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Factors Influencing Entrepreneurship in the South African Construction Industry

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WITS Business School

Research report presented in partial fulfilment for the degree of Master of Business Administration to the Faculty of Commerce, Law, and Management, University of the Witwatersrand

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DECLARATION

I, Sanele Maluleke, declare that this research report entitled *'Factors influencing Entrepreneurship in the South African Construction Industry'* is my own unaided work. I have acknowledged, attributed, and referenced all ideas sourced elsewhere. I am submitting it in partial fulfilment of the requirements of the degree of Master of Business Administration at the University of the Witwatersrand, Johannesburg. I have not submitted this report before for any other degree or examination to any other institution.

Sanele Maluleke

Signed at Johannesburg on

30 April 2021

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This research is dedicated to my beloved family, my husband, Dumisani Maluleke, for his endearing love and support and my two children, Thingolwenkosazane and Milisuthando, for sacrificing quality time with their mother.

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ABSTRACT

Author:	Sanele Maluleke	**Supervisor**	Azwifarwi Phuravhathu
Report title:	*Factors influencing entrepreneurship in the South African Construction Industry*		

The unemployment rate in South Africa is at its highest and it has been noted that SMMEs are needed to stimulate job creation. The construction industry is a major contributor to the economy with the contracting industry spearheading the absorption of unskilled and skilled labour. The National Development Plan of 2030's deadline is approaching and its target to reduce employment is far from being reached by various sectors (which include the construction sector) that were earmarked to create jobs. This problem requires an in-depth look at the factors influencing entrepreneurship in the construction industry. A quantitative method was adopted to gather data from over 1000 sampled respondents who were contractors registered with the CIDB. The findings of the study revealed that internal and external factors have an influence on entrepreneurship equally with neither having any significant impact on the success of an entrepreneur but when looked at separately the two external factors that Influence success were access to funding and the supportive environment and the two internal factors were innovation and creativity. The internal and external factors have an equal influence on the reasons why construction companies are formed were. The findings also showed a positive relationship between age and the success of an entrepreneur.

Keywords: Entrepreneurship, Construction, Internal Factors, External Factors, Contractors, Youth

1. INTRODUCTION TO THE RESEARCH

1.1 The Construction Industry

Activities, such as planning, design, construction, maintenance and the subsequent demolition of buildings and the common infrastructure are all general characteristics of the construction industry and its contribution to the economy (Pillay & Chengedzai, 2017). According to Windapo and Catell (2011, p. 1) “The construction industry is portrayed into the following different sectors:

Professional services sector

- Contracting sector
- Public sector
- Finance and Investment sector
- Material manufacturers and supply sector
- Equipment manufacturers, supply and hire sector”

This industry plays a major role in the economy of any nation (Staniewski, Nowacki, & Awruk, 2016), and was reported by the McKinsey Global Institute (MGI) (2017) to “having had one of the largest in the world economy, with about $10 trillion spent on construction-related goods and services every year” (McKinsey Global Institute, 2017). There is no doubt that the sector is vital as it provides the physical infrastructure that is the backbone of economic activity in South Africa (CIDB, n.d.-a)It is also a large-scale provider of employment opportunities. However, the construction industry has been experiencing difficulties going as far back as the late 1960s. It has been inundated with poor productivity and a declining economy, contrasting with other sectors that boosted productivity by innovating over the decades while the construction industry has contracted due to lack of innovation (McKinsey Global Institute, 2017). Low levels of investor and business confidence, high interest rates, declining levels of public-sector expenditure on infrastructure and a slowing economy were also reported by Odendaal (Odendaal, 2020), citing Research and Markets (2020).To add to that, the Covid-19 pandemic has cast an even darker shadow on the construction industry, especially the contracting sector

that had to cease operations on construction sites due to the levels of lockdown that were enacted by the South African government.

Levels of unemployment and poverty in developing countries are extraordinarily high and the construction industry has been identified by the National Development Plan (NDP) as forming part of the solution to ease these challenges in South Africa (National Planning Commission, 2012).

Entrepreneurship is the vehicle needed by the construction industry to address the challenges facing developing countries, South Africa included (Maas & Herrington, 2015). However, the growth and sustainability of construction SMMEs is low due to lack of infrastructure spending by both the public and the private sector.

The Construction Industry Development Board (CIDB) was commissioned by government to regulate the contracting sector through contractor grading designations and development initiatives. Combined with relevant industry research which monitors the performance of contractors and the industry at large, the CIDB functions as a risk mitigating tool for public sector clients. Contractors who wish to work for the government are required to register on the CIDB Register of Contractors (RoC) and comply with its requirements as it is the only registering and grading system of contractors in the country (CIDB, 2015). The Register of Contractors (RoC) was established by Section 5 (1) (d) of the Construction Industry Development Board Act (Act 38 of 2000). Contractor grading classification is determined through financial and works capability of entities. Financial capability relates to the financial history or turnover of a firm, and the amount of working capital a contractor can gather to sustain a contract. The grading classification criteria is represented in Table 1:

Table 1: Contractor classification criteria

GRADE	MAXIMUM VALUE OF CONTRACT	LARGEST CONTRACT COMPLETED IN THE PAST 5 YEARS
1	R200 000	No Requirement
2	R650 000	R130 000
3	R2 000 000	R450 000
4	R4 000 000	R900 000
5	R6 500 000	R1 500 000
6	R13 000 000	R3 000 000
7	R40 000 000	R9 000 000
8	R130 000 000	R30 000 000
9	No Limit	R90 000 000

This study focuses on the contracting sector which consists mainly of the general building and civil engineering contractors. Contracting is believed to have low barriers to entry for starting a business within the construction industry, however most of the entrants find themselves stuck and unable to move up from grade 1 (CIDB, 2015).

1.2 Business Rationale and Significance of the research study

Unemployment is one of the major crises faced by South Africa and has contributed to the unequal society in which we live today. The unemployment rate stood at 30.8% in the 3rd quarter of 2019 (Statistics South Africa, 2020), in addition the NDP 2030 has set a goal to have this percentage down to 6% by the year 2030 (National Planning Commission, 2012). The construction industry has been earmarked as one of the industries that will be a major contributor to easing the plight of unemployment in South Africa (National Planning Commission, 2012) as it has been recognised for being an important job creator which boasted the creation of 483 000 jobs in the third quarter of 2019 (CIDB, 2019). The industry is also known for being an auxiliary

contributor to the economies of other sectors, such as manufacturing, mining, transportation, real estate and business services (CIDB, 2019).

The extent of youth unemployment in South Africa is a serious issue with the youth forming a large part of the broad unemployed and discouraged work-seekers. The alarming number of unemployed youths includes graduates from higher education institutions (Graham & Mlatsheni, 2016). Furthermore, in research findings by Shay and Wood (2004), as cited in Isaacs, Visser, Friedrich and Brijlal (Isaacs et al., 2007), young South Africans were ranked high when it comes to believing significantly less in themselves as business starters, compared with similar developing countries, such as Argentina, India, Brazil, and Mexico.

The significance of the research is evident; there is a desperate need to establish an entrepreneurship-enabling environment within the construction sector, provided the immense benefits of entrepreneurship in terms of reducing unemployment and alleviating poverty in South Africa. (Rukuižienė, 2016) studied business creation and development in Ghana. The study revealed that factors such as management experience, access to finance, administrative and regulatory frameworks, business assistance support, and social and cultural attitude can pose obstacles to operating businesses. Furthermore, Nieman and Nieuwenhuizen's (2003) model of entrepreneurship as cited in Mwatsika (2015a) has an entrepreneurship development model (see Fig 1 below) that includes these and other factors as hindering entrepreneurs' success and sustainability. The author categorised the factors into two groups; internal factors (entrepreneurial orientation) and external factors (supportive environment and co-operative environment), these factors or environments can affect the performance of small businesses either positively or negatively.

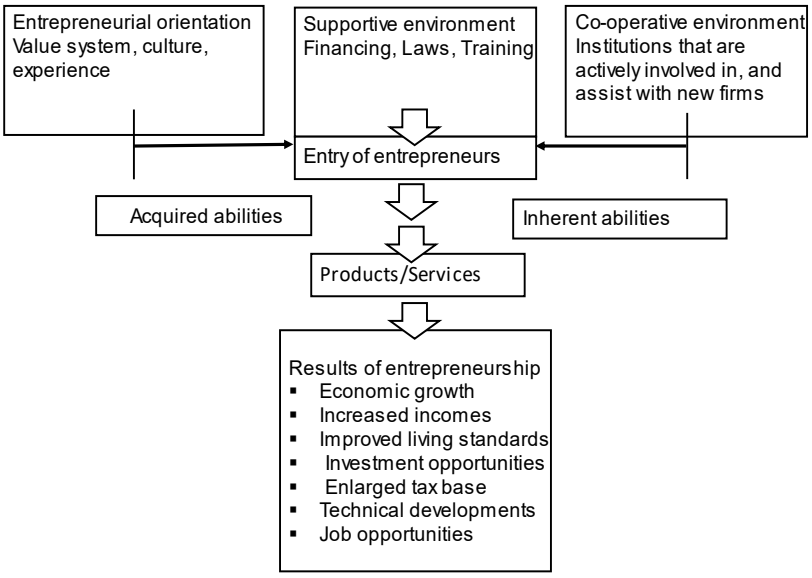


Figure 1. Entrepreneurship Development Model

Consequently, a more comprehensive understanding of the role that internal (entrepreneurial education, culture, work experience, innovation, risk-taking, opportunity recognition and competitive aggressiveness) and external factors (mentorship, training, family and role model, government regulations and location of business) play in influencing the entrepreneurial success of contractors and their reasons for venturing into construction is imperative, as well as determining the relationship between age and the success of these entrepreneurs is required.

1.3 Research conceptualisation

1.3.1 The research questions

1.3.1.1 Is there any difference between how the internal and external factors influence the success of an entrepreneur?

1.3.1.1.1 Do any of the external factors influence the success of an entrepreneur?

1.3.1.1.2 Do any of the internal factors influence the success of an entrepreneur?

1.3.1.2 Is there any difference between how the internal and external factors influence the entrepreneurs' reasons for starting a business?

1.3.1.3 Is there an association between the success of an entrepreneur and the different age groups of the entrepreneurs?

1.4 The research purpose statement

The objective of this study is to determine whether the factors identified in the literature review are associated with the success of construction SMEs, particularly contractors. The study also identifies the reasons behind the formation of construction companies and whether age plays a significant role behind the entrepreneurial success of contractors. This is a quantitative study, tested amongst a group of CIDB registered contractors using questionnaires.

Hypotheses

1.4.1.1 Hypothesis 1: There is a significant difference between the influence of internal and external factors on the success of an entrepreneur.

- **Sub-Hypotheses**

  1.4.1.1.1 Hypothesis 1.1: At least one external factor significantly affects the success of entrepreneur.

  1.4.1.1.2 Hypothesis 1.2: At least one internal factor significantly affects the success of entrepreneur.

1.4.1.2 Hypothesis 2: There is a difference between the influence of internal and external factors on the reasons for starting a business for contractors.

1.4.1.3 Hypothesis 3: There is an association between the success of an entrepreneur and the different age groups of the entrepreneurs.

