finally, 66.9% of the respondents were neutral in their response to the question on whether severe price wars are characteristics of their industry.

The foregoing results seem to suggest a substantial level of ambivalence regarding the respondents' views concerning the level of environmental hostility. Perhaps, the

combination of a hostile environment with female role models and the affirmative action stance evident in BBBEE, which seem to cushion females from the hostilities of the environment, could explain the ambivalence in the sector (see Akaba, Rambe & Agbobli, 2016; Ramorena, 2016). The general pattern of views is that environmental hostility levels ranged from mild to low. The result is somewhat surprising given the findings from other previous studies which suggest that traditionally male-dominated fields like construction and engineering are hostile and aggressive to smaller players such as female owned/managed SMMEs- conditions, which undermine women from taking up careers in this industry (Akinlolu & Haupt, 2018; Moletsane & Reddy, 2011; Powell et al., 2009). One can also argue that the ambivalence around price wars is probably attributed to the role of Competition Commission in preventing price wars, anti-competitive behaviour and unfair competition. Hence, this institution's moderating effect on pricing in the sector even though there exist the dominance of the Big Five construction companies. Overall, the respondents' ambivalent position of the operational environment can be credited to the substantial support measures, which the South African government provides to female entrepreneurs in the prior-mentioned fields (English & Ha,y 2015).

5.9. ENTREPRENEURIAL COMPETENCE

Table 5.15 shows that 86% of the respondents believed that they can identify the product that their customer wants while 82.7% believed that the ability to seize quality business opportunities was between good and excellent. These findings contradict evidence from literature that affirm the limited marketing capabilities of female engineering and construction entrepreneurs and appeal to marketing institutions to train them in marketing skills, product design and development to increase the financial potential and sustainability of their businesses (Buthelezi, 2011; Maree, Maree, Botha & Gcabo, 2008). However, 41% of the respondents believed that their ability to take a concept and make something out of it was average with 44% also claiming to have average ability to perceive unmet customer needs. The success of female entrepreneurs in male-dominated fields often depends on parents and spouses' support to navigate the murky waters of unchartered industry (Alibhai, Buehren & Papineni, 2015). Thus, one would assume that female entrepreneurs in the

engineering and construction industry might not be getting such support in marketing their products and services.

Table 5.15: Entrepreneurial competence

ENTREPRENEURIAL COMPETENCE		Frequency Distribution					Descriptive statistics		Latent Factor (Principal component) Coefficient	
		Poor	Fair	Average	Good	Excellent	Good / excellent	Mean		Std Dev
51. Ability to identify the product that your customer wants.	Count %	22 6.5%	7 2.1%	18 5.4%	232 69.0%	57 17.0%	86.0%	3.9	0.9	0.804
52. Ability to seize quality business opportunities.	Count %	42 12.5%	5 1.5%	11 3.3%	218 65.1%	59 17.6%	82.7%	3.7	1.2	0.937
53. Ability to take a concept and make something out of it.	Count %	42 12.6%	8 2.4%	137 41.0%	87 26.0%	60 18.0%	44.0%	3.3	1.2	0.943
54. Ability to perceive unmet customer needs.	Count %	23 6.8%	26 7.7%	148 44.0%	80 23.8%	59 17.6%	41.4%	3.4	1.1	0.904
55. Ability to actively look for products and services that provide real benefit to customer.	Count %	3 0.9%	26 7.7%	72 21.4%	146 43.5%	89 26.5%	69.9%	3.9	0.9	0.893
56. Ability to scan the business environment to look for business opportunities.	Count %	3 0.9%	42 12.5%	49 14.6%	152 45.4%	89 26.6%	71.9%	3.8	1.0	0.931
		Chronbach's Alpha					0.954			

The majority of the respondents (69%) claimed to have good/excellent ability to actively look for products and services that provide real benefit to customers whereas 71.9% claimed that they had good/excellent ability to scan the business environment in search of business opportunities. These findings support the evidence that most successful female construction and engineering entrepreneurs in the engineering and construction industry tend to draw on their previous marketing experience and entrepreneurial background to break new ground in this industry (Alibhai, Buehren & Papineni, 2016, Ramorena, 2016, Verwey, 2008;).

Finally, the preceding results suggest, that the respondents demonstrated positive entrepreneurial competences. This outcome echoes Hisrich et al.'s (2010) conclusions that the effectiveness of entrepreneurs is rooted in their ability to fathom market undercurrents, identify market openings, and mobilize resources and use them to satisfy market needs better than competitors for commercial gain.

5.10. ENTREPRENEURIAL SUCCESS

Entrepreneurial success was measured in two parts. Both parts area; success and achievements in the previous twelve months in particular. The results are presented in these two categories.

5.10.1. Entrepreneurial success in general

The response variable of interest in this study is Entrepreneurial success which is a measure of performance of the sample under study. Generally, the results, as presented in Table 5.16, show low performance levels.

Table 5.16: Entrepreneurial success

ENTREPRENEURIAL SUCCESS		Frequency Distribution						Descriptive		Latent Factor (Principal component) Coefficient
		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	%Agree/ Strongly Agree	Mean	Std Dev	
57. The business is very successful today.	Count	2	56	138	118	18	41.0%	3.3	0.8	0.930
	%	0.6%	16.9%	41.6%	35.5%	5.4%				
58. The business has been profitable during the last financial year.	Count	1	59	124	132	18	44.9%	3.3	0.8	0.959
	%	0.3%	17.7%	37.1%	39.5%	5.4%				
59. The business has grown over the past two years.	Count	2	40	134	140	17	47.1%	3.4	0.8	0.976
	%	0.6%	12.0%	40.2%	42.0%	5.1%				
60. The sales of the business have increased over the past two years.	Count	1	37	138	139	18	47.1%	3.4	0.8	0.963
	%	0.3%	11.1%	41.4%	41.7%	5.4%				
61. The size of the business' workforce has grown over the past two years.	Count	1	39	133	140	18	47.7%	3.4	0.8	0.966
	%	0.3%	11.8%	40.2%	42.3%	5.4%				
		Chronbach's Alpha						0.977		

Table 5.16 shows that 41% of the respondents are of the view that their businesses are very successful and 44.9% claim that their businesses had been profitable during the last financial year. When asked on whether their businesses had grown over the past two years, 47.1% of the (47.1%) respondents agreed/strongly agreed while 40% remaining neutral. Most (47.1%) of the respondents also claimed that the sales of their businesses increased over the past years whilst 47.7% thought that the size of their businesses' workforce have increased over past two years. Given the technical recession that South Africa reeled under since the last quarter of 2017 into the rest of 2018 (almost 2 years) the level of profitability, sales growth and business success constricted significantly in the sector even though the previous years had posted some significant gains. One would assume that during an economic recession, the demand for construction projects could be low and that budgets for infrastructural projects would slightly declining resulting in constrained business growth. CCE News (2019) suggests that the construction industry was expected to contract by 0.8% in 2019 following on from a contraction of 0.6% in 2017 & 1.2% in 2018.

5.11. ENTREPRENEURIAL SUCCESS – ACHIEVEMENTS IN THE PAST 12 MONTHS

After conducting exploratory factor analyses of achievements in the past 12 months, two sub-constructs were obtained with the results presented in Table 5.17 below. The first sub-construct of achievements in the past 12 months comprises questions that address business growth and market share. The items in this sub-construct have high internal consistency (Chronbach's Alpha statistic=0.953). The second sub-construct comprises questions that address relational growth and it indicates that the items in this sub-construct have a high internal consistency (Chronbach's Alpha statistic=0.961).

Table 5.17: Exploratory factor analysis results of emotional capital

Entrepreneurial Success – Achievements in past 12 months	Principal Components (Latent factors)	
	1	2
Q63.Sales	0.919	
Q64.Gained profit	0.925	
Q65.Number of employees	0.907	
Q66.Respect from customers	0.760	
Q67.Market share	0.780	
Q68.Personal satisfaction	0.765	
Q71.Customer retention	0.636	
Q69.Career progress		0.687
Q70.Customer satisfaction		0.755
Q72.Employee satisfaction		0.905
Q73.Relationship with supplier		0.907
Q74.Business image		0.882
Q75.Industrial Relation		0.902
Chronbach's Alpha	0.953	0.961
Suggested Construct name	Business and market share growth	Relational growth
<i>Note: Varimax factor rotation used</i>		

5.11.1. Achievements in the past 12 months - Business and market share growth

The results in Table 5.18 show very modest growth in business and market share. Slightly above half of the respondents seemed pleased or very pleased with their sales (52.4%) or gained profit (51.5%). The lukewarm results seem consistent with the limited growth potential of the engineering and construction sector due to the technical recession that South Africa went through recently that dampened growth opportunities. Arnoldi (2018) reports that the construction sector in South Africa was confronted with profound challenges in 2017 that reaches 17-year lows and that this was attributed to limited investment in the sector. In general, the business and market share growth items had low levels of satisfaction.

Table 5.18: Business and market share growth

Business and market share growth		Frequency Distribution						Descriptive		Latent Factor (Principal component) Coefficient
		Very pleased	Pleased	No option	Unpleased	Very pleased	Pleased/ Very pleased	Mean	Std Dev	
63. Sales	Count %	53 15.9%	122 36.5%	118 35.3%	36 10.8%	5 1.5%	52.4%	2.46	0.93	0.942
64. Gained Profit	Count %	50 15.0%	122 36.5%	119 35.6%	38 11.4%	5 1.5%	51.5%	2.48	0.93	0.940
65. Number of employees	Count %	35 10.4%	120 35.8%	170 50.7%	7 2.1%	3 0.9%	46.3%	2.47	0.75	0.931
66. Respect from customers	Count %	39 11.6%	145 43.3%	143 42.7%	4 1.2%	4 1.2%	54.9%	2.37	0.75	0.892
67. Market share	Count %	33 9.9%	91 27.2%	152 45.4%	55 16.4%	4 1.2%	37.0%	2.72	0.90	0.879
68. Personal satisfaction	Count %	37 11.0%	132 39.4%	60 17.9%	73 21.8%	33 9.9%	50.4%	2.80	1.19	0.893
71. Customer retention	Count %	34 10.2%	120 36.0%	152 45.6%	9 2.7%	18 5.4%	46.2%	2.58	0.93	0.773
Chronbach's Alpha								0.953		

The ranking of the items of business and market share growth showed that respect from customers, which might indicate future market share, ranked the highest (54.9%) with current market share ranking the lowest (37.0%). The preceding findings cement the view in literature that small female-owned engineering and construction businesses generally struggle compared to larger ones and those owned by males (Sangweni, 2015; Zunguzane et al., 2012). From a Gender Theory perspective, these findings buttress claims in literature that female entrepreneurs, unlike male entrepreneurs, tend to struggle with sourcing and broadening their markets, managing their market and expanding their networking capabilities (Mauchi, Mutengezanwa & Damiyano, 2014). The reasons for this struggle include limited knowledge of the industry and underdeveloped social capital for effective operation in the industry. Conceivably, the suboptimal performance can be attributed to the general slow growth of the South African economy during the technical recession occurring during the time when the study was carried out (Cronje, 2019).

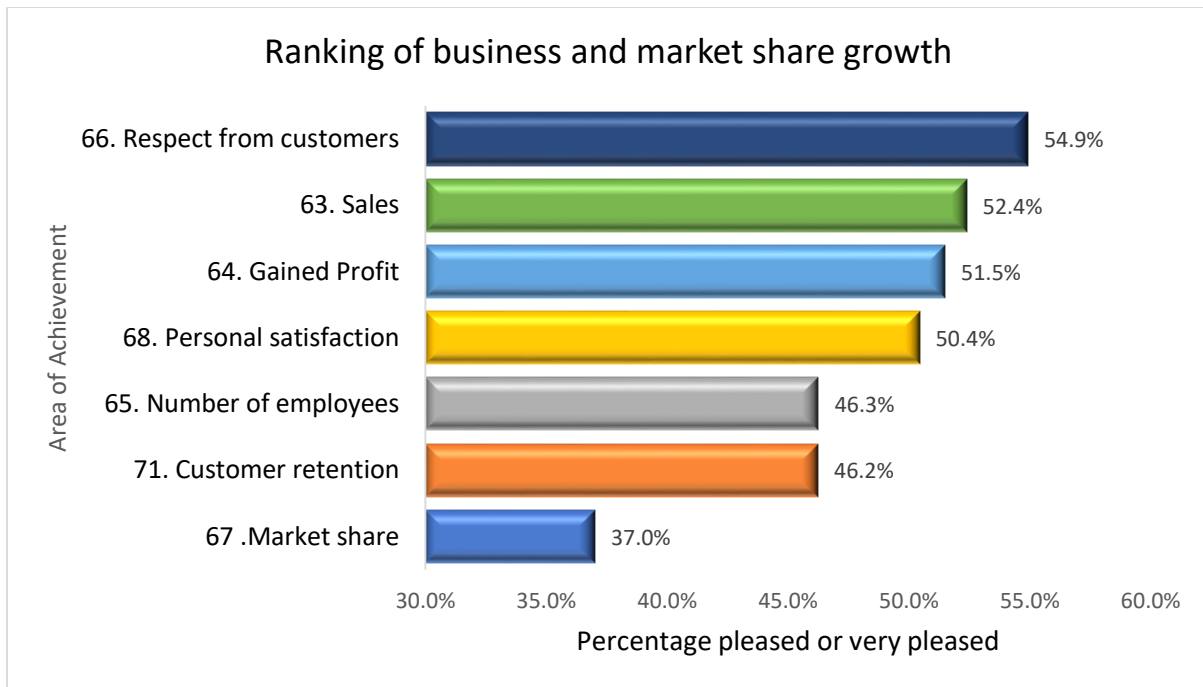


Figure 5.2: Ranking of business and market share growth items

5.11.2. Achievements in the past 12 months - Relational Growth

As shown in Table 5.19, relational achievements in the past 12 months were slightly better than aforementioned business and market share growth achievements. About 60.3% of the respondents were pleased or very pleased with their career progress while 56.5% thought their customers were satisfied, and 61.2% were pleased or very pleased with their employee satisfaction. Apart from industrial relations (47.3% pleased or very pleased) the other items had percentages above 50% pleased or very pleased. In addition, a comparison of the results of business and market share growth to those of relational growth show a comparatively higher level. One would assume that the differences between these forms of growth would be attributed the fact that, although the technical recession struck in recent years (i.e. 2017- 2018), many businesses had already established formidable relations with their stakeholders in the market. Therefore, their (owner/managers) relations with multiple stakeholders (i.e. employees, customers and suppliers) were not fundamentally undermined by the poor performance of the economy that negatively affected their sales growth directly.

Table 5.19: Business and market share growth

Relational Growth		Frequency Distribution					Descriptive		Latent Factor (Principal component) Coefficient	
		Very pleased	Pleased	No option	Unpleased	Very unpleased	Pleased/ Very pleased	Mean		Std Dev
69. Career progress	Count %	42 12.5%	160 47.8%	30 9.0%	69 20.6%	34 10.1%	60.3%	2.68	1.22	0.918
70. Customer satisfaction	Count %	81 24.1%	109 32.4%	118 35.1%	7 2.1%	21 6.3%	56.5%	2.34	1.06	0.785
72. Employee satisfaction	Count %	74 22.1%	131 39.1%	70 20.9%	23 6.9%	37 11.0%	61.2%	2.46	1.22	0.841
73. Relationship with supplier	Count %	73 21.9%	110 32.9%	90 26.9%	28 8.4%	33 9.9%	54.8%	2.51	1.20	0.842
74. Business image	Count %	102 30.4%	88 26.3%	43 12.8%	38 11.3%	64 19.1%	56.7%	2.62	1.49	0.842
75. Industrial relation	Count %	62 18.5%	97 28.9%	73 21.7%	38 11.3%	66 19.6%	47.3%	2.85	1.38	0.835
Chronbach's Alpha								0.961		

When ranked in order of most pleasing, employee satisfaction was deemed to be the highest achievement in the past 12 months while industrial relations were the poorest.

Figure 5.3 illustrates the rankings of these items. This demonstrates two clear insights (1) that most small firms tend to have a internalist perspective where owner/managers seek to strengthen their relations with staff to build strong brands before they seek to satisfy the needs of external stakeholders. It also indicates that (2) female owner/managers appreciate the reality that workers form the most valuable asset of the organisations and hence the need to keep them happy. A study conducted by the European Union in 2015 on female entrepreneurs in European countries confirms that self-employed women worked almost the same number of hours (39.3 hours) as their male counterparts (41 hours per week) in 2015 (European Union, 2016). It can be assumed that such time investment into the running of businesses could translate into female owner/managers' commitment to promote the welfare of their employees and hence their happiness. From a Human Capital perspective, employees are considered the most strategic resource of an organisation and hence the importance of keeping them content with the way they are treated by the organisation (see Andriani, 2013; Becker & Gerhart, 1996; Fine 2010).

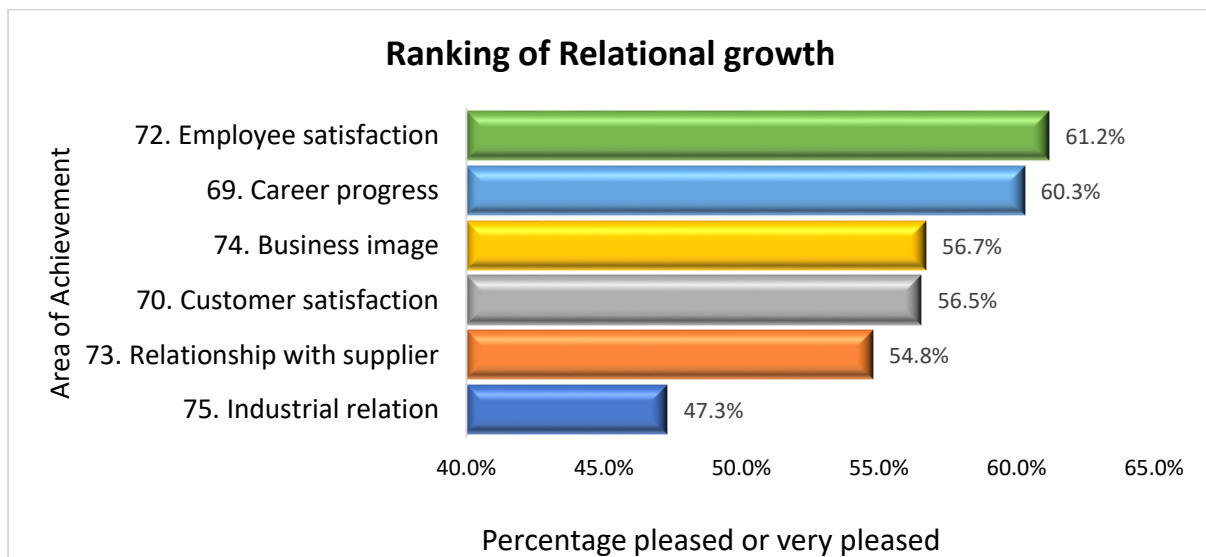


Figure 5.3: Ranking of relational growth items

The relatively positive performance in the relational aspect suggests that owner/managers go out of their way to ensure that their customers and other stakeholder are satisfied with the service rendered. These findings are somewhat inconsistent with those of Mosweunyane (2016) whose study examined how social media is employed by small tourism businesses to support internal networking among employees and workers. Mosweunyane’s (2016) evidence suggests that 67.5% of the businesses employed social media to address questions and queries from customers while only 53.7% of these businesses agreed that their worker’s appropriate social media to contact co-workers when they could not be reachable by other means. If performance of relational growth is a function of the volume of interactions between organisational teams, one could argue that customer interactions via social media were given more priority than employee interactions via social media in Mosweunyane’s (2016) study than in the current study.

In the current study, the intensity of interaction seems to favour employee satisfaction rather business image and customer satisfaction. The emphasis on Human Capital demonstrates the strength of the Human Capital Theory’s postulation that workers provide intellectual assets, which are expected to generate benefits in the future for organisations, even though such benefits may not be automatically guaranteed

(Ostrom, 2009; Cloete, 2014). Overall, Figure 5.3 demonstrates that smaller firms enjoy positive relationships with their key stakeholders, and always strive to improve them (Morsing& Perrini, 2009; Sen & Cowley, 2013).

Table 5.20: Mediation analysis results on the effect of entrepreneurial competence on capital forms and entrepreneurial success

		Specific Indirect Effects			
Capital forms -> Entrepreneurial competence -> Entrepreneurial success		0.008			
	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
Capital forms -> Entrepreneurial competence -> Entrepreneurial success	0.008	0.016	0.039	0.215	0.830

Table 5.20 indicates the results for the mediation of entrepreneurial competence on capital forms entrepreneurial success relationship. The results revealed that entrepreneurial competence positively and significantly mediate the relationship between capital forms and entrepreneurial success, indicated in the path coefficient of 0.008 and a T-static of 0. 215. The result is consistent with previous studies conducted on these variables (Kazemi, Rasekh & Navid, 2016; Mugewa, 2013; & Sa’ari, Adenan & Jamaludin, 2013). In light of this study, it was concluded that entrepreneurial competency serves as a mediator significantly affects forms of capital and finally led to entrepreneurial success.

5.12. EFFECTS OF CAPITAL ATTRIBUTES ON ENTREPRENEURIAL COMPETENCE

Correlation and regression analysis were used to evaluate the relationship between capital attributes and entrepreneurial competence. The correlation results assessed the pairwise relationship between the response variable and one independent variable without including the contribution of the other independent variables. In addition, the regression analysis considered the relationship between the response variable and all

the independent variables at the same time. The results in Table 5.20 show 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 when considered individually, that is, without controlling for the other independent variables. Both emotional capital sub-constructs, namely personality capital ($R=0.456$, $p\text{-value}<0.001$) and relational capital ($R=0.648$, $p\text{-value}<0.001$), were both significantly correlated to entrepreneurial competence without controlling for the other independent variables. Emotional (Relational) capital, whose correlation with entrepreneurial competence was 0.648, had the highest effect size on the response variable.

Table 5.21: 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).			

This outcome is contrary to expectations given that findings generally support statistically significant positive correlations between the earlier mentioned pairs of variables (Wdowiak, Schwarz, Breitenecker & Wright, 2012; Mamun, Muniady Permarupan & Zainol, 2016). Other studies point to much more complex and nuanced relationships – with reference to social capital. For instance, Kim and Aldrich (2005) contend that relationships based on individuals with similar characteristics (homophily) often contribute to a lack of diversity and thus undermine individuals' access to entrepreneurship opportunities and resources. They elaborate that not all relationships may be valued the same way – some serve to bridging gaps between diverse locations of entrepreneurship competences while some merely serving as dead ends. Kim and Aldrich's (2005) last argument is that some individuals tend to be sought after more than others, and exploit their centrality to exert power and prestige, which they

appropriate to their advantage. Therefore, one can argue that the presence and significance of a relationship between social and cultural capital and entrepreneurship competence could be a function of multiple factors. These factors include the location of the entrepreneur in the social network, the type of relationships formed between actors (bridging ties, binding ties, homophily ties), duration and intensity of the interactions and the type of the information sought via these networks.

The regression analysis results presented in Table 5.22 show that entrepreneurial competence was significantly related to the four capital sub-constructs when all independent variables were considered collectively. The overall regression model accounted for 48.2% of the variation in the response variable.

Table 5.22: 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-Square=0.482					

Social capital had a negative impact on entrepreneurial competence ($B=-0.136$, $t=-3.340$, $p\text{-value}=0.001$); and so did cultural capital ($B=-0.283$, $t=-5.671$, $p\text{-value}<0.001$). This means that the higher the social and cultural capital, the lower the entrepreneurial competence. At first glance, the preceding results seem to contradict extant literature, which proclaims a positive predictive relationship between social and cultural capital and entrepreneurial competence (Glover et al., 2016; Yadav et al., 2018). However, a closer examination of the descriptive statistics relating to social and cultural capital shows that, the respondents scored low on the said variables. Against such a background, one cannot logically expect such low scoring variables to positively account for the high levels of entrepreneurial competence reported by the respondents. Hence, these findings confirm the association between levels of social

and cultural capital on the one hand, and entrepreneurial competence, on the other reported in the correlations analysis. If anything, the study findings lend support to findings from Hisrich and Öztürk's (1999) study conducted in Turkey, which revealed that inadequate social capital hampered the entrepreneurship performance of female owned businesses in the country. Even though this study is on entrepreneurial competence and not necessarily entrepreneurial performance, one can argue that entrepreneurial competence is often taken as one of the sub - dimensions of entrepreneurial performance and hence it could be a fair comment to associate entrepreneurial competence with performance.

Shifting attention to the other predictor variables, the two sub-constructs of emotional capital positively impacted on entrepreneurial competence. Emotional capital (Personality) had a lesser impact effect size on entrepreneurial competence ($B=0.238$, $t=5.180$, $p\text{-value}<0.001$) while emotional capital (Relational) had the highest effect size ($B=0.659$, $t=12.118$, $p\text{-value}<0.001$). This finding corroborates the ideas of Shepherd (2004), who suggests that emotional capital was an integral part of an entrepreneur's attributes that afforded him or her with the entrepreneurial capability to deal with business challenges and enhanced their resilience in difficult situations.

5.13. EFFECTS OF PERSONAL FACTORS ON ENTREPRENEURIAL COMPETENCE

This section explores the relationships between personal factors and entrepreneurial competence. This section addresses research objective 4 which reads:

Which personal factors are more significant in shaping the entrepreneurial competence of female owner/managers?

Most of the personal factors in this study were categorical variable while the response variable (entrepreneurial competence) was a ratio scale derived from Likert scales. The only Likert scale based personal factors in this study were the creative ability variables. To test for the impact of categorical personal factors, analysis of variance

(ANOVA) tests was used while regression and correlation analysis was used for tests involving creative ability factors.

5.13.1. Effects of demographic factors on entrepreneurial competence

Demographic variables are categorical variables while entrepreneurial competence (response) is a continuous variable. Thus, ANOVA was used to evaluate how the demographic variables affected the response variable. Results presented in Table 5.23 show that marital status had 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 are widowed (mean=3.427) have lower levels of entrepreneurial competence than the married (mean=3.783) and the divorced/separated (mean=3.965). Scholars, such as Vossenberg (2013) and Rambe (2018), argues that women are more likely than men to restrict their authoritative decisions on entrepreneurship due to lack of confidence and trust in their capacities. As a result, one can also argue that married and divorced women's present and prior associations with entrepreneurial partners and couples contributes to the rubbing of entrepreneurial competence from their partners and couples.

The preceding results, in a way contradicts, some previous studies claiming that married women are less likely to be entrepreneurially competent than the unmarried since married women tend to have their commitments split between their entrepreneurship and their family commitments and family role conflicts tend to be implicated in their involvement in businesses. According to Ferguson and Durup (1998) and Galleta et al., (2019), "tension frequently arises between work commitments and family responsibilities because of time conflicts, high levels of emotional commitment, and sheer physical energy and time demands". However, the findings seem to be consistent with other research which suggests that married women, particularly in the African context, are most likely to have highly developed entrepreneurial skills because of the need to find income generating means to help their spouses provide for the family (Mohapatra, 2012; SACBTA & SAT, 2014, Motsomotso, 2019).

Table 5.23: 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				

Age was also a significant factor impacting on entrepreneurial competence ($F=4.503$, $df1=4$, $df2=295$, $p\text{-value}=0.002$). One unanticipated finding was that the below 21 years age group recorded the highest mean score for entrepreneurship competence. This finding partially invalidates previous literature that affirm a curvilinear relationship between age and entrepreneurship pursuits. For instance, with reference to South Africa, Daniels, Herrington, and Kew (2016) argue that early-stage entrepreneurship is moderately low in the 18–24 years' group, peaks among 25–34 year olds, and then declines as age increases with the sharpest decrease after the age of 54 (Daniels, Herrington & Kew, 2016). The 25-35 age group is partially confirmed in the rise in entrepreneurial competence in the 31-40 age group in our findings but the rest of age groups are not confirmed.

The result affirms reports that older age groups tend to be more entrepreneurially competent because of their experience and longer exposure to entrepreneurship compared to younger groups. For instance, older opportunity-driven entrepreneurs possess more business experience and income to run business entrepreneurially than younger individuals (Rambe, 2019). A plausible reason for the high means for entrepreneurial competence for the below 21 years' age group is the huge number of high schools and higher education institutions in South Africa have in the past decade started offering compulsory entrepreneurship education and training. Thus, it is possible that the younger respondents in the current study could have been exposed to such education and training and felt confident about their entrepreneurial competencies.

Respondents also showed differences in entrepreneurial competences across racial groups ($F=10.965$, $df_1=4$, $df_2=326$, $p\text{-value}<0.001$). The Indians (mean=3.323) and Blacks (mean=3.492) seemed to be lagging the other races in entrepreneurial competence whilst the Afrikaners leads the pack (mean=4.478). The findings of the current study regarding blacks, white Afrikaner, and are consistent with other research conducted in the South African context, which unravelled ethnic/racial differences across several entrepreneurial attributes (Farrington et al., 2012; Urban & Van Vuuren, 2008; Van Scheers, 2008; Dzansi & Arko-Achemfuor, 2016). However, these findings somewhat contradict some of the results of Arko-Achemfuor and Dzansi's (2016) study which reveals that after white Afrikaners, Indians were one of the most entrepreneurially competent racial/ethnic groups in South Africa.

5.13.2. Effects of academic qualifications on entrepreneurial competence

The ANOVA test results in Table 5.24 reveal that different levels of academic qualifications impacted on the respondents' entrepreneurial competence. The outcome of the study highlights a general pattern where respondents with post-matric qualifications had higher mean scores than those with matric qualifications and below on entrepreneurial competencies. This finding demonstrates the close association between attainment of a higher qualification and possession of certain entrepreneurial

competences. This implies that certain competences can only be secured upon attainment of certain higher qualifications. However, from the Human Capital Theory, education and entrepreneurial competences are often integrated under one construct intellectual capital that is fundamental to firm performance (Zainol et al., 2018) even though they can be considered as purely standalone concepts. Other studies often present education, under what is called entrepreneurial human capital (which include Education, entrepreneurial experience and skills), which they report to positively affect the performance of organizations (Amin, 2018).

However, this finding involving respondents with post-matric qualifications having higher mean scores than those with matric qualifications or below, cements the view that owners/managers of businesses in highly technical and specialised fields should have specialised understanding to prepare them to run their enterprises and acclimatise themselves with the intricate subtleties of technicalities of their industry (Makhalemele, 2016). This resonates with Venter et al., (2008) proclamation that tertiary education is critical to the acquisition of certain competences that positively correlate with entrepreneurs' performance.

Table 5.24: Tests for the effects of academic qualifications on entrepreneurial competence

Response Variable: Entrepreneurial competence		Means		ANOVA Tests			
		N	Mean	F	df1, df2	p-value	Comment
Q5.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				
Q6.Highest level of education at which skills was acquired	High School	138	3.233	18.768	4, 325	<0.001	Significant
	College Certificate	48	4.108				
	Diploma/Degree	78	4.160				
	Post-Graduate	13	3.538				
	Short Courses	53	3.764				
Q7.Highest level of education at which managerial skills was 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				
Q8.Highest level of education at which construction/engineering skills was 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				
Entrepreneurial competence	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				

5.13.3. Effects of nature of business on entrepreneurial competence

The results from Table 5.25 present the effects of various characteristics of the business as they relate to entrepreneurial competence.

Table 5.25: Tests for the effects of nature of business on entrepreneurial competence

Response Variable: Entrepreneurial competence		Ranks		ANOVA Tests			
		N	Mean	H	df1, df2	p-value	Comment
Q10. How long has the business been in operation?	Up to 1 year	10	3.150	27.701	4, 327	<0.001	Significant
	2-5 years	84	3.474				
	6-10 years	128	3.296				
	11-20 years	47	4.482				
	Over 20 years	63	4.230				
Q11. Business activity business engaged in	Civil and Construction	150	3.869	3.575	5, 326	<0.004	Significant
	Electrical Engineering	6	2.611				
	Electrical (EB and EP)	5	3.567				
	Mechanical Engineering	141	3.584				
	Plumbing	18	3.426				
	General Works (GB)	12	3.458				
Q12. Business ownership type/practice	Sole Proprietor	14	3.857	50.945	4, 325	<0.001	Significant
	Partnership	38	4.092				
	Close Corporation	93	4.308				
	Private Company	165	3.110				
	Cooperative Society	20	4.583				
Q13. Number of employees including owner	1-5	70	3.338	18.243	4, 303	<0.001	Significant
	6-20	80	3.517				
	21-30	47	3.709				
	31-40	52	4.295				
	41-50+	59	4.251				

The results from the preceding table reveal that the length of a business' operation as a proxy for the owner/managers' business experience significantly affects the level of entrepreneurial competence. The pattern of variation of the mean scores suggest that respondents from businesses, which had been in operation for the longer periods of time reported higher scores on their owner/manager's entrepreneurial competence than those with newly formed businesses. Hence, the longer the business has been in operation, the more developed the experience of the owner/manager in terms of entrepreneurship and small business management and this contributes to sharpening these individuals' entrepreneurial skills. The outcome cements Mitchelmore and Rowley's (2013) assertion that entrepreneurial competencies are based on qualities emanating from an individual's background and those acquired through real-life business experience.

The results of the ANOVA test, which are presented in Table 5.25, also show statistically significant differences in entrepreneurial competencies and the following factors: type of business activity engaged in and the legal form of business. However, the pattern of the variations in mean scores is not definite and therefore no logical reasons can be advanced to explain the observed differences.

Lastly, there were significant differences in the level of entrepreneurial competencies of respondents from organisations, which employed different numbers of employees. Generally, respondents from organisations that employed greater numbers of employees had significantly higher mean scores for entrepreneurial competence than those with fewer employees. Therefore, greater entrepreneurial competencies correlated with SMMEs, which employed more employees, and *vice-versa*. This correlation can be interpreted in the context of the overlap between general management and entrepreneurial competencies. Management competencies, which involve leadership and motivation of employees, are integral to effective entrepreneurship (Mitchelmore & Rowley, 2008). Put differently, it can be argued that as the firm grows in actual size and the size of its workforce, the range of managerial competencies needed also expands, thus forcing it to develop these competences further. The results corroborate McClelland's (1987) proposition that successful and competent entrepreneurs had higher sales, profits, and number of employees. This view is also confirmed by Ismail's (2014) comparative study on the entrepreneurial competency in selected Indonesian woman micro-, small- and medium-scale entrepreneurs, which revealed some significant differences in certain components of entrepreneurial competencies across entrepreneurs who employed different numbers of employees.