1.5 Delimitations of the study

The scope of the research will be as follows:

- This study will only focus on CIDB registered contractors as entrepreneurs.
- This study will not look at the contractors regulated by the National Home Builders Registration Council (NHBRC).

1.6 Assumptions

- All the participants of the research are the owners of the entities registered as contractors.
- The participants fully understand the questions contained in the data collection instrument.
- The participants of the research responded to the questions truthfully and without any preconceptions.

1.7 Preface to the research report

To this end, the report has six chapters. Following this introductory chapter:

Chapter 2 provides a literature review covering the problem, the past studies, the explanatory framework, and the conceptual framework.

Chapter 3 discusses the research methodology, data analysis and collection.

Chapter 4 and Chapter 5 present and discuss the findings, respectively, to interrogating the research questions

Chapter 6 summarises and concludes the research.

2.LITERATURE REVIEW

2.1 Introduction

Entrepreneurship is a form of leadership which has been in existence for many years around the world. It has played a significant role in shaping the world's economic history with many business historians acknowledging its contribution to the Industrial Revolution and the growth of international business (Casson & Casson, 2014). Extensive studies have been done on entrepreneurship that are rooted on the theories shaped by economists, such as Cantillon (1730), Schumpeter in (1934) and Drucker (1985) (Mwatsika, 2015a)

According to (Venter, n.d.), "Defining entrepreneurship, however, given its multidisciplinary nature, is particularly complicated. Given the number of different perspectives, it is therefore not incomprehensible that no single definition of entrepreneurship, or indeed, of the entrepreneur, exists." Nonetheless, some describe it as the process of opportunity recognition which involves creating value and acting on this opportunity by forming a new entity or developing an existing one. The modern method of describing entrepreneurship considers the function, role, personality, and the specific behaviour of the entrepreneur (Casson & Casson, 2014).

An entrepreneur is defined as having a vision for doing things differently, thinking beyond their current limitations and circumstances (Gautam & Singh, 2015). The authors further described entrepreneurs as having the passion and urgency that literally forces them to take the risks necessary to turn their vision into a reality(Gautam, Manish & Singh, Sunil, 2015).

The previous chapter introduced the theme of factors influencing entrepreneurship through Nieman and Nieuwenhuizens' (2003) entrepreneurial development model in South Africa and justified the significance of the study. This chapter reviews the theoretical base and

literature regarding factors influencing entrepreneurship. The factors identified have been split into two categories: internal and external.

2.2 Internal Factors

Internal factors are made up of factors which can be controlled; these factors are inherent or acquired through learning by the entrepreneur. Entrepreneurial orientation refers to the internal processes of a business and the individual that is crucial for the sustainability and success of entrepreneurs. These include entrepreneurship education, culture, work experience and the entrepreneur's personality traits (innovativeness, risk-taking, opportunity recognition and competitive aggressiveness). This section looks at how these internal factors can influence entrepreneurship and business performance.

2.2.1 Entrepreneurship education

Premand, Brodmann, Almeida, Grun, and Barouni (2016) define "entrepreneurship education in a wide sense as any pedagogical programme or process of education for entrepreneurial attitudes and skills, which involves developing certain personal qualities". Gautam and Singh **(**2015**)** define entrepreneurship education as the process of professional application of knowledge, attitude, skills, and competencies. This form of education is more than teaching students how to become self-reliant entrepreneurs, it encompasses the development of entrepreneurial traits and behaviours.

However, Karimi, Chizari, Biemans and Mulder (2010), as cited in Chimucheka (2014), are of the view that, "entrepreneurship education tries to prepare people to be responsible, to take risks, to manage the business and to learn from the outcomes by immersing themselves in real-life learning experiences." This argument amongst researchers of whether entrepreneurship can be taught or is best learned through personal experiences (Massey, 2004 & Kunene, 2008 as cited in Chimucheka, 2014) puts the younger contractors who dominate the lower CIDB grades at a disadvantage because most of them lack the experience of running a business(CIDB, 2015) .

The CIDB (2011) developed a *Requirements for Contractor Competence Assessment* tool which would be used as the name suggested, to assess the minimum requirements that a contractor needed to have to achieve competency, included the following:

3 Grade 5 & 6 contractors; N.Dip., B.Tech. and higher qualifications; and
4 Grade 2 to 4 contractors; Trade Test (Including Foreman Certificate), N.Dip. B.Tech. and higher qualifications (CIDB, 2011).

In a study conducted by the CIDB, it was found that grade 1 contractors regardless of their educational background, lack training in entrepreneurship (CIDB, 2015). It is clear that none of the competencies required by the CIDB require a background in entrepreneurial education, the main emphasis of the tool was only construction related qualifications.

This criterion is of concern since SMMEs need owners who are empowered with proper entrepreneurial education because entrepreneurship education has been found to play an important role in nurturing the entrepreneur (Hisrich, Peters & Dean, 2008 as cited in Chimucheka, 2014). However, Ronstadt (1985) as cited in (Robinson et al, 2008) was of the belief that: “The main objective of entrepreneurship education is to foster the creation of new entrepreneurs who could start new ventures”. An entrepreneurial culture can only be fostered through the integration of entrepreneurship education in South African schools (Umsobomvu, 2002 as cited in (Chimucheka, 2014).

On the other hand, there is still a lot of work to be done in developing a syllabus that does not focus mainly on technical abilities but rather pays attention to the cognitive and value system of an entrepreneur (Chen, Green & Crick, (Chen et al., 1998).

2.2.2 Culture

Culture refers to the unique entrenched systems and values, which shape the personalities, traits, and behaviours of a particular group (Storey, 2018).

Societal values and norms play a major role in shaping the national culture of entrepreneurship (Bowmaker-Falconer & Herrington, 2020a). Bowmaker-Falconer and Herrington (Bowmaker-Falconer & Herrington, 2020a) reported “an increase from 2017 to 2019 in the number of individuals who consider entrepreneurship a good career choice (from 69.4% to 78.8%) and one with high status (from 74.9% to 82.2%)” for the GEM report of 2019/2020.

According to a factorial study done by Hofstede (1980) as cited in (Triandis, 1982), “there are four dimensions that measure cultural differences across communities:
Uncertainty avoidance - this represents the need to eliminate all uncertainty and ambiguity from situations. In a study by Raffiee and Feng (2014) as cited in (Khan et al., 2016) “the individuals with low self-esteem and lack of risk-taking ability have more probability to evolve into hybrid entrepreneurship instead of full-time entrepreneurial activity.” Individualism -refers to an individual who prefers to act to fulfil their own interests rather than wanting to act in the interests of others. Power distance - represents the acceptance of inequality in position and authority between people. Masculinity – Femininity versus masculinity specifies the extent to which the prevailing values of a society are “masculine” (e.g., assertive and competitive) or if gender roles do overlap.”

It is undeniable that Hofstede’s cultural classifications (1980) are the most influential in the theory of workplace and business culture (Kirkman et al., 2006). Although, according to Sivakumar and Nakata (2000) as cited in (Kirkman et al., 2006): “Hofstede’s (1980) work has been criticized for, reducing culture to an overly simplistic four- or five-dimension conceptualization; limiting the sample to a single multinational corporation; failing to capture the malleability of culture over time; and ignoring within-country cultural heterogeneity.” McSweeney (2002), as cited in (Eringa et al., 2015) criticized the methodology used by Hofstede as the author believed that surveys were an inappropriate instrument to use for measuring cultural differences.

This, however, has not changed the relevance and contribution of Hofstede in literature (Kirkman et al., 2006). The dimension of power distance and uncertainty avoidance influences the structure and function of the business and leads to different implicit modes in people's minds of what a business should be. South Africa has eleven official languages and several different cultures and traditions belonging to the different race groups. Over and above that, South Africans have carved their own unified business culture that defines how they operate when it comes to punctuality (African time) and negotiations.

2.2.3 Work Experience

Work experience in a particular area plays a vital role in entrepreneurship (Khan et al., 2016). According to a study by the CIDB (CIDB, n.d.-b): "The lack of adequate knowledge about the industry and the challenges of working in it is a key factor in the large number of entrants into the industry and the large number of contractors exiting the industry (or becoming inactive on the register)". However, a conflicting finding was made by the CIDB (2015) in the same study, which revealed that previous work experience within the construction industry had no correlation to the contractor's survival or success.

Previous work experience in any similar small business has been linked to being a catalyst in starting a business (Khan et al., 2016), however work experience has not been ranked highly in influencing business performance. Self-efficacy plays a major role in the performance of individuals, this is supported by Chen, et al. (Chen et al., 1998) as cited in Wasdani and Mathew (2014, p.6), who postulated "that the belief in abilities is more important than even the possession of them and any past experience of the task" which is the definition of self-efficacy.

2.2.4 Innovation

Schumpeter (1934) and Drucker's (1985) definition of an entrepreneur was centred on the theory and practice of innovation (Mwatsika, 2015b). Schumpeter, as cited in Mwatsika, (2015, p.427), began by defining the

entrepreneur as “an individual who implements innovative change within markets which manifests new or improved goods, new methods of production, new markets, new sources of supply, and/or re-engineered business management processes.” Drucker (1985) added his contribution to the definition by looking at how entrepreneurial alertness and response to change lends itself to exploiting more opportunities (Drucker, 1985, as cited in (Mwatsika, 2015b).

In the South African construction industry value chain, the main responsibility for innovation falls on the consulting professional team for that particular project (architect, engineer, etc.). However, during the tendering phase of most housing and infrastructure projects contractors are encouraged to be innovative by proposing Alternative Building Technologies (ABT). However, this gives very little innovative freedom to the contractor because the specifications on construction projects are quite rigid.

A study done by Andersson, Biörck, Sjödin and Mischke (Andersson et al., 2020) for Mckinsey and Company - surveyed 400 industry decision makers about the factors that were believed would affect the construction industry. The authors found that factors such as unprecedented disruption, especially regarding new production technology (68%) and the digitization of products (67%) were a top selection amongst the participants(Andersson et al., 2020). The survey respondents felt that it was important for all players in the construction value chain to develop strategies that will enable them to deal with disruption, because it will affect many aspects of how things are done in the sector, particularly when it comes to the “materials distribution and logistics, engineering and planning, and general and specialised contracting”(Andersson et al., 2020).

The South African economy still has a long way to go when it comes to dealing with disruptive technologies. According to (Bowmaker-Falconer & Herrington, 2020b) in the GEMS 2019 report, factors such as “comparatively high data costs in the country are one of the major challenges faced by South

African entrepreneurs. This is an important market issue to address, given that the digital economy is where many entrepreneurial opportunities lie".

2.2.5 Creativity

Creativity provides any organisation with the ability to adapt to a changing environment while harnessing the opportunities that come with it(Shalley et al., 2004)The Covid-19 pandemic has challenged entrepreneurs to become more creative and innovative as they try to pivot their businesses in an effort to adapt to the changes(Thukral, 2021).

2.2.6 Risk Taking

Entrepreneurs are regarded as individuals who have a reasonable amount of propensity for risk. In a study conducted on serial entrepreneurs with two or more ventures, greater risk tolerance was reported than with first-time entrepreneurs; construction is in its nature a high-risk activity. Therefore, the ability to manage risks is a crucial competency and trait that contractors should possess. Tendering for projects in the construction sector requires a rigorous assessment of risks, contractors in the lower CIDB grades (grades 1 to 5) do not have these resources. This results in inaccurate bidding and the contractor being awarded a project that is near impossible to complete.