Table 5.26 presents some statistical differences but does not specifically identify the location of these differences. Therefore, a post-hoc analysis was also performed to determine the nature and location of these statistical differences. The results of this analysis are summarised in Table 5.26.

Table 5.26: Post-Hoc Means Groups (Tukey's method)

Response Variable: Entrepreneurial competence		Post-Hoc Means Groups (Tukey's method)				ANOVA Tests			
		N	Group 1	Group 2	Group 3	F	df1, df2	p-value	Comment
Q10. How long has the business been in operation?	Up to 1 year	10	3.150			27.701	4, 327	<0.001	Significant
	6-10 years	128	3.296						
	2-5 years	84	3.474						
	Over 20 years	63		4.230					
	11-20 years	47		4.482					
Q11. Business activity business engaged in	Electrical Engineering	6	2.611			3.575	5, 326	0.004	Significant
	Plumbing	18	3.426	3.426					
	General Works (GB)	12	3.458	3.458					
	Electrical (EB and EP)	5	3.567	3.567					
	Mechanical Engineering	141	3.584	3.584					
	Civil and Construction	150		3.869					
Q12. Business ownership type/practice	Private Company	165	3.110			50.945	4, 325	<0.001	Significant
	Sole Proprietor	14		3.857					
	Partnership	38		4.092	4.092				
	Close Corporation	93		4.308	4.308				
	Cooperative Society	20			4.583				
Q13. Number of employees including owner	1-5	70	3.338			18.243	4, 303	<0.001	Significant
	6-20	80	3.517						
	21-30	47	3.709						
	41-50+	59		4.251					
	31-40	52		4.295					

The categories of the factors with means that are significantly different are put into different groups using Tukey's methods. If any two means fall into different Post-Hoc groups, then they are significantly different. Entrepreneurial competence for businesses, which have been in operation for Up to 1 year (mean=3.150), 6-10 years (mean=3.296) and 2-5 years (mean=3.474) are not significantly different. However, the aforementioned means are significantly different from those who have been in operation for 11-20 years (mean=4.482) and over 20 years (mean=4.230). This clearly supports the claim that the longer the business has been in operation, the more developed the entrepreneurial competences of the owner/manager. The argument is that the owner/managers engage in entrepreneurial learning on competencies as the life of the business increases. This interpretation seems to contradict the view that firms' age is not necessarily the main determining factor but rather that of the entrepreneur, which is related positively with knowledge rather than the success of business (Bosma et al., 2000; Sajilan, Hadi, & Tehseen, 2015).

As far as business activity is concerned, electrical engineering (mean=2.611) has a significantly lower entrepreneurial competence level than civil and construction (mean=3.869). The other business activity types are in the middle and do not significantly differ from the category with the highest entrepreneurial competence level (Civil and Construction) nor from the one with the lowest (Electrical Engineering). One would assume that the number and level of complexity of Civil and Construction projects could explain the need for more entrepreneurial competence than other projects such as electrical engineering. The possibility of working on large and complex projects may expand the demand for the entrepreneurial knowledge, skills and abilities base needed to complete such projects successfully.

As far as business ownership type is concerned, private companies have the lowest level of entrepreneurial competence (mean=3.110), which turns out to be significantly lower than any other business ownership type. Sole proprietor (mean=3.857) is also significantly different from the highest category, cooperative society (mean=4.583). There is no clear explanation for these results. For instance, while one could assume that the vested interest of the female owner/manager in the survival of the business could compel the entrepreneurs to invest in broadening their entrepreneurship competence, it is unclear how cooperative society, which rely on collective interest rather than personal interest per se, would have the highest significance.

As far as the number of employees is concerned, there is a significant difference in entrepreneurial competence between those with more than 30 employees and those with 30 or less. Common sense would dictate that the larger the firm, the wider the skills range required and the complexity of entrepreneurial competence required. This finds support from Chen's (2013) report on a positive relationship between increases in firm size and the skills diversity of co-workers who transform into cofounders of firms.

5.13.4. Effects of business experience and entrepreneurial exposure on entrepreneurial competence

The results for the T-tests for the differences in the mean scores of entrepreneurial competence variable between respondents who had prior entrepreneurial exposure and those who did not showed statistically non-significant results. This can possibly be explained by the fact that all the respondents had experienced running businesses. Hence, whether they had acquaintance who were running a business or not did not significantly affect their entrepreneurial competencies.

Table 5.27: Tests for the effects of business/entrepreneurial exposure on entrepreneurial competence

Response Variable: Entrepreneurial competence		Means		T-Tests			
		N	Mean	t	df	p-value	Comment
Q15.3. Any family member running business?	Yes	119	3.667	-0.301	326	0.764	Not significant
	No	209	3.699				
Q15.4. Any friends running business?	Yes	169	3.650	-0.657	328	0.512	Not significant
	No	161	3.718				
Q15.5. Any personal connection with any other person?	Yes	143	3.777	1.564	327	0.119	Not significant
	No	186	3.613				

5.13.5 Entrepreneurial competence as a mediator of the effect of demographic factors on entrepreneurial success

Table 5.28: Tests for the effects of entrepreneurial capability mediating on demographic factors and entrepreneurial success.

Specific Indirect Effects

Demographic factors -> Entrepreneurial competence -> Entrepreneurial success	0.202
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	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics ((O/STDEV))	P Value
Demographic factors -> Entrepreneurial competence -> Entrepreneurial success	0.202	0.201	0.051	3.967	0.000

Table 5.28 indicates that entrepreneurial competence positively and significantly mediates the relationship between demographic factors and entrepreneurial success. This is shown by a path coefficient of 0.202 and a T-statistic of 3.967. This finding is consistent with the study conducted by Vallabh and Mhlanga (2015) which established that demographic factors such as gender, education and income showed a considerable impact on business success and Sanches (2012) has also affirmed that entrepreneurial competence positively and significantly influences entrepreneurial success. When combined, these studies demonstrate that entrepreneurial competence mediates the relationship between democratic factors and entrepreneurial successes.

5.14. CORRELATIONS AND REGRESSION ANALYSIS OF CREATIVE ABILITIES AND ENTREPRENEURIAL COMPETENCE

The effect of creative abilities on entrepreneurial competence was analysed using correlation and regression analysis since both variables are continuous. The results in Table 5.29 show that taking initiative is not significantly correlated with entrepreneurial competence, ($r=-0.088$, $p\text{-value}=0.111$) and the same applies to adopting change ($r=0.022$, $p\text{-value}=0.695$). This is somewhat surprising given that results from previous

studies have generally shown a close interlink between innovation and entrepreneurial competence, as well as adaption to change and entrepreneurial competence.

These findings could be attributed to the fact that all statements on taking initiative and adopting change recorded low percentages (see Table 5.6 and 5.8), which suggests that the entrepreneurs were risk averse and not much enthusiastic about change and acting differently (i.e. taking initiative). These results are hard to compare to previous studies for two reasons: (1). Some studies have considered creativity and innovation as dimensions or forms of entrepreneurial competences (e.g. Amabile, 1997). For instance, Amabile (1997) speaks of entrepreneurial creativity, which relates to the generation and implementation of novel, appropriate ideas to establish a new venture. Taking creativity as a form of entrepreneurial competency or a component of it makes the creativity- entrepreneurial competency hard to understand. (2) Other studies have made creativity an antecedent of entrepreneurial competency - one moderated by innovation. For instance, Fillis and Rentschler (2010) assert that individual creativity within an organisation contributes to organisational innovation, and organisation innovation together with risk taking and proactiveness are a critical dimension of entrepreneurial competence or what is called entrepreneurial orientation – a strategic orientation of firms.

Table 5.29: Correlations between creative abilities and entrepreneurial competence

Pearson's Correlations (r)		Entrepreneurial competence	Comment
Taking initiative	Correlation	-0.088	Not Significant
	p-value	0.111	
	N	328	
Resourcefulness	Correlation	0.376**	Significant
	p-value	<0.001	
	N	332	
Adopting Change	Correlation	0.022	Not Significant
	p-value	0.695	
	N	329	
**. Correlation is significant at the 0.01 level (2-tailed).			

The results of the current study could be a consequence of the low mean scores and low percentages for taking initiative and adaptability to change (see descriptive

analysis sections Table 5.6 and 5.8). Resourcefulness is significantly correlated with entrepreneurial competence even without controlling for taking initiative and adopting change ($r=0.376$, $p\text{-value}<0.001$). It is logical to assume that an entrepreneur's resourcefulness is critical to the building of one's entrepreneurial competence profile because, from a Resource Based View, the resources individuals bring to their encounter with entrepreneurship are the most critical to the competitiveness of firms (Barney, 1991).

The results in Table 5.30 below show that a consideration of the three variables using regression analysis and hence controlling each other shows a significantly impact on entrepreneurial competence. The results show taking initiative (i.e. acting differently) ($B=-0.145$, $t=-2.822$, $p\text{-value}=0.005$) and adopting change ($B=-0.101$, $t=-1.886$, $p\text{-value}=0.006$) having a negative impact, while resourcefulness has a positive impact ($B=0.435$, $t=8.053$, $p\text{-value}<0.001$). The results show that the ability to take initiative and to adapt to change had a negative effect on entrepreneurial competence. Overall, the negative results seem to contradict the evidence on the positive linkage between creativity and entrepreneurship, which has been revealed by numerous scholars (Elia et al., 2011; Estay, Durrieu & Akhter, 2013; Meldrum, 2008; Penaluna & Penaluna, 2009; Stam & Nooteboom, 2011).

Table 5.30: Regression model of entrepreneurial competence on creative abilities

Dependent Variable: Entrepreneurial competence	Coefficients				
	Unstandardized Coefficients		Standardized Coefficients	t	p-value
	B	Std. Error	Beta		
(Constant)	-0.004	0.050		-0.080	0.936
Creative Abilities- Innovation	-0.145	0.051	-0.146	-2.822	0.005
Creative Abilities- Resourcefulness	0.435	0.054	0.435	8.053	<0.001
Creative Abilities- Adopting Change	-0.101	0.054	-0.102	-1.886	0.060

Table 5.31: Tests for the effects of entrepreneurial capability mediating on environmental dynamism and entrepreneurial success.

Specific Indirect Effects					
Environmental dynamism -> Entrepreneurial competence-> Entrepreneurial success			0.305		
	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
Environmental dynamism -> Entrepreneurial competence -> Entrepreneurial success	0.305	0.302	0.048	6.382	0.000

Table 5.31 indicates the results of entrepreneurial competence’s mediation of the relationship between environmental dynamism and entrepreneurial success. The results revealed that entrepreneurial competence positively and significantly mediates the relationship between environmental dynamism and entrepreneurial success as evidenced by a path coefficient of 0.305 and a T-statistic of 6.382.

5.15. ENVIRONMENTAL DYNAMISM AS A MODERATOR OF THE RELATIONSHIP BETWEEN FORMS OF CAPITAL AND ENTREPRENEURIAL COMPETENCE

This section explores the relationships between forms of capital and entrepreneurial competence with the moderation of environmental dynamism.

A regression model of the four forms of capital sub-constructs, as independent variables, and entrepreneurial competence, as the dependent or response variable, was fitted to the data. Earlier tests (see section 5.13) reveal that social and cultural capital had negative effects on entrepreneurial competence while emotional capital (personality and relational) had positive effects on entrepreneurial competence.

Table 5.32: Regression model of entrepreneurial competence on capital factors with environmental dynamism as a moderator

Dependent Variable: Entrepreneurial competence	Coefficients				
	Unstandardized Coefficients		Standardized Coefficients	t	p-value
	B	Std. Error	Beta		
(Constant)	-0.005	0.040		-0.123	0.902
Social Capital	0.007	0.045	0.008	0.166	0.869
Cultural Capital	-0.040	0.065	-0.043	-0.618	0.537
Emotional Capital - Personality	0.304	0.045	0.310	6.763	<0.001
Emotional Capital - Relational	0.359	0.073	0.373	4.927	<0.001
Environmental Hostility Moderation effects					
Social Capital*Environmental Hostility	-0.289	0.048	-0.335	-6.076	0.000
Cultural Capital*Environmental Hostility	-0.098	0.049	-0.096	-1.999	0.047
Emotional Capital- Personality*Environmental Hostility	-0.164	0.054	-0.188	-3.061	0.002
Emotional Capital- Relational*Environmental Hostility	0.397	0.078	0.384	5.069	0.000

The results presented in Table 5.32 below were obtained after the inclusion of environmental hostility as a moderating variable. The moderating effects were obtained by including new variables, which are products of the four forms of capital and environmental hostility (a type of environmental dynamism) in the regression model. The process of including the new variables, which are products of capital factors, enabled the evaluation of interaction effects of the two groups of independent variables on environmental hostility including the moderating effects of environmental hostility. After adjusting for the moderating effect of environmental hostility, social capital (B=0.007, t=0.166, p-value =0.869) and cultural capital (B=-0.040, t=-0.618, p-value =0.537) were found not to have any significant impact on entrepreneurial competence. The two sub-constructs of emotional capital of personality (B=0.304, t=6.763, p-value<0.001) and relational (B=0.359, t=4.972, p-value<0.001) still maintained a significant impact on entrepreneurial competence even after moderating for environmental dynamism.

What is evident from the above outcome is that the significant moderating effect of environmental hostility weakens the direct effect of various forms of capital on entrepreneurial competence. This finding is consistent with Mura et al.,'s (2014) argument that environmental dynamism sometimes generates ambiguities, complexities and hostilities, which undermine the abilities of managers and owners of business to effectively harness their capital resources for entrepreneurial purposes. For this reason, it is possible to infer that a host of socio-historical, institutional and cultural factors affect the effective application of entrepreneurial competences of South African women entrepreneurs in traditionally male-dominated industries to effectively use their various capital forms to enhance their entrepreneurial competences. These factors include access to credit, stringent borrowing requirements, limited technical support from government institutions, gender biases and discrimination on engineering and construction sites, administrative bureaucracies in processing contracts and late payments for services (see Madikizela & Haupt, 2010, Moodley, 2012; English & Jeune, 2012; Francis, 2017).

5.16. EFFECTS OF PERSONAL FACTORS ON ENTREPRENEURIAL COMPETENCE AFTER CONTROLLING FOR ENVIRONMENTAL DYNAMISM

This section explores the effects of personal factors on entrepreneurial competence after controlling for environmental dynamism. Personal factors are categorical variables while environmental dynamism is a continuous variable. As a result, this relationship was addressed through fitting analysis of covariance (ANCOVA) models with environmental dynamism as a covariate term. In this case, the effects of environmental dynamism are controlled.

The results in Table 5.33 show that before controlling for environmental dynamism, marital status ($F=6.256$, $df_1=3$, $df_2=322$, $p\text{-value}<0.001$) age ($F=3.753$, $df_1=4$, $df_2=294$, $p\text{-value}=0.005$) and race ($F=11.529$, $df_1=4$, $df_2=324$, $p\text{-value}<0.001$) are significant factors affecting entrepreneurial competence. After controlling for environmental dynamism, marital status and age do not significantly affect

entrepreneurial competence, thus environmental dynamism is not a significant control variable (p-values for the control variable are 0.196 and 0.427 respectively). Hence, the exclusion of the environmental dynamism variable has a non-significant effect on the relationship between the independent and dependent variables. The postulation is that this occurs because even before controlling for environmental dynamism race has always had the highest score (see Figure 6.31). This supports the previous literature, which reports higher entrepreneurial competences among white Afrikaners that with other races irrespective of the business environment in which they operated (Farrington et al., 2012; Dzansi & Arko-Achemfuor, 2016).

Table 5.33: Analysis of covariance (ANCOVA) results for the effects of demographic variable on entrepreneurial competence after controlling for environmental dynamism

Response Variable: Entrepreneurial competence								
Independent variables: Demographic Variable	ANCOVA TESTS							
	Covariate or controlling variable: Environment				Main independent Variable tests			
	F	df1, df2	p-value	Comment	F	df1, df2	p-value	Comment
Marital Status	1.680	1, 322	0.196	Not Significant	6.256	3, 322	<0.001	Significant
Age In Years	0.633	1, 294	0.427	Not Significant	3.753	4, 294	0.005	Significant
Ethnic Origin/Race	8.099	1, 324	0.005	Significant	11.529	4, 324	<0.001	Significant

The results in Table 5.34 below show that environmental dynamism is not a significant control variable on the effects of educational background variables on entrepreneurial competence (all p-values of the control variable are greater than 0.05). However, all the test results of the effects of educational background on entrepreneurial competence show statistical significance in concurrence with results presented in section 5.14.2. This means that, on their own, the levels of educational attainment affect entrepreneurship competence significantly. However, when the dynamism of the environment is controlled, the relationship is weakened and hence environmental dynamism is a weak control variable (does not really influence that relationship).

Perhaps the hostility of the environment, already reported with reference to women entrepreneurship, explains the weakening of this relationship. Alternatively, the fact that race is emphasised in the affirmative action approach of BBBEE over age and gender explains the significance of race when environmental dynamism is controlled for.

Table 5.34: Analysis of covariance (ANCOVA) results for the effects of educational background on entrepreneurial competence after controlling for environmental dynamism

Response Variable: Entrepreneurial competence								
Independent variables: Educational Background	ANCOVA TESTS							
	Covariate or controlling variable: Environment				Main independent Variable			
	F	df1, df2	p-value	Comment	F	df1, df2	p-value	Comment
Q5. Highest Academic Qualification	3.798	1, 323	0.052	Not Significant	13.809	5, 323	<0.001	Significant
Q6. Highest level of education at which skills was acquired	0.765	1, 323	0.383	Not Significant	17.544	4, 323	<0.001	Significant
Q7. Highest level of education at which managerial skills was acquired	1.888	1, 324	0.170	Not Significant	9.775	4, 324	<0.001	Significant
Q8. Highest level of education at which construction/engineering skills was acquired	1.166	1, 324	0.281	Not Significant	10.580	4, 324	<0.001	Significant
Q9. Highest level of education at which entrepreneurial skill was acquired	2.065	1, 323	0.152	Not Significant	10.091	4, 323	<0.001	Significant

The ANCOVA test results for the effects of nature of business on entrepreneurial competence after controlling for environmental dynamism are summarised in Table 5.35 below. As can be seen from the table, environmental dynamism is not a significant control variable on the effects of nature of business variables on entrepreneurial competence (all p-values of the control variable are greater than 0.05). Nonetheless, all the test results of the effects of nature of business on entrepreneurial competence

show statistical significance. This demonstrates that considered on their own, business characteristics variables (i.e. type of business, life of the business, number of staff members) all affect the level of competence of the entrepreneur. For instance, the size of business and number of employees has implications for the scale of operations and activities that directly impact the skill complexity and skills range required. There is a positive correlation between the size of a firm and the diversity of skills required to operated it successfully (Chen, 2013). However, environmental dynamism is controlled for, the effect may be insignificant as small businesses may be treated the same irrespective of their duration, type of activities and number of employees.

Table 5.35: Analysis of covariance (ANCOVA) results for the effects of nature of business on entrepreneurial competence after controlling for environmental dynamism

Response Variable: Entrepreneurial competence									
Independent variables: Nature of business	ANCOVA TESTS								
	Covariate or controlling variable: Environment				Main independent Variable				
	F	df1, df2	p-value	Comment	F	df1, df2	p-value	Comment	
10. For how long your business has been in operation?	0.368	1, 325	0.545	Not Significant	26.259	4, 325	<0.001	Significant	
11. Type of business activity	1.191	1, 324	0.276	Not Significant	2.617	5, 324	0.024	Significant	
12. Highest level of education at which entrepreneurial skills was acquired	5.215	1, 323	0.023	Significant	51.517	4, 323	<0.001	Significant	
13. Number of employees including manager/owner	0.839	1, 301	0.360	Not Significant	19.145	4, 301	<0.001	Significant	

The results in Table 5.36 below show that environmental dynamism is a significant control variable on the effects of business experience variables on entrepreneurial competence (all p-values of the control variable are less than 0.05). However, all the test results of the effects of business experience on entrepreneurial competence show statistically non-significant effects in concurrence with results presented in section

5.14.4. These results are surprising as they contradict literature that suggests that having role models, family recognition of venture creation and affiliation to personal/business networks play a critical role in the development of entrepreneurial competences (Morgenroth, Ryan & Peters, 2015; Tarling, Jones & Murphy, 2016; Rambe, 2018). However, the fact that when environmental dynamism is controlled for, the effect of family recognition, role models and social networks on entrepreneurial competence become significant is hard to explain with reference to female entrepreneurs.

Table 5.36: Analysis of covariance (ANCOVA) results for the effects of Business experience on entrepreneurial competence after controlling for environmental dynamism

Response Variable: Entrepreneurial competence								
Independent variables: Business experience	ANCOVA TESTS							
	Covariate or controlling variable: Environment				Main independent variable			
	F	df1, df2	p-value	Comment	F	df1, df2	p-value	Comment
15.3 Are any of your family members running a business?	5.985	1, 325	0.015	Significant	0.5609	1, 325	0.5712	Not Significant
15.4 Are any of your friends running a business?	6.268	1, 326	0.013	Significant	1.5758	1, 326	0.2103	Not Significant
15.5 Do you have a personal connection to any other person?	4.555	1, 325	0.034	Significant	0.7256	1, 325	0.4848	Not Significant

5.17. EFFECTS OF FORMS OF CAPITAL ON ENTREPRENEURIAL COMPETENCE AFTER CONTROLLING FOR ENVIRONMENTAL DYNAMISM

This section explores the effects of forms of capital on entrepreneurial competence after controlling for environmental dynamism. The research question addressed in this section reads:

Which forms of capital have greater effect on the entrepreneurial competence of female owner/managers after controlling for environmental dynamism?

The forms of capital and environmental dynamism are continuous variables derived from items on five-point Likert scales. As a result, the above-mentioned research question is best addressed by fitting a regression model with forms of capital and environmental dynamism as independent variables, and entrepreneurial competence as a dependent variable. Table 5.35 summarises the results of this regression analysis.

Table 5.37: Regression model of entrepreneurial competence on capital factors, controlling for environmental dynamism

Dependent Variable: Entrepreneurial competence	Coefficients				
	Unstandardized Coefficients		Standardized Coefficients	t	p-value
	B	Std. Error	Beta		
(Constant)	0.013	0.039		0.332	0.740
Social Capital	-0.149	0.042	-0.158	-3.509	0.001
Cultural Capital	-0.276	0.050	-0.297	-5.523	<0.001
Emotional Capital - Personality	0.227	0.050	0.233	4.556	<0.001
Emotional Capital - Relational	0.654	0.054	0.679	12.038	0.001
Control variable					
Environmental Hostility	0.010	0.048	0.010	0.205	0.838
R=0.694, R-Square=0.481					

After controlling for environmental dynamism, the effects of forms of capital on entrepreneurial competence do not differ from those obtained earlier, which did not include the control variable (see section 5.13). This means that controlling for environmental dynamism does not significantly affect the way forms of capital affect entrepreneurial competence. In the context of this study, the various forces at play in the operational environments of small-scale female-owned/managed businesses in the construction industry do not have any statistically significant effect on the direct explanatory influence of various capital forms on the development of entrepreneurial competence. This is notwithstanding the documented overarching impact of environmental dynamism on the various facets of entrepreneurship (Ensley, Pearce &

Hmieleski, 2006; Ortega, Requena, Rodrigo, Garcia-Villaverde, 2013; Rambe & Mosweunyane, 2018).

A closer analysis of the impact of the different forms of capital shows that emotional capital (relational) has the highest positive effect on entrepreneurial competence ($B=0.654$, $t=12.038$, $p\text{-value}<0.001$). This is followed by social capital ($B=-0.149$, $t=-3.509$, $p\text{-value}=0.001$) and cultural capital ($B=-0.276$, $t=-5.523$, $p\text{-value}<0.001$) respectively, which have a negative impact. This suggests that the low levels social and cultural capital, which were recorded in this study, hinder entrepreneurial competence (See Tables 5.9 and 5.10). Consistent with the finding that social capital exert a positive statistically significant effect on entrepreneurial competencies (Mamun, Muniady, Permarupan & Zainol, 2016), female entrepreneurs with lower social capital would be expected to have lower entrepreneurial competence compared to those with higher social capital.

5.18. EFFECTS OF FORMS OF CAPITAL ON ENTREPRENEURIAL SUCCESS AFTER CONTROLLING FOR ENVIRONMENTAL DYNAMISM AND ENTREPRENEURSHIP COMPETENCE

This section explores the effects of forms of capital on entrepreneurial success after controlling for environmental dynamism and entrepreneurial competence. The research question addressed in this section is:

What is the relationship between forms of capital and entrepreneurial success after controlling for the environmental dynamism and entrepreneurship competence?

In this case, all variables are continuous and, therefore, regression analysis can be used with forms of capital, environmental dynamism and entrepreneurship competence as independent variables. There are three measures of entrepreneurial success outlined in an earlier section and these are analysed separately.

5.18.1. Entrepreneurial success in general

The results in Table 5.37 show that entrepreneurial competence has no significant controlling effect on the relationship between entrepreneurial success in general and capital factors ($B=-0.104$, $t=-1.723$, $p\text{-value}=0.086$). Nonetheless, environmental dynamism has significant controlling effects ($B=0.117$, $t=2.386$, $p\text{-value}=0.018$).

Table 5.37: Regression model of entrepreneurial success in general on capital factors, controlling for environmental dynamism and entrepreneurial competence

Dependent Variable: Entrepreneurial success in general	Coefficients				
	Unstandardised Coefficients		Standardised Coefficients	t	p-value
	B	Std. Error	Beta		
(Constant)	-0.026	0.040		-0.660	0.510
Social Capital	-0.132	0.044	-0.131	-2.978	0.003
Cultural Capital	-0.197	0.054	-0.196	-3.657	<0.001
Emotional Capital - Personality	0.644	0.053	0.618	12.249	<0.001
Emotional Capital - Relational	0.319	0.068	0.310	4.713	<0.001
Control variables					
Environmental Hostility	0.117	0.049	0.108	2.386	0.018
Entrepreneurial competence	-0.104	0.060	-0.098	-1.723	0.086
R=0.734, R-Square=0.539					

The results also show that after controlling for environmental dynamism and entrepreneurial competence, all forms of capital have significant effect on entrepreneurial success in general (all $p\text{-values}<0.05$). Previous studies also demonstrate that, indeed, environmental dynamism play either a moderating or mediating role for many predictive relationships, which have entrepreneurial success or business performance as a dependent variable (Mura et al., 2014; Omri, 2014; Park & Ryu, 2012; Yu, 2017). Emotional capital (personality) has the highest effect size on entrepreneurial success in general ($B=0.644$, $t=12.249$, $p\text{-value}<0.001$), followed by emotional capital (relational) ($B=0.319$, $t=4.713$, $p\text{-value}<0.001$). In addition, social capital ($B=-0.132$, $t=-2.978$, $p\text{-value}=0.003$) and cultural capital ($B=-0.197$, $t=-3.657$, $p\text{-value}<0.001$) have significant negative impact on entrepreneurial success in

general. The predominance of emotional capital as a key determinant of entrepreneurial success confirms the respondents' adeptness to harness the support of vibrant social networks of relationships to enhance their entrepreneurial success (Gratton & Ghoshal, 2003). This is largely because emotional intelligence has its theoretical roots in social intelligence and disentangling the two has been a severe challenge for researchers (Gardner, 1993; McLaughlin, 2012). Finally, these results cohere with the findings of other studies, which suggest that the emotional capital resource exist in abundance amongst women (Gillies, 2006; Reay, 2006).

5.19. ENTREPRENEURIAL SUCCESS - BUSINESS AND MARKET SHARE GROWTH

The results in Table 5.38 show that environmental dynamism has? no significant controlling effect on the predictor relationship between business and market share growth (i.e. entrepreneurship success) on one hand, and capital factors ($B=0.076$, $t=1.631$, $p\text{-value}=0.104$) on the other. However, entrepreneurial competence has a significant controlling effect ($B=-0.522$, $t=-9.192$, $p\text{-value}<0.001$) on the said relationship. Forms of capital have been reported in literature as having the power to affect entrepreneurial competence while business networks play a critical role in the development of entrepreneurial competences (Morgenroth, Ryan & Peters, 2015, Tarling, Jones & Murphy, 2016). Therefore, it would be logical to expect entrepreneurship competence as having a controlling effect on the success of entrepreneurs.

Table 5.39: Regression model of business and market share growth on capital factors, controlling for environmental dynamism and entrepreneurial competence

Dependent Variable: Entrepreneurial success - Business and market share growth	Coefficients				
	Unstandardised Coefficients		Standardised Coefficients	t	p-value
	B	Std. Error	Beta		
(Constant)	-0.020	0.038		-0.524	0.601
Social Capital	0.205	0.042	0.210	4.912	<0.001
Cultural Capital	-0.402	0.051	-0.417	-7.945	<0.001
Emotional Capital - Personality	-0.365	0.050	-0.360	-7.331	<0.001
Emotional Capital - Relational	0.229	0.064	0.229	3.564	<0.001
Control variables					
Environmental Hostility	0.076	0.046	0.072	1.631	0.104
Entrepreneurial competence	-0.522	0.057	-0.503	-9.192	<0.001
R=0.744, R-Square=0.554					

The results also show that, after controlling for environmental dynamism and entrepreneurial competence, all forms of capital still have significant effects on business and market share growth (all p-values<0.05). Social capital (B=0.205) and emotional capital (relational, B=0.229) have positive effects on business and market share growth while cultural capital (B=-0.402) and emotional capital (personality, B=-0.365) have a negative impact on business and market share growth. These findings on social capital support Santarelli and Tran's (2012) findings on the positive significant influence of social capital on entrepreneurship performance.

However, the result on emotional capital is inconsistent with literature. For instance, it contradicts Veluchamy, Vidya and Rao's (2018) whose study reported that entrepreneurial emotions have a positive relationship with networking and networking is positively related to entrepreneurship performance. The same result also contradicts Fodor and Pintea (2017) who affirmed a positive relationship between positive affect and entrepreneurship performance. Perhaps, the firm owner's emotional investment in the business serves as a liability as it triggers risk averseness arising from fear of failure which has disastrous effects for the business (e.g. business closure, lawsuits by employees).

5.20. ENTREPRENEURIAL SUCCESS – RELATIONAL GROWTH

The results in Table 5.40 below show that environmental dynamism has no significant controlling effect on the relationship between relational growth and capital factors ($B=0.025$, $t=0.485$, $p\text{-value}=0.628$) while entrepreneurial competence has significant controlling effects ($B=-0.359$, $t=-5.879$, $p\text{-value}<0.001$). The former finding is surprising because capital factors (e.g. strong and diverse knowledge base, well developed business and social networks) contribute to successful entrepreneurial behaviour (Kijkuit & van den Ende, 2007; Rosa et al., 2008; Fillis & Rentschler, 2010). As a result, and one would expect this relationship to vary depending on the dynamism of the environment – with more dynamic environments having more dominant effect.

Table 5.40: Regression model of relational growth on capital factors, controlling for environmental dynamism and entrepreneurial competence

Dependent Variable: Entrepreneurial success - Relational growth	Coefficients				
	Unstandardized Coefficients		Standardized Coefficients	t	p-value
	B	Std. Error	Beta		
(Constant)	-0.006	0.041		-0.143	0.887
Social Capital	0.097	0.045	0.096	2.154	0.032
Cultural Capital	-0.515	0.054	-0.513	-9.460	<0.001
Emotional Capital - Personality	-0.297	0.054	-0.282	-5.528	<0.001
Emotional Capital - Relational	0.091	0.069	0.088	1.323	0.187
Control variables					
Environmental Hostility	0.025	0.051	0.022	0.485	0.628
Entrepreneurial competence	-0.359	0.061	-0.333	-5.879	<0.001
R=0.726, R-Square=0.527					

In addition, the results confirm that after controlling for environmental dynamism and entrepreneurial competence, social capital has a significant positive effect on relational growth ($B=0.097$, $t=2.154$, $p\text{-values}=0.032$). Lastly, cultural capital ($B=-0.515$, $t=-9.460$, $p\text{-value}<0.001$) and emotional capital (personality) ($B=-0.297$, $t=-5.528$, $p\text{-value}<0.001$) have significant negative effects on relational growth. Perhaps, the emotional investment in the business, including women's restriction of their authoritative decisions regarding entrepreneurship due to lack of confidence in their

capacities (Vossenbergh, 2013) that negatively affect business growth, could explain these negative results.

5.21. EFFECTS OF PERSONAL AND CAPITAL FACTORS ON ENTREPRENEURSHIP SUCCESS

This section explores the combined effects of personal and capital factors on entrepreneurial success when considered all together. The research question addressed in this section is:

Which combinations of personal and capital factors have greater predictive effect on the entrepreneurship success of these firms?

The independent variables in this case were a mixture of categorical and continuous variables; hence, Analysis of Covariance (ANCOVA) was used. Furthermore, because there were many independent variables considered together, it was not possible to fit a full factorial model hence the main factors only were fitted into the model.

5.21.1. Entrepreneurial success in general

The ANCOVA model assesses the combined effects of personal and capital factors on entrepreneurial success in general when they are included in the model together. The results in Table 5.41 show that demographic variables and all capital factors, except social capital ($F=1.608$, $df_1=1$, $df_2=249$, $p\text{-value}=0.206$) had a significant effect on entrepreneurial success in general. These results somehow support the outcomes from previous studies, which inferred an explanatory relationship between the demographic characteristics of business owner/managers and business performance in general, albeit with varying degrees of effect (Minniti, 2009). However, it is surprising to note the non-significance of the predictive effect of social capital on entrepreneurial success given that many studies conducted in the past largely suggest that the social capital of small business owners has a huge bearing on the success of their business entities (Madikizela & Haupt, 2009; Verwey, 2007; Haupt & Fester, 2012). It is hard

to make a clear pronouncement on the explanation for the observed non-significant effect of social capital. Apart from this slight discordance, the result confirms the impact of owner/managers' demographic characteristics and capital attributes on entrepreneurial success.