2.2.7 Opportunity Recognition

Opportunity recognition is a characteristic associated with innovativeness in the entrepreneurial environment (Jones & Barnir 2019, as cited in Filser et al., 2020). According to Atherton, et al. (2015) as cited by the CIDB (2015, p.16): "Entrepreneurs with experience in an industry are more capable of finding opportunities, have better developed business networks and have relevant knowledge of the business environment". The contrast to that view, given by Filser et al. (2020), is that opportunities are already existent objectively in the market for any entrepreneur, irrespective of who the entrepreneur is. This notion was postulated by Kirzner et al. (1973 p.162) as cited in Naumann

(2017) who believed that alertness was more important than knowledge when it came to opportunity recognition.

Opportunities exist in the form of tenders in the construction industry, especially for contractors who are at the tail end of its value chain. If a contractor does not have a full book of tenders awarded to them, then there is a high chance that their company will not survive.

2.2.8 Competitive Aggressiveness

Competitive aggressiveness refers to the distinct idea of “beating competitors to the punch” suggested by Miller (1983) and Lumpkin and Dess (1996) as the type of intensity and head-to-head posturing that new entrants often need to compete with existing rivals, both cited in Kozubíková and Sopková (2017, p.209). According to Krauss, Frese, Friederich and Unger (Krauss et al., 2005) competitive aggressiveness had not yet been studied from an individual-level or perspective, previous studies had only studied competitive aggressiveness from a firm level. The authors conducted a study among SME owners in South Africa and found that a competitive aggressiveness is one of the characteristics of successful entrepreneurial firms. Their study also revealed that competitive aggressiveness, and innovation were not significant to business growth(Krauss et al., 2005).

2.3 External Factors: Supportive Environment and Co-operative Environment

This section discusses external factors, which consists of components that fall on the periphery of an entity. Opportunities or threats to the business emanate from all these factors.

2.3.1 Supportive Environment

A supportive environment refers to the components of the external environment that are conducive to the entry and nurturing of entrepreneurs (Okhomina, 2010). It not only covers the wide spectrum of entrepreneurial development services such as mentorship, training, role model, networking,

policies, regulations and financing ((Mwatsika, 2015a), but it also depends on the types of universities available for providing training and research as stated by Okhomina (2010, p.6). The Small Enterprise Development Agency (SEDA) is an agency of the Department of Small Business Development, which provides support to small businesses in South Africa through the integration of other government-funded small business support agencies (SEDA, 2016).

2.3.1.1 Mentorship

Mentorship is one of the most important components to entrepreneurial development(Memon et al., 2015). It refers to the guidance provided by an experienced individual, commonly an older person guiding a younger inexperienced individual. Mentorship is often confused with coaching and other forms of support; however, it differs significantly to these due to the nature of the relationship between the mentor and the mentee. The mentor in this instance is committed to ensuring the success of the mentee, which sometimes requires looking into other personal development areas that need attention for that mentee to achieve a particular objective, whereas the coach will focus on a specific area of interest for an allocated period(Memon et al., 2015). Mentoring is an effective way to accelerate learning in the absence of having time to offer training where imparting knowledge and skills is required(Van Coller-Peter & Cronjé, 2020).

2.3.1.2 Training

Entrepreneurship education and training form the foundational basis of entrepreneurial development (Bowmaker-Falconer & Herrington, 2020c). Training refers to a more practical approach to gaining knowledge and skills that promotes entrepreneurship in the people(Ho et al., 2018).

A study conducted by the CIDB (2015) found that all contractors need support in the form of training programmes and learnerships, especially when it comes to developing soft skills to achieve growth and sustainability that is difficult to achieve at this level. This training is critical, especially for the grade 1 contractors who struggle to move to the higher grades.

2.3.1.3 Family and Role Model

Family variables, such as responsibilities and family life, can impact the success of an entrepreneur significantly(Molina, 2020). Support from family is a critical component to entrepreneurial intention and development whereas a toxic family life can be a major deterrent to entrepreneurial success. Role models are persons that influence the decisions of an individual through their own actions and behaviours (Abbasianchavari & Moritz, 2021). Family members are the first reference to a role model that a child has, and this can have a lifelong impact on nurturing their entrepreneurial development as they get older.

2.3.1.4 Networking

Networking involves sharing contacts and exchanging resources with other individuals and enterprises in a cost-effective manner (Johannisson, 2000). Networking is a useful tool to contribute to the recognition of opportunities and business success. There are negative perceptions when it comes to networking in the construction industry due to the high levels of corruption, bribing and cartels that have been associated with the industry(Bowen et al., 2015).

2.3.1.5 Government Regulations

Regulation is a legislation that controls how markets operate in the provincial or local context. Government policies form part of the business regulatory and policy environment. According to the McKinsey Global Institute (MGI) (2017, p. 4) “The construction industry is expansively regulated, very dependent on public-sector demand, and highly cyclical.” The contracting sector, which has ‘low barriers to entry’, allows for ease in registering with the CIDB. Therefore, there are many new entrants in the construction industry (hence the large number of grade 1 contractors who make up more than 90% of the contractors registered with the CIDB) in the market due to the ease of starting a construction company (CIDB, 2015). According to Bowmaker-Falconer and Herrington (2020, p.23), South Africa is still ranked low on the Global Competitiveness Index (GCI) it came to: “burden of government regulations (101/141) and the time required to start a business (129/141); the availability

of financial services also declined (to 96/141) flexibility of wage determinations (124/141) and the hiring and firing practices (129/141). These hinder the growth of business in the country.

2.3.2 Co-operative Environment

A co-operative environment refers to available institutions that are actively involved in promoting entrepreneurship, such as universities and other educational institutions, as well as large firms and non-governmental organisations (Mwatsika, 2015b).The CIDB regulates and promotes the growth of construction businesses.

2.3.2.1 Location of Business

Location refers to the suitable place for the small business, based on factors such as accessibility to the market; availability of raw materials; availability of labour and skills; infrastructure (for example, transport, water supply, electricity supply, existing business environment and climate. Location is important for gaining access to the market, which is the disadvantage of many rural businesses that find it difficult to do so(SEDA, 2016). Contractors must often deal with working on multiple remote locations due to the nature of construction projects which tend to be in poorly developed areas. The global trend of working remotely which was spurred about by the Covid-19 pandemic lockdowns has not taken off significantly in the contracting industry in South Africa. Only the contractors who are of higher grades took advantage of the technology to enable business processes.

2.3.2.2 Business Skills

Construction companies tend to be managed by the owner in order to save on the costs of hiring experienced managers who bring with them the necessary business skills(Thwala & Phaladi, 2018) . This is prevalent in the lower CIDB grades (2 to 5) and it negatively impacts the performance of the business which reduces the prospects of obtaining a higher CIDB grade level for the contractor. These emerging contractors hire only a few permanent staff (less than 10) and the rest of the staff compliment is made up of

temporary employees(Hove, 2016). It is believed that record keeping is also a critical business skill, that when done poorly is will cause many businesses to fail(Thwala & Phaladi, 2018) .

2.3.2.3 Access to funding

Access to funding is one of the major factors that impede the growth and sustainability of contractors(Hove, 2016).A healthy cash flow on a construction project is paramount to the success of a contractors' business and this is achieved through proper planning and frequent payments from the employer. In the case of public sector projects, it is difficult to manage cash flow due to the challenges highlighted by Ofori et al., (2017, p.) in their study around the challenges in financing contractors in Ghana. The authors unravelled the following financing challenges experienced by contractors contracted to the public sector:

- "Delayed payments by government,
- inadequate cash flow,
- change of government,
- bureaucratic processes involved in acquiring funds from financial institutions (Ofori et al., 2017, p.61)"

Similar challenges were identified in a study by Thwala and Paladi (2018, p.538) looking at contractors in the North western province of South Africa.The top ranked challenges that hinder the growth of construction SMME's are: "Government not paying on time, lack of capital, and difficulty in arranging guarantees(Thwala & Phaladi, 2018)."

2.4 Reasons for starting a business

Chimucheka's (2014) study on the role of government agencies in promoting SMMEs in all provinces around South Africa, found that individuals holding a tertiary qualification are more likely to own and manage a start-up business than those without Grade 12. Factors, such as, culture, education, the regulatory environment, national demographics, and the social culture of a nation, all play a part in shaping the country's entrepreneurial landscape (Brixiová, Ncube & Bicaba, 2015). In South Africa, the overall levels of

education and training, social and cultural norms and the regulatory environment play a highly significant and potentially negative role in determining the level of early-stage entrepreneurial activity. According to a study conducted by the CIDB (n.d), reasons such as:

- good financial returns
- the need to earn an income
- unemployment or retrenchment and the
- desire to empower the community
- knowledge of the industry
- preference for the working conditions and
- the positive financial prospects, are believed to be the main drivers in business formation in the contracting sector.

2.5 Theoretical Framework

Figure 2 below, is a theoretical framework adapted from the reviewed literature. The independent and dependent variables that form the background of this study are outlined to emphasise the hypotheses of the research.

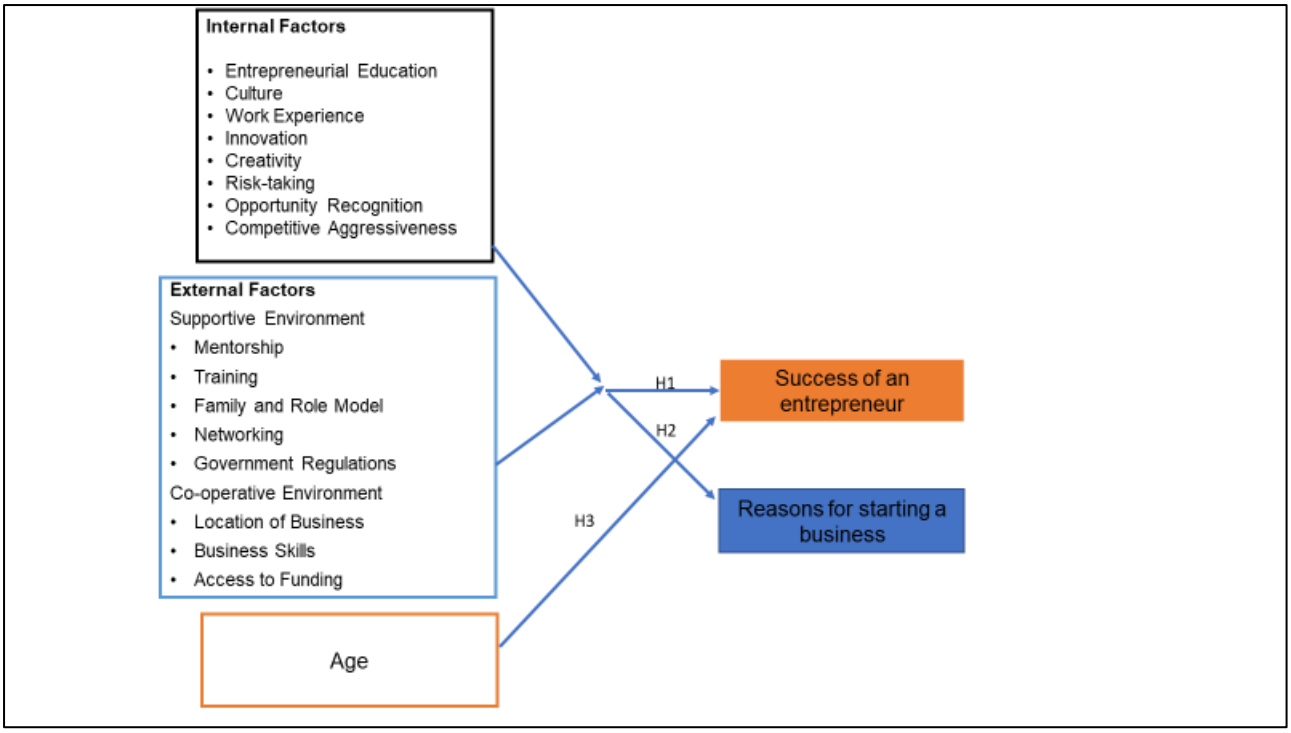


Figure 2: Theoretical Framework

2.5 Summary and conclusion

In this chapter, the literature dealing with the *Factors Influencing Entrepreneurship and business performance in the South African construction industry* was reviewed. Factors such as access to funding, business skills and location of business are vital to creating a more co-operative environment where entrepreneurs can succeed. Whereas the internal factors such as culture, entrepreneurial education, innovation, creativity, risk-taking, opportunity recognition and competitive aggressiveness should be driven by the entrepreneur as they strive for the success of their entities. The supportive environment creates the foundation in terms of the environment where these entities emerge and grow into successful ventures.