Table 5.41: Analysis of Covariance (ANCOVA) model for the effects of personal and capital factors on entrepreneurship success in general

Dependent Variable: Entrepreneurial success in general					
Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	223.155	16	13.947	84.478	<0.001
Intercept	7.529	1	7.529	45.606	<0.001
Marital Status	16.968	3	5.656	34.259	<0.001
Age	32.840	4	8.210	49.728	<0.001
Race	8.585	4	2.146	12.999	<0.001
Social Capital	0.265	1	0.265	1.608	0.206
Cultural Capital	12.705	1	12.705	76.954	<0.001
Emotional Capital- Personality	65.141	1	65.141	394.559	<0.001
Emotional Capital- Relational	5.892	1	5.892	35.687	<0.001
Error	41.110	249	0.165		
Total	265.266	266			
Corrected Total	264.265	265			
R Squared = 0.844 (Adjusted R Squared = 0.834)					

5.21.2. Entrepreneurial success – Business and market share growth

The results in Table 5.42 show that when personal and capital factors are considered together, they all had a statistically significant effect on entrepreneurial success as measured by business and market share growth (all p-values are less than 0.05). The researcher's knowledge suggests that there has never been any exploration of the aforementioned relationships using a sample of respondents from SMMEs' owner/managers in the South African engineering and construction industry. The results from the current study appear to be well substantiated by past studies conducted in other contexts, which propose some degree of association between specific demographic characteristics and capital attributes, on the one hand, and

business performance aspects on the other (Rodriguez, Peterson & Krishnan, 2012; Stam, Arzlanian & Elfring, 2014; Westlund & Adam, 2010).

Table 5.42: Analysis of Covariance (ANCOVA) model for the effects of personal and capital factors on business and market share growth

Dependent Variable: Entrepreneurial success - Business and market share growth					
Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	171.337	16	10.709	54.764	<0.001
Intercept	3.129	1	3.129	16.001	<0.001
Marital Status	17.992	3	5.997	30.671	<0.001
Age	34.009	4	8.502	43.480	<0.001
Race	9.863	4	2.466	12.610	<0.001
Social Capital	2.929	1	2.929	14.979	<0.001
Cultural Capital	0.772	1	0.772	3.950	0.048
Emotional Capital- Personality	19.307	1	19.307	98.735	<0.001
Emotional Capital- Relational	7.445	1	7.445	38.072	<0.001
Error	49.667	254	0.196		
Total	221.024	271			
Corrected Total	221.004	270			
R Squared = 0.775 (Adjusted R Squared = 0.761)					

5.21.3. Entrepreneurial success – Relational growth

The results in Table 5.43 show that when personal and capital factors are considered together, only social capital ($F=0.296$, $df_1=1$, $df_2=253$, $p\text{-value}=0.587$) has no significant effect on entrepreneurial success as measured by relational growth. All other variables have some significant effects on the response variables after controlling for each other (all $p\text{-values}<0.001$). The preceding results mirror those observed when the predictive effect of the independent variables on entrepreneurial success in general was tested. However, it is difficult to establish without doubt why only social capital could have no significant effect on entrepreneurial success when all other variables had a significant effect on entrepreneurial success. Perhaps, it points to the generally underdeveloped social networks of women entrepreneurs operating in male dominated industries. This explains why female entrepreneurs in the construction industry often resort to partnering with male business owners when they

are bidding for construction jobs to overcome the constraints associated with male business owners (Aneke, Derera & Bomani, 2017).

Table 5.43: Analysis of Covariance (ANCOVA) model for the effects of personal and capital factors on relational growth

Dependent Variable: Entrepreneurial success - Relational growth					
Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	208.367	16	13.023	60.843	0.000
Intercept	0.004	1	0.004	0.017	0.897
Marital Status	6.663	3	2.221	10.376	0.000
Age	32.260	4	8.065	37.680	0.000
Race	4.979	4	1.245	5.816	0.000
Social Capital	0.063	1	0.063	0.296	0.587
Cultural Capital	4.108	1	4.108	19.191	0.000
Emotional Capital- Personality	10.000	1	10.000	46.719	0.000
Emotional Capital- Relational	13.236	1	13.236	61.838	0.000
Error	54.152	253	0.214		
Total	262.522	270			
Corrected Total	262.520	269			

a. R Squared = .794 (Adjusted R Squared = .781)

5.22. CHAPTER SUMMARY

This chapter presented detailed results on the demographics, personal and social capital attributes of the engineering and construction industry SMMEs' owner/managers and the nature of their business profile (years in operations, business activities, among other things.). The chapter also discussed the associative and predictive relationships between these foresaid independent variables, entrepreneurship competence and entrepreneurship success. In particular, the study examined the mediating effects of entrepreneurial competencies on personal and capital variable and entrepreneurial success relationships. Lastly, the study examined the moderating effects of environmental dynamism on the relationships between personal demographic, social capital and business variables and the entrepreneurial success of these female owned/managed engineering and construction SMMEs.

The next chapter summarises the key findings discussed in the current chapter and outlines conclusions, recommendations and the theoretical contributions of the study.

CHAPTER 6: CONCLUSION AND RECOMMENDATIONS

6.1. INTRODUCTION

The previous chapter focused on a detailed presentation, and interpretation and discussion on the findings, which have a bearing on this conclusion and recommendation chapter. The previous chapter presented descriptive statistics on personal demographic, personal and business traits, capital forms (predictor variables), entrepreneurial competence (mediating variables) and entrepreneurial success (response variables) and examined the relationships to provide a panoramic picture of the interactions of these variables. The study also examined the mediating and moderating effects of entrepreneurial competence and environmental dynamism respectively of personal demographic, personal and business traits and social capital relationships with entrepreneurship success.

It should be underscored that, the researcher's keen interest in the entrepreneurial success of female entrepreneurs operating engineering and construction SMMEs was precipitated by the growing concern about a range of individual, institutional and systemic level factors that seem to erode the sector's gains in gender parity. Women's individual entrepreneurial success in this industry has been constrained by their limited business awareness of institutions that provide technical, financial and social support (Rambe & Mpiti, 2017; Wasdani & Mathew, 2014; Mpiti, 2016). From a Dynamic Capabilities and Human Capital perspective, female entrepreneurial success has been hampered by lack of confidence in their own abilities, inability to take authoritative business decisions (Vossenber, 2013), and their failure to break the existing glass ceiling constraints (European Commission, 2003; Maree et al., 2008; Vossenber, 2013).

Further perspectives inform the reasons why women entrepreneur success meets with limited success. From an institutional level and Social Capital Perspective female entrepreneurial success has been hampered by limited exposure to various forms of capital (e.g. finance, technical and social networks); gender exclusive and insensitive borrowing requirements from lending institutions; and lack of access to business opportunities (Mpiti, 2016; Rambe & Mpiti, 2017; Wasdani & Mathew, 2014;). Other

constraints include paucity of female role models, at family and institutional levels, running highly successful businesses in these industries (Clarke, Pedersen, Michielsens & Susman, 2005; Madara & Cherotich, 2016). In addition, the General Systemic Perspective postulates that, the impediments to female entrepreneurial success have revolved around constraints in the entrepreneurial system environment, which include persistent gender biases, gender exclusion and limited progress in female participation in this industry and related industries (Blair-Loy et al., 2017; Moletsane & Reddy, 2011; Moodley, 2011). Other systemic concerns include persistent inertia and conservatism in these male-dominated industries as well as an ineffective 'discourse' of gender equality that has failed to trigger equal opportunity policies or programmes (Clarke et al., 2005). Finally, there also exists structural constraints and these include insufficient accommodation of women's unique physical, identity and work-life balance needs (Martin & Barnard, 2013).

Nonetheless, the present chapter recaps the study's research questions, presents conclusions based on empirical findings and synthesised related literature on them and revisits the conceptual framework. This chapter also outlines the contribution of the study to theory, policy and practice, and proposes some recommendations. Finally, the chapter considers the implications for future research, limitations of the study and makes some concluding remarks.

6.2. RECAPPING RESEARCH QUESTIONS

The study addressed the following descriptive and inferential (i.e. relational and predictive) research questions in order to arrive at the conclusion and develop the recommendations:

1. What are the main **personal** and **capital attributes** of successful women who are operating engineering and construction SMMEs in the Free State Province? (*Descriptive question*).
2. How do **personal factors** (i.e. age, owner/managers' educational level, previous exposure to the construction or engineering business, creativity and operational capabilities) facilitate and impede the effective operation of

- female owned and managed engineering and construction SMMEs in the Free State Province? (*Descriptive question*).
3. Which **forms of capital** most influence the **entrepreneurial competence** of female engineering and construction SMMEs' owner/managers? (*Relational question*).
 4. Which **personal demographic factors** are more significant in shaping the **entrepreneurial competence** of female owner/managers? (*Relational question*)
 5. To what extent does **environmental dynamism** moderate the relationship between presage factors (**personal factors and forms of capital**) and **entrepreneurial competence**? (*Relational question testing moderation*)
 6. Which **personal factors** have a greater effect on the **entrepreneurial competence** of female owner/managers operating engineering and construction SMMEs after **controlling for environmental dynamism**? (*Relational question emphasising the role of control variable*).
 7. Which **forms of capital** have greater effect on the **entrepreneurial competence** of female owner/managers after **controlling for environmental dynamism**? (*Relational question emphasising prediction and control variables*).
 8. What is the relationship between presage factors (**personal factors and forms of capital**) and **entrepreneurial success** after **controlling for the environmental dynamism** and entrepreneurship competence? (*Relational question emphasising multiple control variables*).
 9. Which **combinations of personal and capital factors** have greater predictive effect on the **entrepreneurship success** of these firms? (*Relational question emphasising prediction*).
 10. To what extent does **entrepreneurial competence** mediate the relationship between **capital forms** and **entrepreneurial success**.
 11. To what extent does **entrepreneurial competence** mediate the relationship between **demographic factors** and **entrepreneurial success**.

12. To what extent does **entrepreneurial competence** mediate the relationship between **environmental dynamism** and **entrepreneurial success**.

To address these questions, the researcher used the SPSS version 23 to calculate the composite scores for each of the scale variables. Thereafter, descriptive percentage analysis, Pearson correlation analysis, multiple regression analysis, analysis of variance (ANOVA), T-tests, and Analysis of Covariance (ANCOVA) were employed to examine descriptive and inferential statistics covering associative, control and predictive relationships. Having presented the context of the study, the next section provides conclusions arrived at based on the results presented and discussed in Chapter 5.

6.3. CONCLUSION AND CONTRIBUTION BASED ON EMPIRICAL FINDINGS AND SYNTHESISED LITERATURE

6.3.1. Research question 1

*What are the main **personal** and **capital attributes** of successful women who are operating engineering and construction SMMEs in the Free State Province?*

A descriptive percentage analysis was employed to address the above-mentioned research question. This analysis on data determined the following attributes: demographic details, creative abilities and capital attributes. The personal data of respondents, which is presented in Tables 5.1, 5.2 and 5.6 in Chapter 5 lead to the conclusion that most female engineering and construction sector SMME owners and/managers in the Free State Province are married, aged above 40 years, and of black African origin. Various reasons account for the marriage status and age distribution of most of the study's female entrepreneurs in this industry in Free State? These reasons include, resource limitations of most SMMEs (Chipunza, 2019), especially those owned /managed by female entrepreneurs, high capital-intensive nature of engineering and construction businesses, as well as the need to pool resources together for start-up and working capital (Oladinrin, Ogunsemi & Aje, 2012; Unger, Rauch, Frese & Rosenbusch, 2011).

Further observations on age and race are instructive here. The argument concerning the age range was that older and mature entrepreneurs would have accumulated sufficient income, industry and exposure to run their businesses more successfully than younger ones (Daniels, Herrington & Kew, 2016; Rambe, 2019). At the same time, predominance of the Black African racial background of most respondents was explained by the fact that emerging entrepreneurs, supported by the BBBEE's Affirmative Action programmes in tendering and financing, were predominantly from historically marginalised groups and especially the Black African category (Akaba, 2016). The racial dynamic is over and above the fact that most inhabitants of the Free State the study area are predominantly Black African (SEDA, 2016).

Other conclusions were made from the descriptive analysis. These include that most of the women entrepreneurs had at a minimum matric level qualification. Most of the respondents also acquired their technical, managerial and entrepreneurial skills at college certificate level. This coheres with literature on the comparatively lower educational attainments of women compared to men that the same literature presents as accounting for the lower levels of entrepreneurial knowledge (Lusardi & Mitchell, 2014). However, female entrepreneurs' attainment of college education points to the changing gender demographics in Science Technology, Engineering and Mathematics in South Africa. This change arises from the post-apartheid government's multiple affirmative action interventions seeking to promote gender parity and equity and eliminate gender discrimination in these disciplines at college levels (Commission on Gender Equity, 1996; Employment Equity Act, 1998; Madikizela & Haupt, 2010).

In addition, the mean percentage scores for the sub-categories of creative abilities, which are taking initiative, resourcefulness and ability to adopt to change, were 35.75%, 63.35% and 51.45% respectively. This leads to the conclusion that the respondents' creative abilities ranged from low to moderate. These findings generally agree with the evidence from literature on the low entrepreneurial mind-sets of SMMEs in South Africa, which manifest in low to moderate entrepreneurial mind-sets (creativity, risk taking propensity, growth mind-sets) and contribute to high failure rate (Neneh, 2012). Alternatively, these mean percentage scores pointed to different

managers' interpretations of the same business orientations existing in their specific market conditions and circumstances (Mele et al., 2010).

Furthermore, the mean scores for the respondents' capital attributes ranged from below average to above average. The information presented in Tables 5.9, 5.10, 5.12 and 5.13 indicate that social capital had an average score of 35.21%, cultural capital of 34.23%, emotional capital (i.e. personality) of 86.25%, and emotional capital (i.e. relationships) of 52.9%. The conclusion from these results is that the respondents had low social and cultural capital resources. However, they had relatively high emotional capital attributes. The relatively low social and cultural capital of female entrepreneurs finds support from previous research, which affirms the social isolation and limited exposure of women entrepreneurs in engineering and construction research to formal and informal networks (Dainty, Bagihole & Neale, 2000; English & Le Jeune, 2012). The comparatively higher level of emotional investment was attributed to the fact that the women's motive and preoccupation with business survival was one of the prime considerations of women operating in the engineering and construction industry (Dainty & Lingard, 2006; Francis 2017).

6.3.2. Research question 2

What personal factors (i.e. age, owner/managers' educational level, previous exposure to the construction or engineering business, creativity and operational capabilities) facilitate and impede the effective operation of female owned and managed engineering and construction SMMEs in the Free State Province?

The ANOVA test was used to answer this research question. The results of the test showed that the respondents' marital status, age, and race had statistically significant effects [(F=6.428, df1=3, df2=324, p-value<0.001); (F=4.503, df1=4, df2=295, p-value=0.002); and (F=10.965, df1=4, df2=326, p-value<0.001) respectively] on the competencies and operational capabilities of the respondents. The role of present and previous partners and family role models in financial, managerial and technical resource pooling and in developing the business competences of the entrepreneur (Chlosta et al., 2012; Ozaralli & Rivenburgh, 2016) were considered as critical explanations for the significant relationship between marital status and entrepreneurial

competences and operational capabilities. This significant relationship between marital status and entrepreneurial competences can be further explained by the fact that married and divorced women often look for revenue generating strategies to assist their spouses and provide for their families than single women (Mohapatra, 2012; Motsomotso, 2019).

Additional observations relating to age and races were made. There is a positive relationship between age and entrepreneurial and operational competences that is also supported by literature (Daniels, Herrington & Kew, 2016; Islam et al., 2011; Tweneboah-Koduah & Adusei, 2016). The explanation for this significant positive relationship ranged from increased business experience and income to run business successfully as one's age increases (Rambe, 2019) – a clear contradiction of claims about younger entrepreneurs' possession of higher levels of risk taking, opportunity identification and conscientiousness in business decision making compared to older mature individuals (Awa, Emecheta & Ukoha, 2015; Olugbola, 2017). The significant relationship between race and entrepreneurship competence was expected judging from the fact that the study covered emerging contractor firms – which are predominantly Black African due to the pro-black African affirmative action interventions adopted by BBBEE that seek to impart technical and entrepreneurial skills on previously marginalised groups (Akaba, 2016).

Moreover, the respondents' highest educational qualifications and the level at which they acquired their engineering, entrepreneurial and managerial skills also significantly affected their operational capabilities [(F=13.201, df1=5, df2= 325, p-value <0.001); (F=18.768, df1=4, df2=325, p-value <0.001); (F=10.024, df1= 4, df2= 326, p-value<0.001); (F=11.042, df1=4, df2=326, p-value<0.001); (F=10.395, df1=4, df2=325, p-value<0.001)]. This augurs well with the literature on Human Capital Theory literature, which emphasises the significant role of educational attainments (intellectual capital), domain specific skills and expertise in the accumulation of business operation skills and entrepreneurship (Amin, 2018; Zainol et al., 2018).

6.3.3. Research question 3

Which forms of capital most influence the entrepreneurial competence of female engineering and construction SMMEs' owner/managers?

The findings of this study revealed that of all the capital forms, only emotional capital had a positive and statistically significant predictive influence on entrepreneurial competence (See Table 5.22). Emotional capital (relational) accounted for the greatest variance ($B= 0.659$), followed by emotional capital (personality) ($B=0.238$), social capital ($B= -0.158$) and lastly cultural capital ($B=-0.297$). Hence, the conclusion that emotional capital (relational) accounted for the greatest variance in entrepreneurial competence after controlling for environmental dynamism. The strong statistically significant relationship between emotional capital and entrepreneurial competence lends support to literature, which considered emotional capital as a critical component of entrepreneurs' attributes that serve as a source of entrepreneurial capability to deal with business challenges and enhance their resilience when confronted with complex business challenges (Shepherd, 2004). Finally, the evidence on the negative statistically significant relationship between forms of capital (i.e. social and cultural capital) and entrepreneurial competence contradicts prior research that affirms a positive predictive relationship between social and cultural capital and entrepreneurial competence (Glover et al., 2016; Prasad et al., 2013).

6.3.4. Research question 4

Which personal factors are more significant in shaping the entrepreneurial competence of female owner/managers?

The ANOVA and multiple regression analysis tests were carried out in order to respond to this question. The ANOVA test results, presented in Tables 5.23, 5.24 and 5.25, revealed that the personal factors marital status, age, ethnic origin, all dimensions of highest academic qualification and nature of the business, had a significant influence on the entrepreneurial competencies of the respondents. However, a consideration of the average mean scores in conjunction with significance levels indicated that ethnic origin, highest level of education at which construction/engineering skills was acquired and business ownership type had the most significant influence on entrepreneurial competence. The low mean scores for

black Africans and the higher mean scores of for white Afrikaners on entrepreneurial competences were also supported by previous literature that affirms these ethnic/racial differences across several entrepreneurial attributes in the South African context (Urban, Van Vuuren & Owen, 2008; Farrington et al., 2012; Dzansi & Arko-Achemfuor, 2016).

The fact that the highest mean scores for entrepreneurial competence were recorded in highest level of education at which construction/engineering skills was acquired points to two significant issues. First, it indicates the importance of tertiary education in the acquisition of certain competences (Venter et al., 2008) and second, the importance of domain-specific and task-specific skills in the acquisition of highly technical and specialised competences to deal with the complexities of specific industries (Makhalemele, 2016). Moreover, the regression analysis results captured in Table 5.28 lead to the conclusion that creative ability (resourcefulness) had the greatest effect on the entrepreneurial competence of the respondents. The creative abilities (taking initiative) exerted the weakest and negative influence on the respondents' entrepreneurial competence. The relationship between creative abilities (adopting change) and entrepreneurial competence was not significant, respectively. The importance of resourcefulness was reported in Lerner and Almor (2002) who highlighted the importance of intangible organisational resources such as previous experience and familiarity with the industry in the entrepreneurial success of women-owned life-style ventures

6.3.5. Research question 5

To what extent does environmental dynamism moderate the relationship between forms of capital and entrepreneurial competence?

The test results from the regression model featuring entrepreneurial competence as the outcome variable and capital factors as predictors with environmental dynamism as a moderator (see Table 5.30) revealed a statistically significant influence of the moderator. After adjusting for the moderating effect of environmental hostility, social capital ($B=0.007$, $t=0.166$, $p\text{-value}=0.869$) and cultural capital ($B=-0.040$, $t=-0.618$, $p\text{-value}=0.537$) were found not to have any significant impact on entrepreneurial

competence. The two sub-constructs of emotional capital of personality ($B=0.304$, $t=6.763$, $p\text{-value}<0.001$) and relational ($B=0.359$, $t=4.972$, $p\text{-value}<0.001$) still maintained a significant impact on entrepreneurial competence even after moderating for environmental dynamism. A comparison of these results with the correlations in Table 5.21 on capital forms and entrepreneurial competence (without factoring in environmental dynamism), clearly shows that the introduction of environmental dynamism into the model reduced the predictive effect of the capital forms on entrepreneurial competence. Hence, the conclusion that environmental dynamism weakens the relationship between the said predictor and outcome variables. Previous studies examining the mediation role of environmental dynamism on the relationship between economic performance and entrepreneurial orientation affirm that environmental dynamism can impact positively or negatively on performance (Kraus et al., 2012; Neneh, 2016).

6.3.6. Research question 6

Which personal factors have a greater effect on the entrepreneurial competence of female owner/managers operating engineering and construction SMMEs after controlling for environmental dynamism?

The summaries of the ANCOVA test results are presented in Tables 5.31, 5.32 and 5.33. The results show that race and the highest level of education at which entrepreneurial skills was acquired were statistically significant. In addition, the effect of demographic details, nature of business and educational background-related variables on entrepreneurial competencies were not statistically significant when the effects of the environmental dynamism variable were controlled for. However, the effect of previous entrepreneurial exposure and experience on entrepreneurial competencies increased after controlling for environmental dynamism (see Table 5.34). Therefore, the conclusion is that previous entrepreneurial exposure and experience had the greatest effect on entrepreneurial competence. This supports the significance of female prior entrepreneurship experience and prior industry experience in particular contexts within women's entrepreneurial endeavours and success (Chrisman et al., 2012; Manley, 2015; Robb & Watson, 2012).

6.3.7. Research question 7

Which forms of capital have greater effect on entrepreneurial competence of female owner/managers after controlling for environmental dynamism?

The results from the multiple regression analysis (Table 5.34) showed that, after controlling for environmental dynamism, the predictive effects of the different forms of capital on entrepreneurial competence did not differ markedly from those obtained when the control variable was not included. Therefore, it is concluded that Emotional Capital - (i.e. relational) followed by cultural capital exerted the greatest positive and negative influence on entrepreneurial competence respectively. These were followed by emotional capital –personality and social capital respectively. There is a lack of research connecting emotional capital to entrepreneurial competence directly and yet, there is evidence that supporting the view that emotional and financial support within homophilous networks contributes to the withering of storms by institutions such as entrepreneurial families (Hawkins & Maurer, 2010). The negative significant relationship between social capital and entrepreneurial competence contradicts previous research which affirms that social capital exerts a positive statistically significant effect on entrepreneurial competencies (Mamun, Muniady, Permarupan & Zainol, 2016).

6.3.8. Research question 8

What is the relationship between predictor factors (personal factors and forms of capital) and entrepreneurial success after controlling for the environmental dynamism and entrepreneurship competence?

The results showed that, after controlling for environmental dynamism and entrepreneurial competence, all capital forms have significant effect on entrepreneurial success in general (all p-values<0.05). Consistent with these results, previous studies demonstrate that environmental dynamism plays either a moderating or mediating role on many predictive relationships, which have entrepreneurial success or business performance as a dependent variable (Omri & Ayadi-Frikha, 2014; Yu et al., 2017; Park & Ryu, 2012).

6.3.9. Research question 9

Which combinations of personal and capital factors have greater predictive effect on the entrepreneurship success of these firms?

The findings to this question are presented d in Tables 5.39, 5.40 and 5.41. The observations are that combinations of personal and capital factors were regressed on entrepreneurial success in general, entrepreneurial success (business and market share growth), and entrepreneurial success (relational growth).

In addition, it is concluded that the combinations of personal and capital factors, which had the greatest effect on entrepreneurial success (business and market share growth), were gender, marital status, age, social capital, emotional capital-personality, and emotional capital- relational (see Table 5.40). This key finding resulted in the formulation of revised conceptual framework, depicted as Figure 6.1 and is offered as contribution of the current study.

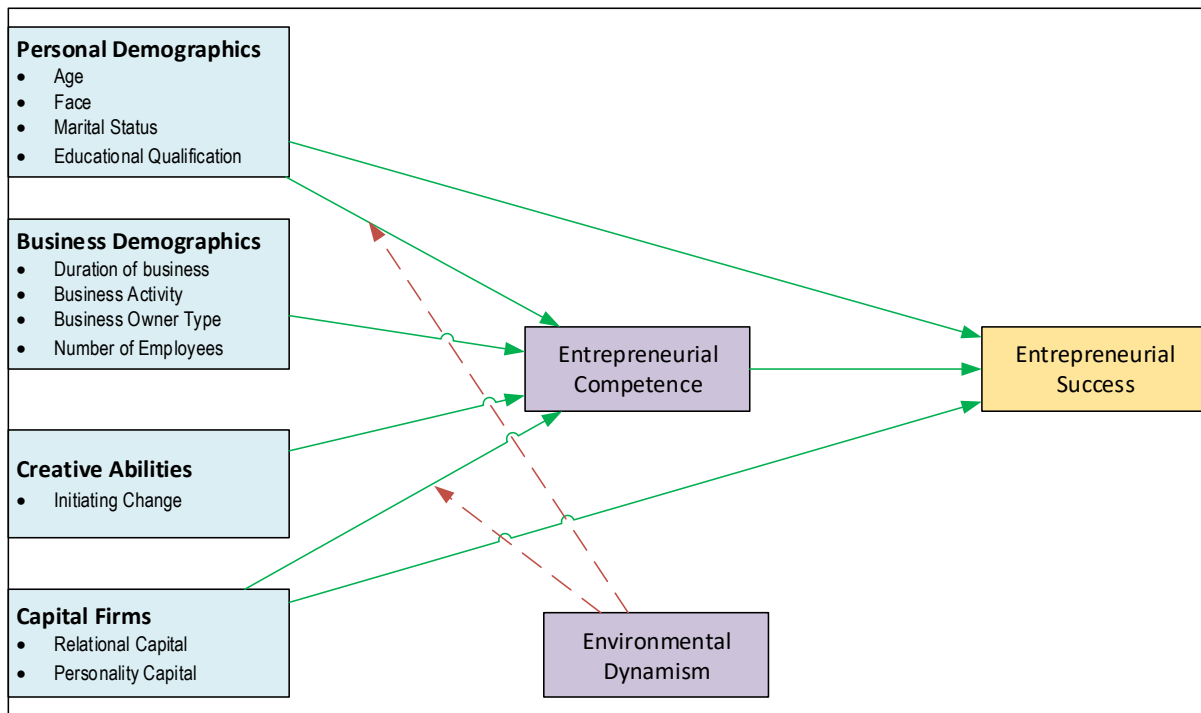


Figure 6.1: Revised conceptual framework

Figure 6.1: Revised model on the relationships between personal variables, business demographics, creative abilities, capital variables and entrepreneurial success: Mediating for competence and moderating for environmental dynamism.

Figure 6.1 demonstrates four types of relationships explored in this study and these are (1) the associative relationships between independent variables (namely personal, business demographics, creative abilities, capital variables) and response variable 1 (entrepreneurial competence) and response variables 2 (entrepreneurial success). (2). The mediation of entrepreneurial competence of foresaid independent variables and response variable 2 (3) the moderation of environmental dynamism on capital forms and demographic factor relationships with competence.

General conclusions arise from the associative relationships. First, that all personal demographic variables (age, marital status, race and educational qualifications) had positive statistically significant correlational associations with entrepreneurial competence. Second, business exposure and business experience had positive and statistically significant relationships with entrepreneurial competence. Third, dimensions of nature of business have positive and statistically significant relationships with entrepreneurial competence. This is a sharp variation from considerations of entrepreneurial competence as an antecedent of entrepreneurial performance (see Zainol et al., 2018). Fourth, and in relation to creative abilities, only resourcefulness had positive associative relations with entrepreneurial competence. Fifth, only personality and relational dimensions of emotional capital had a strong positive relationship with entrepreneurial competence.

There are two main insights from these associative relationships. The fact that only resourcefulness dimension (but not taking initiative and adopting change) of creative abilities had a positive relationship with entrepreneurial competence affirms the Resource Based View's postulation that the capabilities of a firm are as important as the resources that it possesses for entrepreneurial success and performance to happen (Bharadwaj, 2000; Maime, 2019). The strongest capability of the female owner/managers, resourcefulness, found expression in their ability to continually try out new ideas and consider more than one solution to address a problem. The resourcefulness of women was attributed to the organisational context of SMMEs, which is often associated with greater flexibility, agility and exploration of opportunities

facilitated by their compressed and flat organisational structure compared to those of large corporations (Lima, 2017; Mintzberg, 1996; Schumpeter, 1934). It was also attributed, as postulated in the Gender Theories of entrepreneurship, to the uniqueness of barriers women entrepreneurs are confronted with and the unique entrepreneurial choices that they make (Buys & Ledwaba 2012), which necessitate resourcefulness to ensure the survival and sustainability of their businesses. This is an extension of previous research that often consider either a gendered perspective, a capabilities perspective or an institutional perspective to understanding female entrepreneurial success as presented in Chapters 2 and 3.

The fact that only dimensions of emotional capital affect entrepreneurial competence (but not social capital and cultural capital) seems to be inconsistent with literature that suggests that female architects lacks confidence in themselves and critical questioning abilities, which impedes social mobility in their careers (Whitman, 2005). It is clear that women entrepreneurs in male dominated industries were emotionally invested and committed to their businesses just as their male counterparts since they had the motivation and energy to achieve their entrepreneurship goals. In addition, most of their businesses had been in existence for over five years, which boosted both their experience in the industry and emotional confidence in the entrepreneurial success of their business (as most SMMEs have high failure rates in South Africa). This view concurs with existing literature about the reported abundance of emotional capital among females compared to men's (Reay, 2004; Gillies, 2006). The longevity of the women respondents' businesses gave them sufficient and relevant industry experience and exposure, which partially credited these women with high levels of emotional capital. This affirms research findings on work performance antecedents (i.e. proficiency, adaptivity and task proactivity) among engineers, which indicated some positive associations between relationship task proactivity and professional experience (García-Chas et al., 2016).

6.4 THEORETICAL CONTRIBUTION

The study makes four important theoretical contributions. First, the study refutes the highly popularised but polarised dichotomies, such as Liberal Feminism vs Social

Feminism schools of thought, in explaining women entrepreneurship success and failure, in support of an integration of views. The folly of the refuted binaries is that they affirm a “generalised commodity fetishism” (Fine, 2010) where most women’s social encounters with entrepreneurship are reduced to material conditions of access that include lack of access, relevant education, entrepreneurial experience, financial capital) (see Liberal Feminist Theory arguments in Ogunjemilua et al., 2018; Sandra & Michaela, 2015). The binaries weakness is also evident in that they attribute women’s entrepreneurial experiences to the uniqueness of female entrepreneurship choices and unique challenges (see Social Feminism in Adebowale, 2015; Black, 1989; Olaposi et al., 2015). For instance, by emphasising women’s different values and attitudes, the Social Feminism Theory, tends to affirm women as rational and utility maximising human beings (Fukuyama, 2001) who are unfettered by circumstances when in reality, women are just as constrained by situated conditions of imperfect information and resources as men to make rational and satisfactory entrepreneurial decisions. The study reconciles these binaries by appreciating both the constrained ‘satisficing’ decision making positions of women (i.e. their constrained agency when making entrepreneurial choices and when exerting their entrepreneurial competence) and challenging the determinist approach of material conditions of female entrepreneurs through appreciation of women’s volition with regard to entrepreneurship choices.

The study recognised that neither the Social Feminist Theory nor the Liberal Feminist Theory provide a comprehensive account for entrepreneurial success and performance gaps between different gender (Gottschalk & Niefert, 2013). It thus contributes to the closing of these theoretical gender-based binaries by drawing on a three-tier hierarchy of theoretical explanations of women entrepreneurship competence success that is located at the individual, institutional and systemic levels. The study draws, at the individual level, on Human Capital Theories. These theories explain how human capital, intellectual capital and industry and professional experience in the engineering and construction industries, are implicated in the application of different competences and entrepreneurship success of female SMME owner/managers (see Becker, 1964; Gottschalk & Niefert, 2013; Schultz, 1971; Urban & Kongo, 2015). The study also draws on Gender theories to explain the contribution

of female choices and attitudes to entrepreneurship as well the uniqueness of the entrepreneurial experiences they encounter. At the institutional level, the study draws on the Social Capital Theory and Institutional Approach to unpack the nature of the business, the founders' social capital and cultural capital and how they relate to the development of entrepreneurship competence and entrepreneurial success (Bourdieu & Passeron, 1977; Häuberer, 2011). At the systemic level, the study employs the General Systems Theory to demonstrate how environmental factors facilitate and constrain the realisation of entrepreneurial competence and entrepreneurial success of female SMME owner/managers (Lima, 2017; Neneh, 2013; Rambe & Mosweunyane, 2017). In the same vein, Gender Theories are also employed to explain how the gender-based differences in entrepreneurial success are a consequence of differential access to resources, capabilities and capital at the systemic levels. Overall the study demonstrates that each of the theories located at the individual, institutional and systemic levels offer relevant and coherent but partial narratives for explaining entrepreneurial competence and entrepreneurial success and hence the need to integrate them in one comprehensive study.

The second major contribution is that the study contended that women's material conditions, related to entrepreneurship, are not merely conspicuously external (e.g. financial, technical and market penetration support) as claimed by some gender-based literature (see Henry, Foss & Ahl, 2016; Mari, 2011; Nienaber & Moraka, 2016). Instead, the study argues that conditions also involve internal capabilities, such as women's energy, personal resolve, conscientiousness, industriousness and emotional investment, as demonstrated by the findings. The empirical findings and strategic orientation of firms' perspective suggest that, the internal capabilities of an individual entrepreneur remain the most important strategic resource that a small firm possesses and guarantees the success of the firm. For instance, Lerner and Almor (2002) adopt a feminist approach in the study on the management strategies of women-owned businesses and find proactiveness through strategic planning as a critical capability that is positively and strongly associated with the entrepreneurship performance measures of these firms. In addition, a systemic perspective suggests that, while all other resources and provisions (finances, technologies, acquisition of raw materials, engineering and construction by laws and regulations) cannot be internally managed,

the single most important resource at the disposal of the entrepreneur is their internal resources and capabilities (their intellectual capital, their emotional disposition), which are positively correlated with entrepreneurial competence. The study, therefore, demonstrated that a combination of internal resources and capabilities (an endogenous perspective) as well as external facilitating conditions (an exogenous perspective) are all integral to the entrepreneurial competence and success of female owned/managed SMMEs.