3 RESEARCH STRATEGY, DESIGN, PROCEDURE AND METHODS

3.1 Introduction

In Section 1.2.3, we have three hypotheses and two sub-hypotheses that this research report intends to prove—that is, ‘H1: There is a significant difference between the influence of internal and external factors on the success of an entrepreneur.’ ‘H1.1: There is a significant difference between the influence of internal and external factors on the success of an entrepreneur.’ ‘H1.2: There is a significant difference between the influence of internal and external factors on the success of an entrepreneur.’ ‘H2: There is a difference between the influence of internal and external factors on the reasons for starting a business for contractors.’ and ‘H3: There is an association between the success of an entrepreneur and the different age groups of the entrepreneurs. The theoretical framework guided the choices of techniques used by the researcher. This chapter identifies and describes the research approach, design as well as procedure and methods that were employed in this research to collect, process, and analyse empirical evidence. Broadly, it has three objectives; namely, to identify and describe the research strategy (Section 3.2), the theoretical framework, (section 3.3), the research design (Section 3.4), as well as the procedure and methods (Section 3.5). The chapter also describes the reliability and validity measures (Section 3.6) that this research applied to make it trustworthy as well as the technical and administrative limitations of the choices made.

3.2 Research strategy

There are three types of strategies that are widely used for research, all of which aim to extract valid and reliable information for a particular study, and these are referred to as quantitative, qualitative, and mixed methods of research.

Quantitative researchers make post-positive assumptions for developing knowledge, such as cause and effect thinking, the formulation of questions, hypotheses, the use of measurement and observation and the test of theories

(Creswell, 2014, p. 18). This involves collecting information through surveys and by conducting experiments (Newbold, Carlson, & Thorne, 2013).

A survey is designed to study a sample of a population by providing numeric (quantitative) description of trends, or attitudes of that population (Creswell, 2014, p. 155). Since the data is in a numeric form, a researcher can apply statistical tests in making statements about the data (Madrigal & McClain, 2012). An experiment also involves a sample, however it seeks to test the effect of a treatment or an intervention on a particular group in a controlled environment and observe the outcome (Creswell, 2014, p. 156).This can also be conducted in a manner where the researcher creates two or more groups from randomly selected individuals and the treatment is given to the one group whilst the other group is given a placebo and from that isolation, the researcher is able to ascertain that it is in fact, the treatment and no other factors that influenced the outcome of the experiment (Creswell, 2014).

The qualitative approach, on the other end of the research continuum, involves making knowledge assumptions based mainly on constructivist perspectives (Creswell, 2014, p. 18), extrapolated from the lived experiences of individual persons (Wertz, et al., 2011, p. 29). The collection and analysis of data is done using five common methods namely, phenomenological psychology, grounded theory, discourse analysis, narrative research, and intuitive inquiry (Wertz, et al., 2011).

A method of collecting and analysing both forms of data for use in a single study, is known as the mixed method in research (Creswell, 2014, p. 15). This method - where pragmatism guides the development of knowledge - is a triangulation of data and it can be done using three processes - identified in Creswell (2014, p. 16) as:

- Sequential Procedures
- Concurrent Procedures and
- Transformative Procedures

The literature reviewed was made up mostly of studies which used quantitative methods. The research methodology chosen for this study was,

thus, quantitative, because this study was aimed at acquiring statistical data and making statements based on the analysis of the data. Quantitative research is especially suited for the testing of hypotheses (Muijs, 2004), similar to the method used by (Saleem, 2011) to examine the success factors for entrepreneurial approaches in mountainous regions of Pakistan.

3.3 Research design

A descriptive non-experimental correlational quantitative study was conducted in the form of a survey. The data was collected from a group of contractors registered with the CIDB. These contractors were sent a questionnaire and the responses were tallied and analysed by the researcher. These types of research design need no intervention and are different from the experimental research because they do not require a control group, nor do they require any manipulation of the independent variable.

A pilot study was conducted where the questionnaire was sent out to six individuals who are known to the researcher and are construction industry professionals. These professionals provided feedback on the structure and length of the questionnaire before it was sent out to the participants of the study.

3.4 Research data and information collection instrument

The data collection instrument used in the study was an online questionnaire which was selected by the researcher because it allowed the collection of data from a large sample.

The questionnaire was divided into four sections: Section A, B, C and D. Section A was a series of close-ended questions which sought to establish basic information on the participants. Section B dealt with the reasons for becoming an entrepreneur in the construction sector, these were a series of 5-point Likert scale questions. Section C focused on the internal and external factors that were identified in the literature review to influence entrepreneurial

success, and section D was an open-ended question asking the entrepreneurs to state the challenges they were faced with in the construction industry.

3.5.1 Research target population and selection of respondents

The group that one intends to study is referred to as the target population. In this study, the target population is represented by the construction SMMEs (contractors) registered with the CIDB. The reason for limiting the population to contractors is because they are recognised for their contribution to the contracting sector.

The technique of probability samples needs the population to be very precisely defined. A sample of 75948 contractors who form part of the CIDB's Register of Contractors (RoC) were chosen from a population of 204 911. They represent all the grade levels from grades 1 to 9 and they all specialise in general building (GB).

3.5.2 Ethical considerations when collecting research data

The researcher received ethical clearance from the ethical committee at the Wits Business School. The gathering of primary data using questionnaires also made it clear that participation was voluntary, by outlining the nature and structure of the study before asking participants to take part in answering the questionnaire, to avoid any misunderstanding.

The consent form that was attached to the questionnaire ensured that individuals were voluntarily participating in the research with full knowledge of:

3.5 The purpose of the research and expected procedures.

3.6 Participants' rights to decline and to withdraw from the research.

3.7 Outline of the research benefits.

3.8 Limits of confidentiality, such as data sharing, disposal, and archiving, when confidentiality must be broken.

3.9 Who participants could contact should they have any questions.

3.5.3 Research data and information collection process

After receiving ethical clearance from the faculty, an emailing list was requested from the CIDB register of contractors. The CIDB had to then extract the necessary information pertaining to a sample of contractors from their database and send it to the researcher. An internet base mode of data collection through emails is what the researcher committed to, due to its convenience and practicality. A questionnaire - complemented by an opening letter - was generated through Google forms and then sent to the participants. The participants had one month in which they could complete the questionnaire and their responses were collected and stored on a cloud-based system for analysis by the researcher.

3.6 Research data and information analysis

After data collection, the data was retrieved from the cloud-based storage system in an Excel spreadsheet format with columns and rows. The data was then cleaned by removing all blank rows and areas where participants had not answered the mandatory questions in the questionnaire. The participants were a sample of contractors registered with the CIDB who were representing the whole population.

The data collected aimed to show the relationship between internal and external factors influencing construction entrepreneurs and their level of success which was measured by the CIDB grades; their influence on the different reasons for staring a company, and to determine if age had any impact on the success of an entrepreneur. Descriptive statistics were used to understand the characteristics of the data set and inferential statistical tools such as chi-square test, simple regression and T- test were used to draw conclusions on the population by testing the abovementioned hypotheses that formed the backbone of the study.

The first hypothesis was tested using the chi-square method along with a Cramer's V which was used to justify the findings and then the sub-hypotheses to the first hypothesis were tested using a simple regression model. The second hypothesis was tested using an independent sample T-test which was best to determine whether there was a difference between the variables that were being tested. The p-value from these tests had to be either above or below the significant level of 0.05 for the researcher to reject or fail to reject the null hypothesis.

The chi-square method was also applied to test the third hypothesis; the technique provided the most suitable approach to analysing the nominal scales. A Cramer's V was used to justify the findings by testing if there was any association between age and entrepreneurial success.

3.7 Research strengthens—reliability and validity measures applied

The reliability of the research can be defined as the consistency of the research which assesses whether the research would repeatedly produce the same results if it were given to the same participants. The reliability of this study was dependent on eliminating the possibility of the following four threats to the research:

3.7.1 Participant Error

The researcher sent the questionnaire to the participants via email with a link that was accessible at any time allowing the participant ample time to read through and understand the questionnaire when it was convenient for them to do so.

3.7.2 Participant Bias

The questionnaire could be answered in private, therefore no one could influence the participant to give a biased response to the questions. The anonymity of the questionnaire also gave the participant the freedom to respond to the questionnaire honestly.

3.7.3 Researcher Error

The researcher had enough time to prepare the questionnaire so that it would be consistent, this was the benefit of conducting a quantitative study where the same questionnaire was sent to all participants.

3.7.4 Researcher's bias

Statistical methods were used to eliminate any subjectivity to the results from the researcher.

The validity of the research, on the other hand, focuses on how the research measured what it set out to measure. The construct validity is the most important measure of validity as it delves into how the inferences in the study are made and tested accordingly.

In this study, construct validity was attained by having a clear approach to the research wherein the researcher was intentional through each step, in planning and executing the research.

The factors influencing entrepreneurship were identified through a review of the literature and these factors formed the theoretical framework for the research methodology. The data collected was analysed using statistical tests that were most suited to produce accurate results from which the researcher could draw further conclusions. External validity was also applied in this study using Cronbach's alpha coefficient to check the consistency of the scales (Shakeel, Yaokuang, & Gohar, 2020).This measure was used on the Likert type questions which concerned the reasons for starting a business.

3.8 Research weaknesses—technical and administrative limitations

- The CIDB Register of Contractors is not accessible to the public; the process of retrieving the sample took the researcher longer than anticipated.
- A factor study done prior to conducting the research would have been advantageous for the reliability of the internal and external factors used

in this study, however due to time constraints, this exercise could not be done.