The third contribution is that, the study demonstrates that the success of entrepreneurship transcends the integration of internal and external perspectives. The success incorporates a complex amalgam of multiple factors located at the personal, interpersonal and system factors – interacting in dynamic, iterative and often recursive ways. The study draws on *intersectionality*, which discusses the different ways in which power is disseminated in the business environment (Hankivsky & Cormier, 2009), to show how the intersection of resource endowments of female entrepreneurs intersects with race, gender class, and sexual orientations (i.e. identities). It also intersects with their capabilities when they act together, and can assert and affirm some women in traditionally male dominated industries onto specific positions of influence and power (Vardeman-Winter & Tindall, 2010).

Although intersectionality is used by researchers in organisational studies (Benschop & Nkomo, 2010; Zaroni, Janssens,), it is yet to be fully considered in entrepreneurship studies. Thus, the study's bringing in of race, gender, capabilities and resource endowment to explain women's competence and their relative success in entrepreneurship contributes to demonstrating how an assemblage of factors account for women's power and success in entrepreneurship. Research on intersectionality demonstrates the inadequacy of "race"-only or "gender"-only studies in providing a sufficient grasp of female entrepreneurs' conditions of success or oppression (Hurtado & Sinha, 2008; Weber, 2001). Instead, literature demonstrates that the mutual interaction of race, gender, sexuality and class, and resource endowments must be interrogated to unmask their role in establishing and sustaining conditions of subordination and exclusion (Hill-Collins, 1998). Hence, the study's integration of

personal demographic attributes, business attributes, creative capabilities, the various social capital variables, indicates a strong appreciation and application of the intersectionality of realities, experiences and conditions that women find themselves in, during their entrepreneurial encounters. Furthermore, this responds to Orser, Spence, Riding and Carrington's (2010) call for the development of theoretical models on gender in SMMEs that recognise organisational structures, social values, exchanges and cognition, and processes that capture the influences of power relationships on social systems.

Fourthly, the current study is to the researchers' knowledge the first of its kind, which attempted to (1) transcend the entrepreneurship intentions of female entrepreneurs in a developing country context in order to examine antecedents and moderators of entrepreneurial competence and success, and (2) make a concerted effort bring together engineering and construction firms in one integrated and unified study. The previous studies, which have examined common challenges that are unique to women have examined engineering and construction sectors separately (Blair-Loy et al., 2017; Clarke et al., 2005; Clarke & Herrmann, 2007; Maree et al., 2008; Madara & Cherotich, 2016) and did not necessarily emphasise antecedents of entrepreneurial competence as this study does. The studies that focused on the antecedents of entrepreneurial success were not comprehensive enough nor sustained in their coverage of individual, institutional and systemic variables (for example, Manley, 2015). In addition, the studies that attempted to bridge the industry divide by combining several industries tend to emphasise experiences of female entrepreneurs (Clarke & Wall, 2006; Martin & Barnard, 2013; Moalusi & Jones, 2019). Finally, those that examined the entrepreneurship intentions of students did not necessarily focus on women engineering and construction students (Baron, 2007; Zhang, Duisters & Cloudt, 2013; Gielnik, Zacher & Wang, 2018; Shane & Venkataraman, 2000;) notwithstanding the fact that intentions are only an imprecise and indefinite proxy to actual entrepreneurial behaviour. Further to this, entrepreneurship intentions measure what Robichaud, Lebrasseur, Riverin, and Zinger (2005) call entrepreneurial propensity and not the actual entrepreneurial behaviour and outcomes.

6.5 EMPIRICAL CONTRIBUTION

This study contributes to empirical knowledge in several ways. Firstly, the study established that entrepreneurial competence mediates the relationship between antecedent variables (i.e. personal characteristics, business characteristics, capital variables) and entrepreneurial success. This is an extension of the body of research that has examined each of the antecedent variables' relationships with entrepreneurial competence or these variables and entrepreneurship success exclusively without reference to the mediating effect of entrepreneurial competence (DuRietz & Henrekson, 2000; Rambe, 2018; Robichaud, Lebrasseur, Riverin & Zinger, 2005; Tarling, Jones, & Murphy, 2016;). The study was borne out of an understanding that, despite the determining role of antecedents on entrepreneurship success, the reality that literature affirms the strategic role of personal and internal strategic competences, such as entrepreneurial competence in mediating entrepreneurial success, implies that entrepreneurial success is a mediating variable as affirmed in this study.

Secondly, the study demonstrated that moderating the effect of entrepreneurial dynamism on the relationship between the predictor and outcome variables is one of the weakening the influence of capital variables' effect on entrepreneurial success. This work builds on the growing body of literature that considers environmental dynamism as a moderating variable of relationships between antecedent variables and entrepreneurial performance (Kurtulmuşa & Warner 2015; Milovanovic & Wittine 2014; Mura et al., 2014; Neneh, 2016). The finding of this study buttresses literature, which demonstrates that those businesses that function with low financial capital in stable environments tend to perform better entrepreneurially than those that have high access to capital but operating in hostile environments (Kurtulmuşa & Warner, 2015; Milovanovic & Wittine, 2014)- a clear indication of the moderating effects of dynamic environments on entrepreneurial success.

Thirdly, a comparison of this study with previous studies, which focused independently on the effect of a restricted range of factors (e.g. gender, risk taking, family embeddedness, cultural norms) on entrepreneurial performance or success or career success (Gottschalk & Niefert, 2013; Ogunjemilua et al., 2018; Orser, Spence, Riding

& Carrington, 2010; Robichaud et al., 2005) and conducted in-depth systematic reviews (Brush et al., 2009; Henry, Foss & Ahl, 2015), is instructive. The present study developed a multi-level unified framework demonstrating how various factors located at the personal demographic, business level, institutional and systemic factors collectively influenced entrepreneurial success.

Fourthly, the study developed an industry specific model, which is unique to an emerging economy context. To the researcher's knowledge, the study constitutes the first attempt at developing an engineering and construction industry model that recognises the intersection between internal and external variables that are mediated by entrepreneurial competence and moderated by environmental dynamism in determining entrepreneurial success. Lastly, the study proposed and validated constructs for evaluating entrepreneurial success.

6.6 RECOMMENDATIONS FOR POLICY

This study makes various recommendations based on the conclusions drawn from the study findings. The over-arching aim of the study was to develop an in-depth knowledge on the critical success factors and formula for successful female-owned and managed engineering and construction businesses. The outcomes of the study revealed the importance of a range of personal variables and capital forms on the entrepreneurial competencies of selected female managers and/owners of SMMEs involved in the construction and engineering sectors in South Africa. It was also noted that the entrepreneurial competencies affected the entrepreneurial success of SMMEs.

However, the study noted that entrepreneurial competencies and success is moderated by environmental dynamism. The increased involvement of women entrepreneurs in traditionally male-dominated enhances the societal development, thus underlining their economic significance. As a result, there is a clear need for dedicated policy interventions to scaffold the participation of more women in South Africa's engineering and construction business sectors and to enhance their chances of entrepreneurial success amidst a hostile operational environment. In view of these developments, the following recommendations are proposed:

1. Strengthening of social, technical and financial support structures and mechanisms

Evidence from this study highlights that the majority of successful female engineering and construction entrepreneurs who participated in this study were predominantly married, aged above 40, black African and had acquired most of their skills either at high school or lower levels of tertiary education (e.g. at certificate or diploma levels). Therefore, it is critical to enhance the participation of female engineering and construction entrepreneurs who are younger, single, highly qualified, and from the previously disadvantaged groups. The demographic outline, which emerged, cemented some views in literature suggesting that, for female entrepreneurs, marriage status (e.g. being married) brings concomitant stability and support. This marriage status is a vital condition for the formation of new ventures for females such as the safety net of having an employed spouse (Cohen, 1996; Robichaud et al., 2005). Moreover, the assumption is that most of these married couples are operating businesses. Hence, the same finding on married female entrepreneurs would buttress claims that women whose spouses or parents own businesses have higher chances of succeeding as entrepreneurs compared to those without such entrepreneurial families (Sexton & Kent, 1981; Singh, Reynolds & Muhammad, 2001).

Against this background, South African government institutions, such as the Small Enterprise Development Agency (SEDA), Department of Small Business Development, Economic, Small Business Development, Tourism and Environmental Affairs (DESTEA) and the Industrial Development Corporation (IDC) are encouraged to provide alternative social, technical and financial support structures that broaden participation of younger, single, highly qualified, and black African females in the construction and engineering industries. These institutions can increase such participation by developing strong business counselling, mentoring and coaching institutions, such as student business incubators, business simulation modelling, and by lobbying tertiary institutions to develop entrepreneurship programmes that provide a broad range of social, emotional, technical and financial support to aspiring

entrepreneurs. Young, single and aspiring entrepreneurs with bankable business concepts and ideas can acquire these various forms of support that increase their entrepreneurial competence and confidence to pursue entrepreneurship fulltime in their post high school or university education careers.

Business mentoring policies and programmes must target both mentoring and counselling for youth entrepreneurs. While business mentoring and counselling helps these young, single, inexperienced black African prospective entrepreneurs to diagnose and act on current business problems, it also equips them with the ability to handle similar situations independently if they encounter them in the future. In addition, business mentoring spans a relatively longer period than business counselling, which means that an experienced entrepreneur is expected to guide nascent entrepreneurs in the formative phases of business venture development through business pitching competitions/challenges (e.g. Dragon's Den challenge), marketing and business development stages of the business. Such a business creation and development arrangement would then be discontinued once the business mentor and mentee mutually agree that the business had transited survival stages and is on its sustainable growth path.

Business counselling and mentoring arrangements also bestow and reinforce emotional and social capital, which this study reported as fundamental to the development of entrepreneurial competences and coping with environmental hostility in order to enhance the chances of entrepreneurial success. Therefore, identifying and selecting younger female mentors who serve as role models would be integral to setting business case examples that these young female entrepreneurs desire to emulate in pursuit of their entrepreneurial endeavours.

2. Mainstreaming and targeting females in preferential policies

The fact that the majority of emerging female entrepreneurs who were operating engineering and construction firms were black African and Coloured is consistent with the South African Government's Preferential Procurement Policy Framework Act and

Affirmative Action Programme, which seek to increase historically disadvantaged social groups' participation in the male-dominated fields. However, the fact that younger and single females from these racial groups are not participating fully demonstrates the need to intensify their involvement. There is need to target these groups in procurement programmes, financial support programmes and business marketing campaigns. Partnerships between the Department of Public Works, Engineering Council of South Africa and Construction Industry Development Board would develop some targeted interventions that bring these marginalised groups into the mainstream engineering and construction businesses. Such interventions could include developing and applying gender-based quota systems during the provision of financial support of firms in this industry, and targeting female owned/managed engineering and construction businesses during tendering processes in order to increase the visibility of younger female entrepreneurs in this industry.

More gender mainstreaming programmes need to be instituted to remove the male domination stigma, value, sexual orientation and working conditions of the industry. Traditionally, the industry's working environment is characterised by tough competition, constant relocation, and long working hours – conditions that scare young females desiring flexible working conditions such as part-time career opportunities, task-sharing and career breaks for maternity.

3. Using business incubators, innovation and science hubs to leverage young entrepreneurs' entrepreneurial exposure and experience

A sizable percentage (37.3%) of respondents lacked engineering business /construction industry experience. In addition, 40.5% of the respondents lacked business exposure on how to start businesses in these industries while 63.7% did not have family members operating such businesses. Therefore, the broader national policies on developing a broader conducive entrepreneurial ecosystem must focus on developing different forms of business incubation (e.g. business incubators, innovation hubs and science parks). It must also provide safe spaces for young entrepreneurs (including aspiring female entrepreneurs) to experiment with innovative business ideas, improve their exposure and experience in traditionally male dominated business domains such as engineering and construction. While these interventions in business

incubation may require large capital investments and costs, such investments are likely to yield a positive and deep young entrepreneurial culture and enterprising nation.

4. Making social and cultural capital development an integral part of business networking policy formulation

The limited social and cultural capital reported among female entrepreneurs could have undermined their entrepreneurial competencies and ability to cope with the hostile business environment. Therefore, the broader policies on business network development must consider /social and cultural capital formation as an integral part of that process. The policies that support business networking, business collaborations and partnerships can facilitate social and cultural capital development. These policies would encourage emerging SMMEs' joint business marketing, joint ventures in mega project implementation and joint bidding for tenders with established male dominated businesses and large corporations in the industry. This would foster the female entrepreneurs' social and cultural capital base, increase trust by big players and broaden their access to resources and business opportunities. Finally, the business partnerships and collaborations with established large firms in the engineering and construction domains can open up organisational innovation opportunities and enable the sharing of market intelligence for the sustained growth of these SMMEs.

5. Developing policies that foster a conducive entrepreneurial climate

Most respondents felt that the business environment was hostile for business development as evidenced by high failure rate, high competition levels and the capacity of poor decision that threaten the success of the business. In view of this, the South African government policies on business development must foster a conducive entrepreneurial climate where business opportunities are identified, resources marshalled and businesses developed in support of successful entrepreneurship. A policy that supports a conducive business climate would create small businesses that are heavily subsidised by governments in terms of finances, provision of social and technical support. A conducive environment also shields small businesses from competition from established corporations and creates mentorship for small businesses from business conception to the business growth stages. Therefore, an

entrepreneurship ecosystem in which business are supported in all spheres (e.g. financial, technical, market expansion, HR and skills development) guarantees the growth and success of businesses. This is particularly critical in view of the low entrepreneurial success, low business and market share growth reported by most respondents in the study (see Figure 5.16; 5.18; 5.19).

6.7. RECOMMENDATIONS FOR PRACTICE

6.7.1. Embedding creativity and innovation in entrepreneurship programmes

The findings of the study highlighted that respondents' creative abilities ranged from low to moderate. This finding buttressing literature that has indicated that the innovation chasm and dearth of creativity continue to pervade South African entrepreneurial landscape (De Jager et al., 2017). The entrepreneurial curriculum, which is absent at high school and lacks innovation as well as creativity at university level, must be re-curriculated and new programmes introduced to ensure that creativity and innovation become foundational outcomes of such programmes. For instance, the project development stages or dissertation components of programmes must make the development of creative and innovative prototypes, archetypes, products and services fundamental requirements for exiting or graduating students.

6.7.2. Cascade down levels at which entrepreneurial and domain specific skills are acquired

Most female entrepreneurs acquired most entrepreneurship and domain specific skills at high school and lower levels of college education, which suggests a relative spread of these skills across high school and tertiary levels. However, the findings indicate that only resourcefulness was the dominant form of creative capabilities, which demonstrates that creativity and innovation are complex concepts that necessitate higher educational attainments to instil, nurture and sustain. Therefore, fundamental aspects of creativity and innovation need integration into primary, high school and tertiary education to ensure that the pursuit of creativity and innovation is not concentrated at the top echelons of tertiary education. Embedding creativity and innovation elements progressively into all levels of academic endeavour would ensure

that young entrepreneurs acquire these concepts early into their academic careers and build them into their professional careers. Business simulations, business case studies, business competitions, value proposition and prototype development and innovative services must be integrated into the entire school and university curricula to build a strong young population dividend that has a strong creative and innovation mind set.

6.7.3. Inculcate entrepreneurial and enterprising values into families, communities and business partnerships

Compared to emotional capital, the levels of social and cultural capital among the study respondents were disappointingly low and this explains their weak and negative correlations with entrepreneurial competence and entrepreneurial success. Literature demonstrates that social and cultural capital are fundamental to entrepreneurial pursuits (Slotte-Kock & Coviello, 2010; Bhagavatula, Elfring, van Tilburg & van de Bunt, 2010). Literature also confirms that institutions, such as families and communities, are vital sources of social capital and cultural capital formation (Bayat, 2005; Ostrom, 2000; Putnam, 1995; Stone et al., 2002;) and that children and siblings from entrepreneurial families tend to demonstrate higher levels of entrepreneurial behaviours than those from non-enterprising families (Gathungu & Mwangi, 2014; Kirkwood, 2012;). Families and communities must serve as vital reservoirs for the development and fostering of entrepreneurship values, norms and behaviours. The provision of entrepreneurial resource persons that provide expertise and serve as vital links between families and communities for the inculcation of entrepreneurial values is needed to deepen entrepreneurial norms and values at these levels.

The limited social and cultural capital reported among female entrepreneurs could have undermined their entrepreneurial competencies and ability to cope with the hostile business environment. Therefore, building collaborations, partnerships and joint bidding for tenders with established male dominated businesses and large corporations in the industry could foster these female entrepreneurs' social and cultural capital base, and gain them trust from big players and broaden their access to resources and business opportunities. The business partnerships and collaborations

with established large firms in the engineering and construction domains can open up organisational innovation opportunities and enable the sharing of market intelligence for the sustained growth of these SMMEs.

N.B. your recommendations should be based on your findings, not literature. You only use literature/theory to explain your expectations (e.g. hypotheses), not to advance recommendations.

6.7.4. Investment in the emotional capital and education of female entrepreneurs

In view of the strong correlations and predictive relations between emotional capital and entrepreneurial competence, female entrepreneurs are encouraged to invest emotionally in their businesses because such emotional investments affect the development of competences in a positive way. Even after moderating for environmental hostility, emotional capital (i.e. relational and personality) remains positively and significantly related to entrepreneurial competences, which indicates that emotional capital has the potential to enhance the competences of entrepreneurs. Since most businesses had transited their inceptive survival stages, one could argue that business longevity increased business experience and industry of owner/managers and inevitably increased their emotional investment in their businesses as well as contribute to their capacity to design complex solutions for their business and the development of their competence. Therefore, business longevity should be encouraged as a basis for increasing females' emotional investment in their business because this triggers improved business competence

Furthermore, the highest level of education, including different academic levels at which different skills were acquired, positively and significantly correlated with entrepreneurial competence. Therefore, South Africa's higher educational institutions are encouraged to invest in educating female youth to broaden their entrepreneurial knowledge to deepen their entrepreneurial competence.