3.9 Conclusion

This chapter outlined the quantitative approach using a questionnaire to collect empirical evidence from CIDB registered contractors. The data was processed and analysed using statistical methods on Microsoft Excel.

4 PRESENTATION OF RESEARCH RESULTS

4.1 Introduction

This chapter presents the results and key findings from the 1520 participants who completed the questionnaire sent to them via email. The inclusions were contractors registered with the CIDB. There were 36 outliers who were not registered with the CIDB and those were removed from the dataset. Some of the participants did not answer all the questions, the blanks were identified for the mandatory questions and those participants were also removed. The results below represent the thoughts and opinions of 1484 participants.

4.6 Section A: General Information Questions

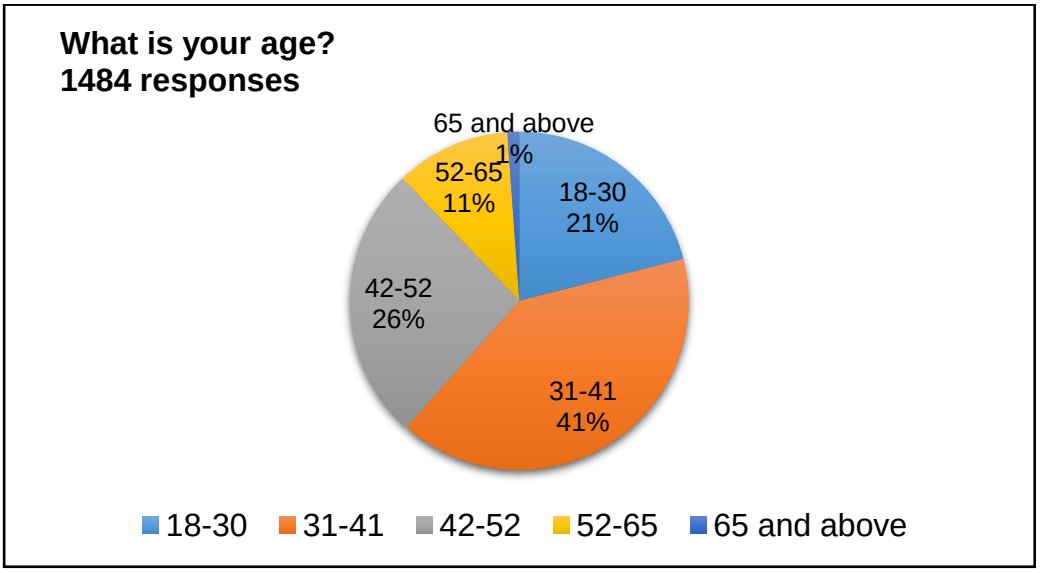


Figure 3. Age Distribution

The age distribution of the participants leaned more towards the 31 to 41 age group at 41% of the total and this was followed by the 42 to 52 group which made up 26% of the age group. The youngest (18 to 30) category made up 21% of the age group, almost double that of the two oldest categories (52 to 65) and (65 and above) which only made up 11% and 1% of the age group, respectively.

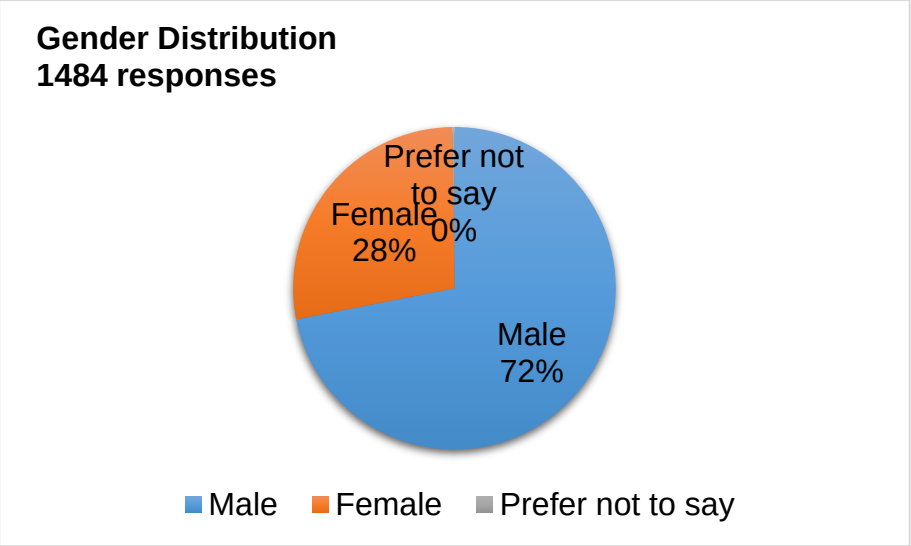


Figure 4. Gender Distribution

The male gender at 72% of the total, was represented as much higher than the female gender which formed close to a third of all the participants at only 28% of the total. Only three participants selected the option 'prefer not to say' which was a miniscule percentage of the total.

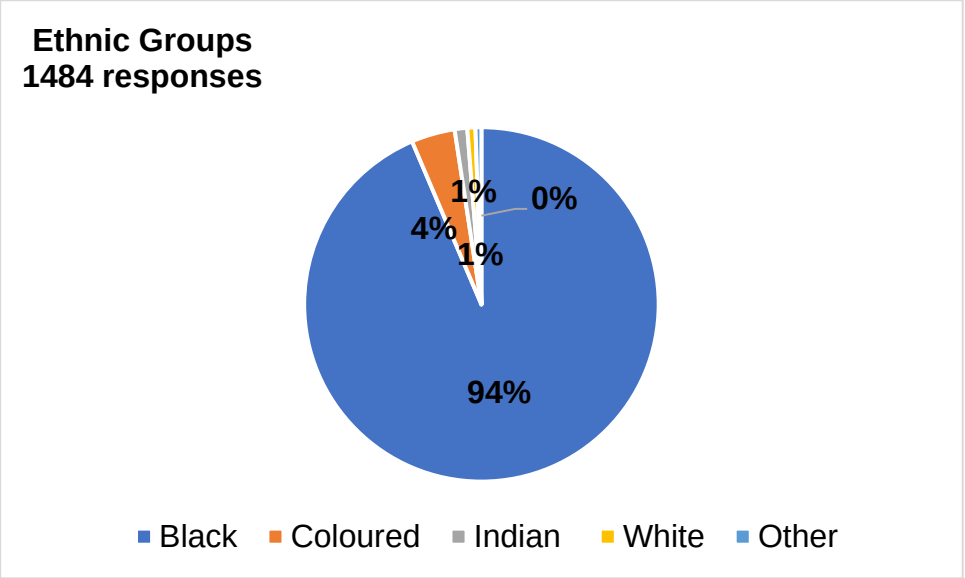


Figure 5. Ethnicity of Participants

Black contractors formed 93.7% of the participants, whilst all the other ethnic groups, Indian (1%), coloured (4%), white (1), and other (0%); combined, were less than 10% of the total.

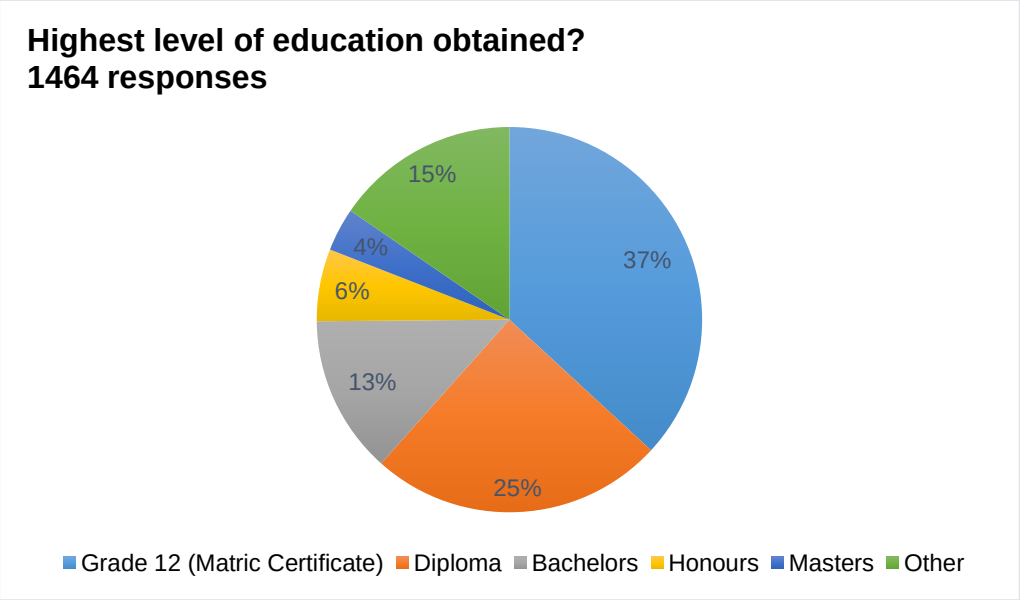


Figure 6. Educational Background

37% of the participants have obtained a grade 12. Those who have a diploma form 25% of the total while the participants who chose 'other' were 15% of the total, which was higher than the representation of participants who had obtained a bachelor (13%), honours (6%) and a master's degree (4%) respectively.

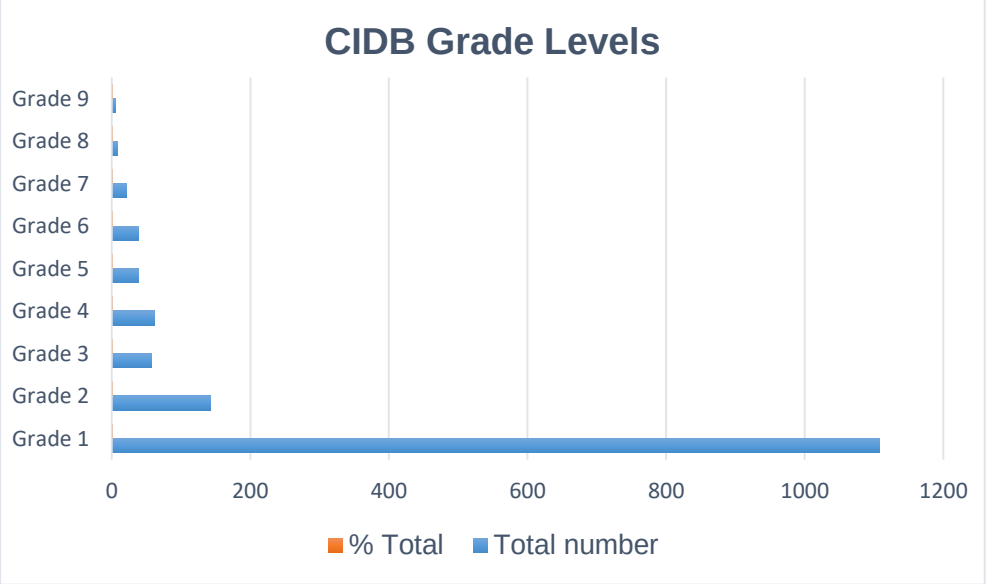


Figure 7. CIDB grading of participants

Most of the participants were registered as grade 1 contractors at 74.66% of the total. The remaining 25,34% of the participants fell between grades 2 to 9.

4.6.1 Section B: Reasons for starting a business

This section sought to establish the reasons behind the entrepreneurial intention of the participants. The participants were given 10 Likert 5-scale type questions where they had to rate the degree of influence each option had on their entrepreneurial intention.

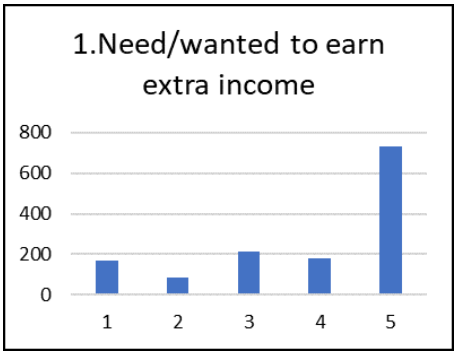


Figure 9. Reason 1

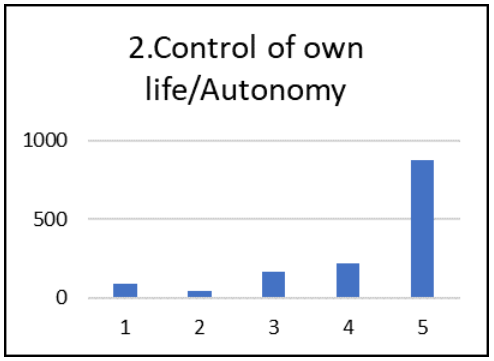


Figure 8. Reason 2

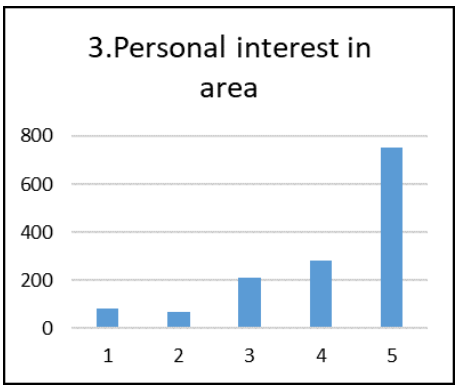


Figure 10.Reason 3

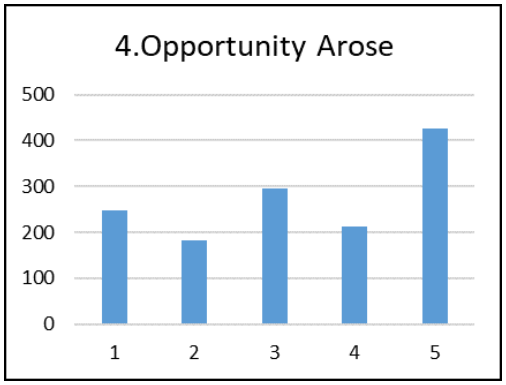


Figure 11. Reason 4

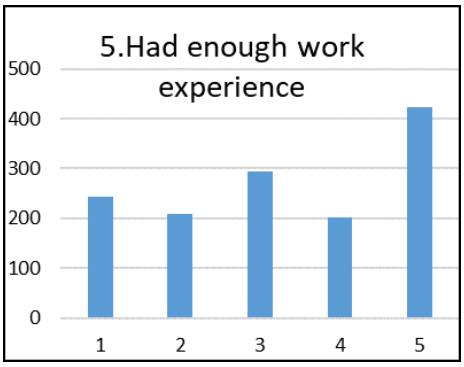


Figure 12. Reason 5

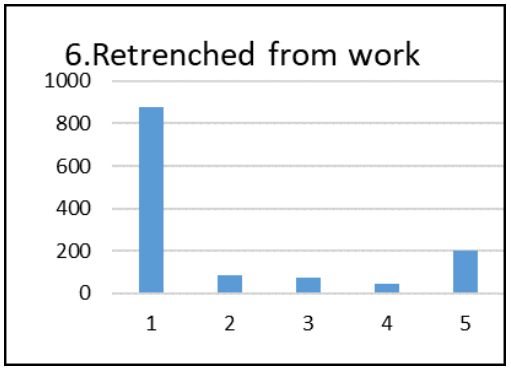


Figure 13. Reason 6

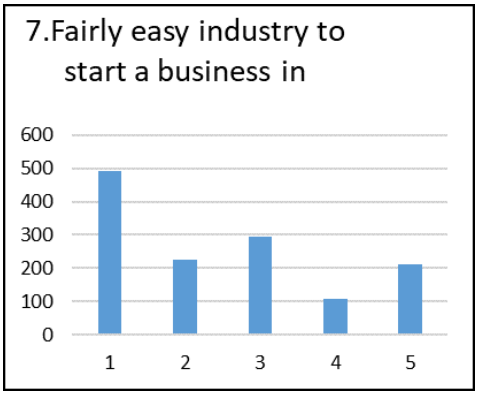


Figure 15. Reason 7

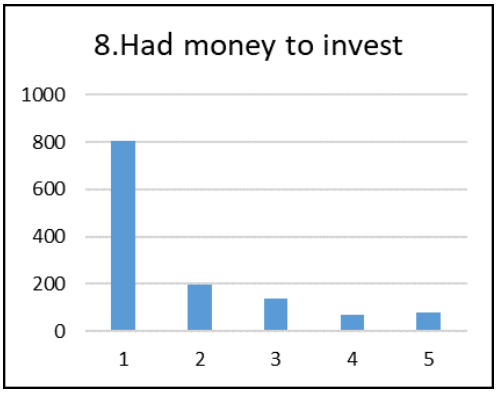


Figure 14. Reason 8

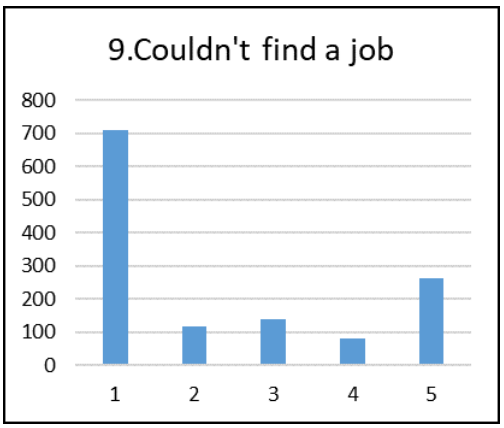


Figure 16. Reason 9

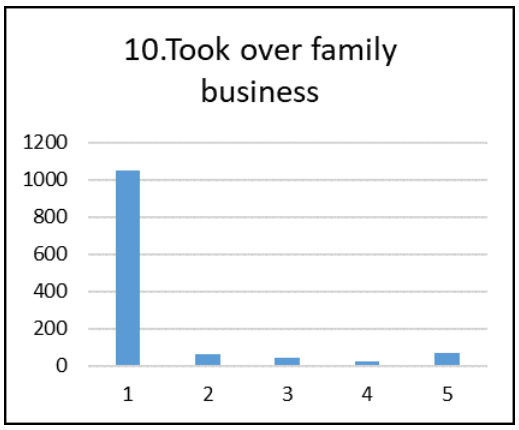


Figure 17.Reason 10

Wanting 'control/autonomy of own life' was the most chosen reason by the contractors and 'personal interest in area' was the second most chosen option with 'need/wanted to earn extra income' being the third most chosen. Taking over the family business (10) and having money to invest (8) came out as being the weakest and therefore, highly unlikeliest reasons for starting a business for the contractors.

4.7 Section C: Internal and external factors

This section consisted of various lists of options pertaining to the internal and external factors which were identified in the literature review.

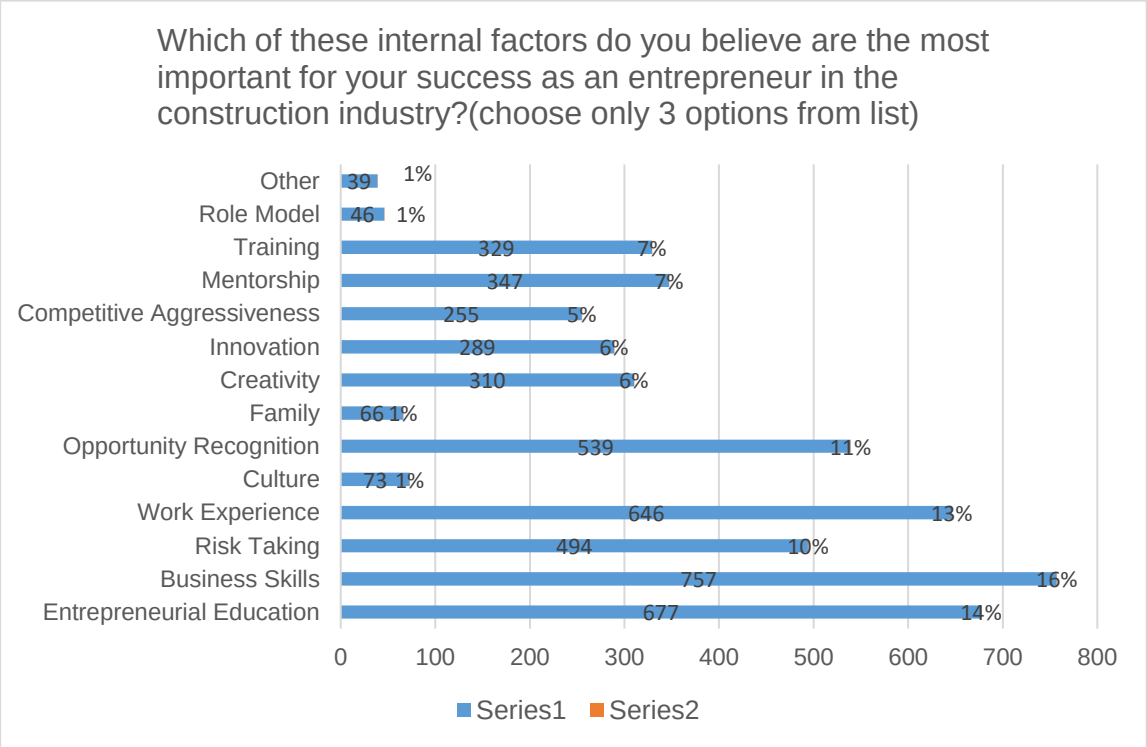


Figure 18. Internal Factors that are believed to enable success

Business skills (16%), Entrepreneurial Education (14%) and Work Experience (13%) were the internal factors believed by the respondents to be the most important for their success as entrepreneurs.