6.8. IMPLICATIONS FOR FUTURE RESEARCH

Future studies should take a gender-based comparative approach to the way social, cultural and emotional capital relate with entrepreneurial competence and success. This approach will assist in establishing if and the extent to which there could be gender differences between males and females with regard to entrepreneurial competences and success. These studies may need to extend the male and female comparisons to examine how the social construction of gender is implicated in the associative and predictive relations between different capital forms, entrepreneurial competence and entrepreneurial success. The current study did not permit such gender-based comparisons as it was a single gender-based study.

The fact that there were positive associations and predictive relations between dimensions of emotional capital and entrepreneurial competence while there were negative associations between social capital and cultural capital and entrepreneurial competence seems to be inconsistent with the grain of established research. Perhaps, mixed research involving surveys and detailed qualitative studies would provide solid explanations for these mixed results.

Compared to other creative abilities, the taking initiative dimension was comparatively lower than other dimensions (i.e. resourcefulness and adopting change). Further studies could use both surveys and qualitative studies to explain such variance in creative behaviour among female entrepreneurs operating engineering and construction businesses. Male entrepreneurs may need to be incorporated into the study to triangulate evidence from female entrepreneurs.

A limited set of environmental dynamism were considered in the study covering competition levels, price wars, high failure rates of SMMEs and the risky nature of making bad decisions. An expanded view of environmental dynamism in future studies could incorporate other dimensions such as intensity of regulation (over-regulation), policy uncertainty, income and corporate tax regimes, favourability of procurement policy and government payment systems for service delivered by SMMEs to mention a few. These were excluded from the study because the study had multiple variables located at the individual entrepreneur, business level, capital forms, creativity levels

and how they affected entrepreneurial competence and entrepreneurial success (which also had multiple dimensions).

6.9. LIMITATIONS OF THE STUDY

Finally, several important limitations must be taken into consideration to better appreciate this study in its proper context. First, the study was conducted solely in the Free State Province and hence the extrapolation of its findings to other South African provinces, which have a different entrepreneurial culture, business climate, different population and different cultural groupings, may be limited. Therefore, there is no guarantee that the findings from this province can be generalised to other provinces, unless they share similar contextual, socio-cultural, business and entrepreneurial development traits as those reported in this study. In addition, the views elicited may not be sufficiently representative of female owners and managers of engineering and construction SMMEs in the whole of South Africa. This is despite the broad commonalities and similarities of challenges that South African women from historically male-dominated fields face irrespective of their age and racial backgrounds. Further studies on a similar topic can focus on other provinces of South Africa, which are not covered in the present study.

Second, the present study employed a quantitative, cross section survey design to explore the antecedents of entrepreneurial success of women entrepreneurs. Such a methodological approach limits the richness and comprehensiveness of research findings as some findings may be hard to explain and account for. For instance, social desirability of responses can contribute to respondents addressing questions in ways they think the researcher is comfortable with, thereby posing threats to the validity of results. However, all respondents were requested to address all questions as honestly, truthfully and as independently as possible. In addition, the meaningfulness and completeness of the results was guaranteed by the conciseness and precision in phrasing questions and yet the researcher did not have further mechanisms that would make responses free from respondent bias. Hence, future studies can explore the same topic using a qualitative approach in an effort to produce all-inclusive data.

Lastly, the present study focused on a narrow range of individual-related factors as key determinants of entrepreneurial success. Entrepreneurial success is subject to the influence of diverse factors and some these factors may be situationally determined. Although efforts were deliberately made to make the number of relevant and important variables as extensive and comprehensive as possible, no single study can be exhaustive of determinants, mediators and moderators of entrepreneurial success. Finally, the variables covered were comprehensive and as a result, the researcher was conscious of the need to keep the scope of the study manageable by covering a desirable number of variables in order to derive statistical logical deductions and prevent spurious relationships from emerging from the study analysis.

6.10. CHAPTER SUMMARY

This chapter summarised the final deliberations on the relationship between personal demographic variables, business variables, capital variables, environmental dynamism, entrepreneurial competence and entrepreneurial success of women entrepreneurs or managers in the construction and engineering fields. The chapter also recapped the research questions and their respective findings, and presented the theoretical contribution, policy and practical recommendations of the study as well as the limitations of the study and implications for future research.

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APPENDIX A: BIOGRAPHY

Thandeka Brightness Ntshangase currently serves as a Risk Manager in the Department of Human Settlements. Before this appointment, she was a Medical Technologist specializing in Genetics at the National Health Laboratory Services , a position she held for 7 years. Dr Ntshangase, holds a Masters in Business Administration from the Management College of South Africa, B-Tech in Biomedical Technology from Central University of Technology, B-Tech in Project Management from the Central University of Technology, a Postgraduate Diploma in Labour Law from the University of the Free State and a Postgraduate Diploma from the University of South Africa.

Dr Ntshangase co-published an article from her PhD work entitled: Rambe, P and Ntshangase, T.B. 2020. Personal factors, forms of capital and the entrepreneurial competence of female engineering and construction SMME owner/managers in an emerging economy context'. *African Journal of Hospitality, Tourism and Leisure*, Volume, 9(1): 1-28.

APPENDIX B: PROOF OF LANGUAGE EDITING

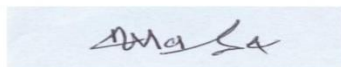
From : I. Manase (PhD UKZN)
10 Laramie
Nienaber Street
Langenhovenpark
Bloemfontein

Date : 04 December 2019

Confirmation of proofreading and editing of Ms. Thandeka Ntshangase's PhD thesis titled "The impact of selected personal and social capital variables on entrepreneurial success: A case of women owned / managed engineering and construction SMMEs in the Free State Province"

This serves to confirm that I have proofread and edited Ms. Thandeka Ntshangase's above-noted PhD thesis. The suggested sentence and language construction changes have been attended to, and as such, the dissertation can now be submitted for examination.

Sincerely,



Email: irimanase@gmail.com / Manasel@ufs.ac.za

APPENDIX C: QUESTIONNAIRE



DEBRIEFING FORM

My name is Thandeka Ntshangase and I am currently undertaking a PhD with the Central University of Technology, Free State. I would like to ask you to take part in my research study, which will take 20 minutes of your time, but before you decide you need to understand why the research is being done and what it would involve for you. The research is on "*The impact of selected personal and social capital variables on entrepreneurial success: A case of women-owned/managed engineering and construction SMMEs in the Free State Province.*" The research is solely for academic purposes and all information obtained will be kept in the strictness of confidence.

Please understand that you are not being forced to take part in this study and the choice whether to participate or not is yours. However, I would really appreciate it if you do share your thoughts with us. If you choose not to take part in answering these questions, you will not be affected in any way. If you agree to participate, you may stop at any time and inform us that you don't want to go on with the completion of the questionnaire. If you do this there will also be no penalties and you will **NOT** be prejudiced in **ANY** way. All ethical matters will be addressed and as such confidentiality will be observed professionally. I will not be asking for your name anywhere on the questionnaire and no one will be able to link you to the answers you give. Only the researcher will have access to the unlinked information. Please note that there are no "right" or "wrong" answers so feel free to share your thoughts with us. The information will remain confidential and there will be no "come-backs" from the answers you give. Findings of the study, however, can be availed to you as per request. **The Research Assistant will help you to answer the questions if it becomes necessary.**

Thank you.

CONTACT ME FOR FURTHER INFORMATION

Thandeka Ntshangase

Tel: 051 405 5213/ Cell: 0784456956

E-mail: thandekatbn@gmail.com

OR

CONTACT MY RESEARCH SUPERVISOR FOR FURTHER DETAILS

Prof P Rambe

Central University of Technology, Free State

Tel: 051 507 4064 / prambe@cut.ac.za

Company Details		Name of Company:			CIDB Reg. No.(CRS No):			
SECTION A: DETAILS OF THE OWNER AND BUSINESS								
Question	Please complete the information about the business and the owner/manager. Please mark the appropriate answer with 'X'.						OFFICE USE	
1	Gender		1 – Male	2 – Female			1	
2	Marital Status	1- Never Married	2- Married	3- Divorced / Separated	4- Widowed		2	
3	Please state your age in years.		1- Below 21 years	2- (21-30 years)	3 - (31-40 years)	4- (41-50 years)	5-(above 51 years)	3
4	Please indicate your ethnic origin/race. Please mark the appropriate answer with 'X'							4
	1 – Afrikaner	2 – Coloured	3 - Black (RSA)	4 - Indian	5 - Other (African)	6 – Other (European)	7 - Other (Asian)	
5	What is your highest academic qualification? Please mark the appropriate answer with 'X'							5
	1 – None	2 - Primary	3 –Matric/ Below	4 – Tertiary certificate	5 - Diploma /Degree	6 - Postgraduate		
6	Indicate the highest level of education at which skills was acquired by ticking the appropriate column for question 6,7,8,&9.							6
	1-High School	2- College certificate	3-Diploma / Degree	4-Post Graduate	5-Short courses			
7	At what highest level of education have you acquired your managerial skills? Please mark the appropriate answer with 'X'							7
	1	2	3	4	5			
8	At what highest level of education have you acquired construction/ engineering skills? Please mark the appropriate answer with 'X'							8
	1	2	3	4			5	
9	At what level of education have you acquired entrepreneurial skills? Please mark the appropriate answer with 'X'							9
	1	2	3	4			5	
10	For how long has the business been in operation? Please mark the appropriate answer with 'X'							10
	1- (up to 1 year)	2- (2 – 5 years)	3- (6-10 years)	4- (11-20 years)		5- (Over 20 years)		
11	What type of business activity is the company engaged in? Please mark the appropriate answer with 'X'							11
	1 – Civil and Construction	2 –Electrical Engineering	3 – Electrical (EB and EP)	4 – Mechanical Engineering	5 – Plumbing		6 – General Works(GB)	

12	What form of business ownership do you practise? Please mark the appropriate answer with 'X'					12					
	1- Sole proprietor	2- Partnership	3- Close Corporation	4- Private Company	5- Cooperative society						
13	Number of employees including owner/manager? Please mark the appropriate answer with 'X'					13					
	1- (1-5)	2- (6-20)	3- (21-30)	4- (31-40)	5- (41-50 +)						
14	Previous business/Construction industry experience					14					
14.1.	Are you currently employed within the construction industry?			1-Yes	2-No	14.1.					
14.2.	Have you ever been employed within the construction industry?			1-Yes	2-No	14.2.					
15	Prior Entrepreneurship Exposure					15					
15.1.	Have you ever tried to start a business before?			1-Yes	2-No	15.1					
15.2.	Are you currently running a business?			1-Yes	2-No	15.2.					
15.3.	Are any of your family members running a business?			1-Yes	2-No	15.3					
15.4.	Are any of your friends running a business?			1-Yes	2-No	15.4.					
15.5.	Do you have a personal connection to any other person			1-Yes	2-No	15.5					
SECTION B: CREATIVE ABILITIES											
	Please indicate the extent to which you agree or disagree with the following statements regarding the business. Please mark the appropriate answer with 'X'					Strongly disagree	Disagree	Neutral	Agree	Strongly agree	OFFICE USE
16	I usually consider more than one solution to address a problem in my day to day activities.					1	2	3	4	5	16
17	I enjoy trying out new ideas in my daily activities.					1	2	3	4	5	17
18	I purposefully seek problems where nobody else sees any.					1	2	3	4	5	18
19	I always adopt new ways of doing things even if I am not sure about the outcome.					1	2	3	4	5	19
20	I am willing to try any new method of working even if there is a chance it could fail.					1	2	3	4	5	20
21	I have purposefully mastered some creativity techniques, e.g. brainstorming.					1	2	3	4	5	21
22	I easy make connections between trends in the environment and opportunities for improvement in my life.					1	2	3	4	5	22
23	I continuously look at old problems with a fresh mind-set.					1	2	3	4	5	23

SECTION C: SOCIAL CAPITAL								
Please indicate the extent to which you agree or disagree with the following statements regarding the business. Please mark the appropriate answer with 'X'		Strongly Disagree	Disagree	Neutral	Agree	Strongly agree	OFFICE USE	
24	Our business maintains close relationships with contacts.	1	2	3	4	5	24	
25	We know our contacts on a personal level.	1	2	3	4	5	25	
26	Our relationship with contacts are characterized by mutual respect, trust and reciprocity between the parties.	1	2	3	4	5	26	
27	The exchanges of resource, information, and so on, among our contacts usually have a similar content.	1	2	3	4	5	27	
28	The contacts from which we receive advises, information or whatever element for making important decisions know each other, that is, they maintain relationships among them	1	2	3	4	5	28	
29	We share that same ambition and vision as our contacts	1	2	3	4	5	29	
SECTION D: CULTURAL CAPITAL								
Please indicate your opinion regarding each statement. Please mark the appropriate answer with 'X'		Strongly Disagree	Disagree	Neutral	Agree	Strongly agree	OFFICE USE	
30	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	1	2	3	4	5	30	
31	In getting a job done, I celebrate cultural difference.	1	2	3	4	5	31	
32	At parties with people from diverse cultural backgrounds, I maintain my own style.	1	2	3	4	5	32	
33	In my daily work, I prefer a job in a culture that is different from my own	1	2	3	3	5	33	
34	When thinking about understanding people from different cultures, I am an expert	1	2	3	4	5	34	
35	I view myself as having lots of cultural expertise	1	2	3	4	5	35	
36	When it comes to knowing how to cope with cultural diversity, other say I am very knowledgeable	1	2	3	4	5	36	
SECTION E: EMOTIONAL CAPITAL								
Please indicate your opinion regarding each statement. Please mark the appropriate answer with 'X'		Strongly Disagree	Disagree	Neutral	Agree	Strongly agree	OFFICE USE	
37	I am aware of how my own emotions affect my behaviour and the emotions on others	1	2	3	4	5	37	
38	I have confidence in my skills and abilities.	1	2	3	4	5	38	
39	I believe that I am self-directed and can make independent decisions.	1	2	3	4	5	39	
40	I believe that I possess enough energy and motivation to achieve my professional and personal goals .	1	2	3	4	5	40	
41	I believe that I can communicate clear, straightforward messages while respecting the views of others	1	2	3	4	5	41	
42	I believe that I can listen well, understand and appreciate the thoughts and feelings of others	1	2	3	4	5	42	
43	I believe that I can maintain composure, think rationally under stress, and keep negative emotions under control	1	2	3	4	5	43	
44	I am open to new ideas and can easily adapt to change	1	2	3	4	5	44	
45	I can see opportunities and am resilient in the face of setbacks	1	2	3	4	5	45	

SECTION F: ENVIRONMENTAL HOSTILITY									
	Please indicate the extent to which of the following statement is true or untrue in so far as it reflects the environment in which your business is operating in. Please mark the appropriate answer with 'X'	Very Untrue	Slightly untrue	Neutral	Slightly true	Very true	OFFICE USE		
46	The failure rate of business in this industry is high	1	2	3	4	5	46		
47	It is very risky that one bad decision may threaten the existence of a business	1	2	3	4	5	47		
48	Competitive intensity is very high	1	2	3	4	5	48		
49	Customer loyalty is low	1	2	3	4	5	49		
50	Severe price wars are characteristic of my industry	1	2	3	4	5	50		
SECTION G: ENTREPRENEURIAL COMPETENCE									
	How do you rate yourself on the following entrepreneurial competence? Please mark the appropriate answer with 'X'	Poor	Fair	Average	Good	Excellent	OFFICE USE		
51	Ability to identify the product that your customer wants.	1	2	3	4	5	51		
52	Ability to seize quality business opportunities.	1	2	3	4	5	52		
53	Ability to take a concept and make something out of it.	1	2	3	4	5	53		
54	Ability to perceive unmet customer needs.	1	2	3	4	5	54		
55	Ability to actively look for products and services that provide real benefit to customer.	1	2	3	4	5	55		
56	Ability to scan the business environment to look for business opportunities.	1	2	3	4	5	56		
SECTION H: ENTREPRENEURIAL SUCCESS									
	How would you describe the success of your business? Please mark the appropriate answer with 'X'	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	OFFICE USE		
57	The business is very successful today	1	2	3	4	5	57		
58	The business has been profitable during the last financial year.	1	2	3	4	5	58		
59	The business has grown over the past two years.	1	2	3	4	5	59		
60	The sales of the business have increased over the past two years.	1	2	3	4	5	60		
61	The size of the business' workforce has grown over the past two years.	1	2	3	4	5	61		
62		1	2	3	4	5	62		
With reference to your business performance over the past 12 months, to what extent are you pleased with the following achievement of your firm? Please mark the appropriate answer with 'X'									
		Very pleased	Pleased	No opinion	Unpleas ed	Very unpleas ed	OFFICE USE		
63	Sales						63		
64	Gained Profit						64		
65	Number of employees						65		
66	Respect from customers						66		
67	Market share						67		
68	Personal satisfaction						68		
69	Career progress						69		

70	Customer satisfaction							70	
71	Customer retention							71	
72	Employee satisfaction							72	
73	Relationship with supplier							73	
74	Business image							74	
75	Industrial relation							75	

THANK YOU VERY MUCH FOR YOUR TIME. GOD BLESS.