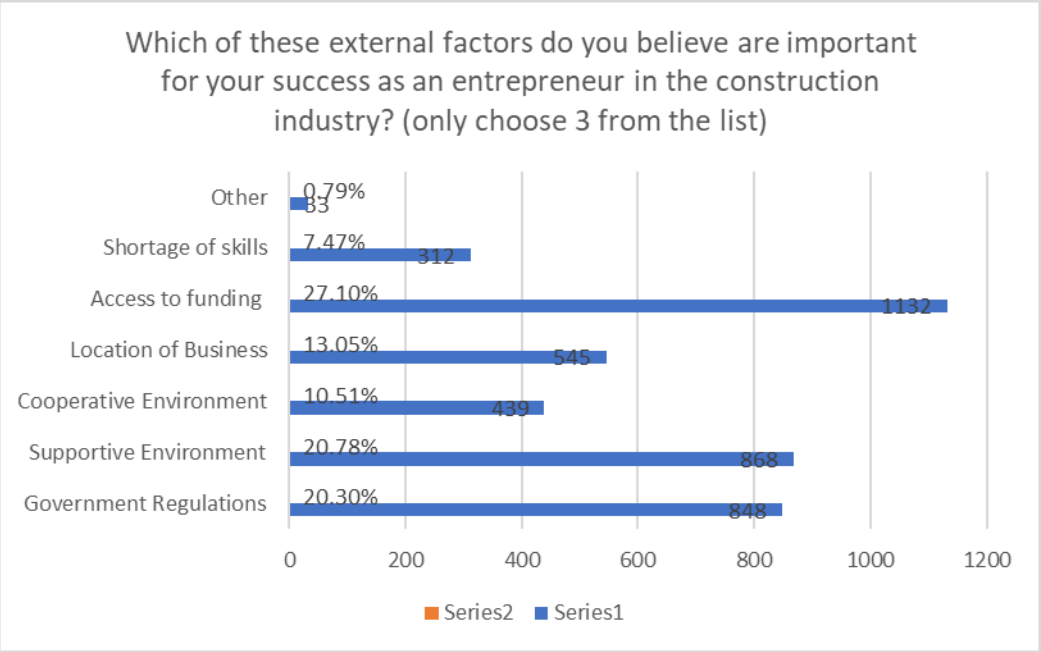


Figure 19. External Factors that are believed to enable success

Access to funding (27,10%) a Supportive Environment (20,78%) and Government Regulations (20,30%) were the external factors believed by the respondents to be the most important for their success as entrepreneurs.

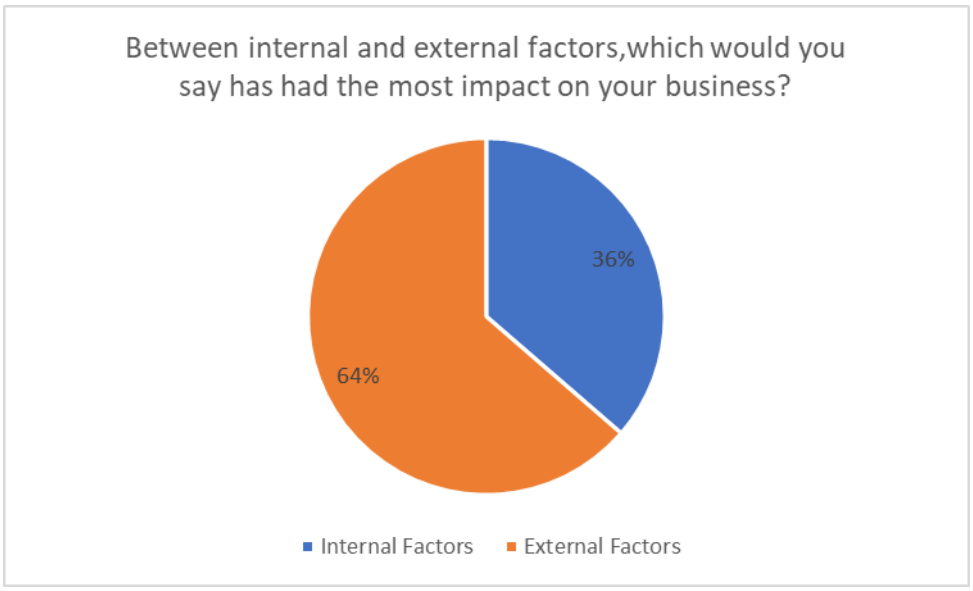


Figure 20. Impact of internal and external factors

4.8 Hypothesis Testing

4.8.1 Hypothesis 1

The following analysis has been performed using Chi – square test in Microsoft Excel version 2012 to determine whether there is a significant difference between the success of an entrepreneur and the influence of internal and external factors. Here, the measurement variable of success of entrepreneur is CIDB grades of their company. The analysis tested the following hypothesis given below:

H0: There is no significant difference between the influence of internal and external factors on the success of an entrepreneur.

H1: There is a significant difference between the influence of internal and external factors on the success of an entrepreneur.

Table 2 Chi-Square Test

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	30.524[a]	28	.339
Likelihood Ratio	37.471	28	.109
N of Valid Cases	1468		

The following table shows the Pearson Chi-Square p – value (0.339) that is higher than 0.05 indicating Null hypothesis (H0) cannot be rejected which implies that there is no significant difference between the success of an entrepreneur and the influence of internal and external factors. Being influenced by any internal or external factor does not significantly affect the success of an entrepreneur.

Table 3 Symmetric Measures

Symmetric Measures			
		Value	Approx. Sig.
Nominal by Nominal	Phi	.144	.339
	Cramer's V	.144	.339
N of Valid Cases		1468	

The following table shows the Cramer's V value 0.144 which is nearly zero; this indicates a lower effect of internal and external factors towards the success of an entrepreneur. According to the significance value, the lower effect is not statistically significant.

The following bar chart shows the frequency breakdown of CIDB grades by the internal and external factors.

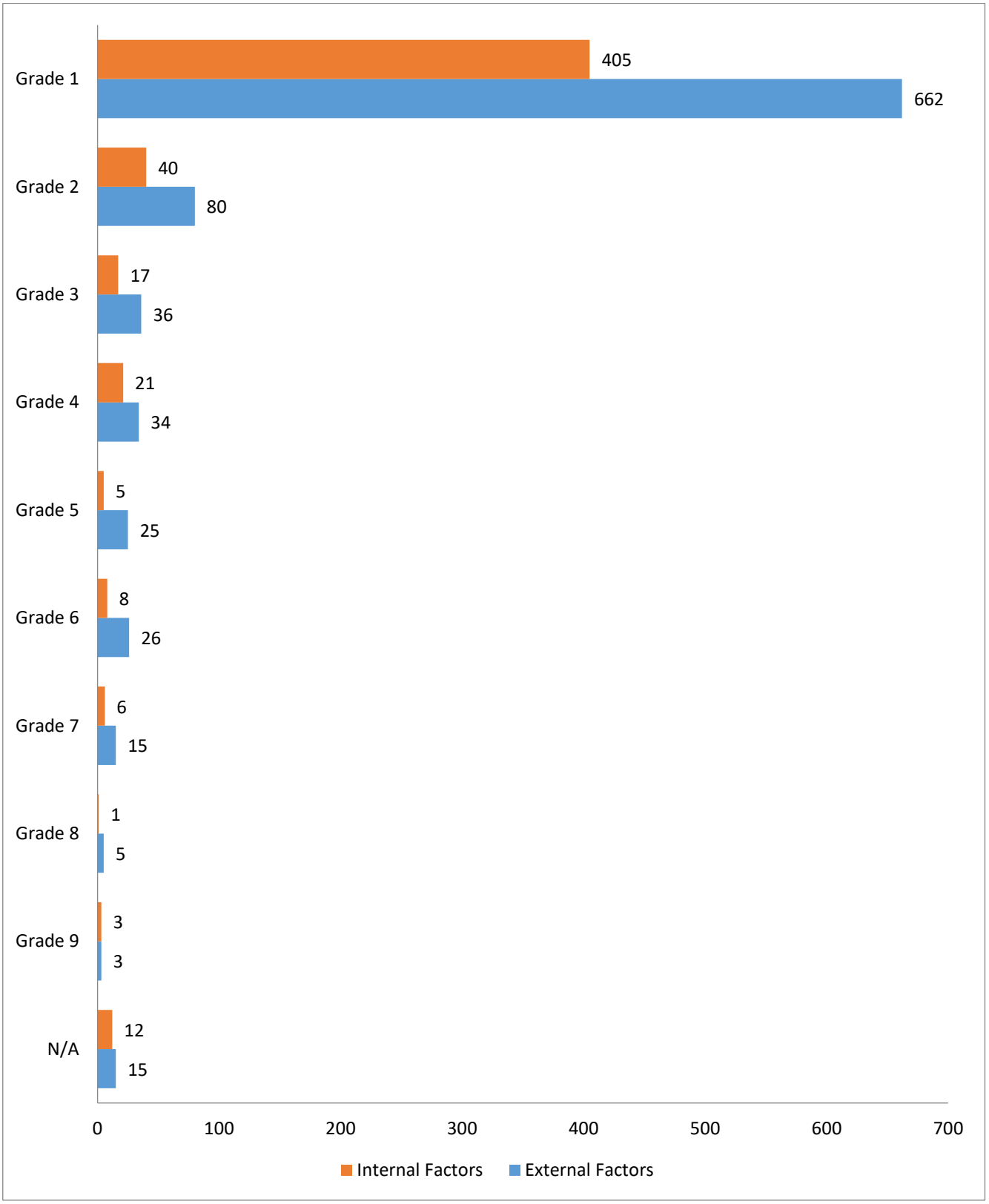


Figure 21 Frequency Breakdown for each CIDB grade

The results derived from the analysis, show there is no significant difference between the success of the entrepreneurs and the effect of both external and internal factors together; this indicates the likelihood of having a significant effect on the success of the entrepreneurs by the external and internal factor separately. In this case,

regression analysis has been conducted to check whether each of the external factors have any significant effect on the entrepreneur's success as well as whether only internal factors have any significant effect on the entrepreneur success.

Hypothesis 1.1

The following analysis was performed using Simple Regression to determine whether the external factors have any significant effect on the entrepreneur's success and what the factors are. Here, the measurement variable of success of entrepreneur is CIDB grades of their company. The analysis tests the following hypothesis given below:

H0: No external factor significantly affects the success of entrepreneur.

H1: At least one external factor significantly affects the success of entrepreneur.

Table 4 External Factors that affect the success of an entrepreneur

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.583	0.421		3.764	0.000
	External factors: Access to Funding	0.242	0.459	0.134	2.527	0.018
	External factors: Cooperative environment	0.065	0.465	0.008	0.139	0.889
	External factors: Government Regulations	0.090	0.424	0.030	0.212	0.832
	External factors: Location of Business	-0.129	0.464	-0.017	-0.277	0.781
	External factors: Shortage of skills	0.117	0.624	0.007	0.187	0.852
	External factors: Supportive Environment	0.136	0.427	0.111	1.985	0.032
a. Dependent Variable: Success of entrepreneurs						

The table shows that two significant external factors that significantly affect the success of entrepreneurship in the South African Constructions Industry are access to funding (beta = 0.134, p value: 0.018 < 0.05) and the supportive environment (beta = 0.111, p value: 0.032 < 0.05). As per the beta values, the effect of these two external factors were positive, implying that the likelihood of being successful increases by 0.134 unit when the possibility of getting enough funds increases by 1 unit. Again, the likelihood of being successful increases by 0.111 unit when the possibility of having supportive environment increases by 1 unit. Thus, the conclusion is that access to funding and supportive environment are the two external factors that significantly affect the success of entrepreneurship in the South African Construction Industry.

Hypothesis 1.2

The following analysis has been performed using Simple Regression to determine whether the internal factors have any significant effect on the entrepreneur's success and what the factors are. Here, the measurement variable of success of the entrepreneur is the CIDB grades of their company. The analysis tests the following hypothesis given below:

H0: None of the internal factors significantly affect the success of entrepreneur.
H1: At least one internal factor significantly affects the success of entrepreneur.

Table 5 Internal Factors that affect the success of an entreprenuer

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.091	0.579		5.339	0.000
	internal factors Business Skills	-0.662	0.774	-0.064	-0.856	0.392
	internal factors Creativity	2.409	1.121	0.126	2.149	0.032
	internal factors Culture	-0.377	0.928	-0.026	-0.406	0.685
	internal factors Entrepreneurial Education	0.213	0.596	0.055	0.357	0.721
	internal factors Innovation	0.455	0.709	0.054	2.041	0.022
	internal factors Opportunity Recognition	0.909	0.743	0.096	1.223	0.222
	internal factors Risk Taking	0.612	0.659	0.093	0.928	0.354
	internal factors Work Experience	0.305	0.611	0.068	0.499	0.618
a. Dependent Variable: Success of entrepreneurs						

The table shows that two significant internal factors that significantly affect the success of entrepreneurship in the South African Construction Industry are creativity (beta = 0.126, p value: 0.032 < 0.05) and innovation (beta = 0.054, p value: 0.022 < 0.05). As per the beta values, the effect of these two internal factors were positive, implying that the likelihood of being successful increases by 0.126 unit when the possibility of applying creativity increases by 1 unit. Again, the likelihood of being successful increases by 0.111 unit when the possibility of bringing innovations increases by 1 unit. Thus, the conclusion is that Creativity and Innovation are two internal factors that significantly affect the success of entrepreneurship in the South African Construction Industry.

4.8.2 Hypothesis 2

The following analysis was performed using an Independent sample t – test in Microsoft Excel version 2012. The test had to determine whether there was a significant difference between the influence of internal and external factors on the reasons for starting a business for contractors, in other words, to know which factor had the most impact on the reasons for starting a new business. Here, the measurement variable of reasons for starting a business for contractors was the sum value of some Likert scaled questions which represent the reason the respondents wanted to start a new business. The analysis tested the following hypotheses given below:

H0: There is no difference between the influence of internal and external factors on the reasons for starting a business for contractors.

H1: There is a difference between the influence of internal and external factors on the reasons for starting a business for contractors.

Table 6. Group Statistics H2

	Factors	N	Mean	Std. Deviation	Std. Error Mean
Reason	External factors	746	28.4035	5.68379	.20810
	Internal factors	401	28.7930	6.56388	.32778

The following table shows the mean value of the reasons for starting a business influenced by external factors as 28.40 whereas the mean value of the reasons for starting a business influenced by internal factors as 28.79. These values indicated that the reasons for starting a business influenced by both factors was similar, according to the sample data set.

Table 7 Independent Sample Test H2

			Reason	
			Equal variances assumed	Equal variances not assumed
Levene's Test for Equality of Variances	F		8.678	
	Sig.		.003	
t-test for Equality of Means	t		-1.047	-1.003
	df		1145	724.250
	Sig. (2-tailed)		.295	.316
	Mean Difference		-.38953	-.38953
	Std. Error Difference		.37189	.38826
	95% Confidence Interval of the Difference	Lower	-1.11920	-1.15179
		Upper	.34014	.37272

The following table shows the p value for Levene's Test for Equality of Variances is 0.003 which was lower than 0.05, indicating that equal variances were not assumed. Thus, the p value according to the unequal variance was 0.316 which was higher than 0.05, indicating that null hypothesis (H0) could not be rejected.

4.8.3 Hypothesis 3

The following analysis was performed using Chi - square test in Microsoft Excel version 2012 to determine whether there is a significant association between the success of an entrepreneur and the different ages of the entrepreneurs. Here, the measurement variable of success of an entrepreneur is CIDB grades of their company. The analysis tests the following hypothesis given below:

H0: There is no association between the success of an entrepreneur and the different age groups of the entrepreneurs.

H1: There is an association between the success of an entrepreneur and the different age groups of the entrepreneurs.

Table 8. Chi-Square Test

	Value	**df**	**Asymptotic Significance (2-sided)**
Pearson Chi-Square	57.968[a]	32	.003
Likelihood Ratio	53.325	32	.010
N of Valid Cases	1145		

The following table shows the Pearson Chi-Square p – value (0.003) that is lower than 0.05, indicating the Null hypothesis (H0) is rejected which implies that there is an association between the success of an entrepreneur and the different ages of the entrepreneurs. So, the age of entrepreneurs significantly affects the level of success of entrepreneurs as seen by their CIDB grades.

Table 9. Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.225	.003
	Cramer's V	.113	.003
N of Valid Cases		1145	

The following table shows the Cramer's V value 0.225 which indicates a lower level of effect of being different ages of entrepreneurs towards the success of an entrepreneur. According to the significance value, the lower affect is statistically significant for the population.

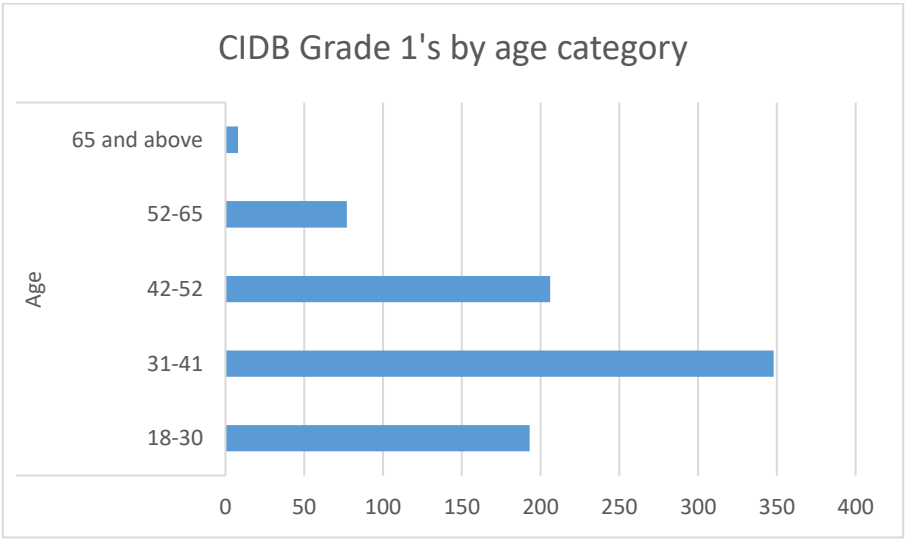


Figure 22.CIDB grade 1 entrepreneurs by their age category

The following chart shows that among the entrepreneurs whose company are graded 1, most numbers of entrepreneurs are in the 31 – 41 years age group and the lowest numbers of entrepreneurs are in the 65 and above group.

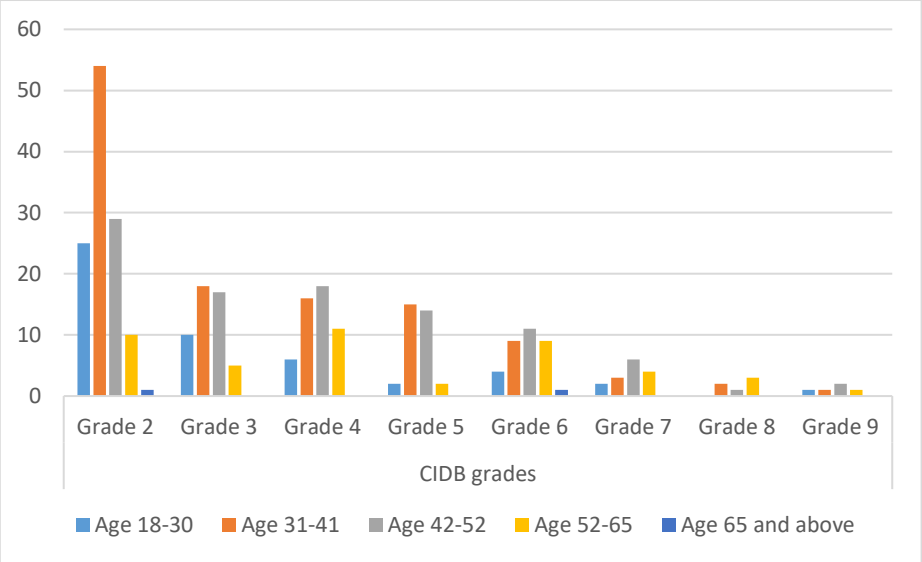


Figure 23. CIDB grades 2 to 9 by age category

The following chart shows that most of the entrepreneurs are in the 31 – 41 age group and have grade 2, grade 3 and grade 5. Moreover, a substantial number of total entrepreneurs are in the 42 – 52 age group and have grade 4, grade 6, grade 7 and grade 9. Only the frequency of 52 – 65 years and older entrepreneurs is high in Grade 8.

4.9 Reliability and Validity

The reliability and validity were achieved through the process of cleaning the data which entailed checking the individual responses for any repetitions, removing blanks and outliers. The Cronbach's alpha was used to measure the consistency of the 10 Likert type questions asking participants the reasons why they started a business.

4.9.1 Cronbach's Alpha Coefficient

Table 10 Cronbach's Alpha

Description	No.
#of items/questions/components	10
sum of the item variances	17,8819376
Variance of total scores	36,0426723
Cronbach's Alpha	0,56

The table above shows a Cronbach's Alpha of 0.56, which was lower than the stipulated 0,7 minimum. However, the coefficient achieved was low possibly due to the size of the scale, which then makes the scale acceptable if that is taken into consideration, because a high score for a small sale (of less than 10) represents redundancy.

4.10 Conclusion Results

This chapter presented the findings of the research gathered from the participants. The summary of the results for each research question are as follows:

4.10.1 Research Question 1: Hypothesis 1

There was no significant difference between the influence of internal and external factors on the success of an entrepreneur. The conclusion was that both factors (external and internal) have an equal impact on an entrepreneur's success.

4.10.1.1 Research Question 1.1: Sub-Hypothesis 1.1

Access to funding and supportive environment are the two external factors that significantly affect the success of entrepreneurship in the South African Construction Industry.

4.10.1.2 Research Question 1.2: Sub-Hypothesis 1.2

Creativity and Innovation are two internal factors that significantly affect the success of entrepreneurship in the South African Construction Industry.

4.10.2 Research Question 2: Hypothesis 2

There was no significant difference between the influence of internal and external factors on the reasons for starting a business for contractors. The conclusion was that both factors (external and internal) have an equal impact on the reasons for starting a business.

4.10.3 Research Question 3: Hypothesis 3

The null hypothesis (H0) was rejected, and the conclusion was that the age of entrepreneurs significantly affects the level of success of entrepreneurs as seen by their CIDB grade.

5 DISCUSSION OF RESEARCH FINDINGS

5.6 Introduction

The following section explains the findings of this research. There were three questions posed in the research paper, which are:(i) Is there any difference between how the internal and external factors influence the success of an entrepreneur? (ii) Is there any difference between how the internal and external factors influence the entrepreneurs' reasons for starting a business? And (iii) Is there an association between the success of an entrepreneur and the different age groups of the entrepreneurs? Another two sub-questions were posed under the first research question and these are: (i) Do any of the external factors influence the success of an entrepreneur? And (ii)Do any of the internal factors influence the success of an entrepreneur?

These questions were examined in the literature review and formed part of the questionnnaire. A comprehensive discussion of these questions is provided below.

5.7 Research Question 1

The research question sought to discover whether there was any difference between how the internal and external factors influenced the success of an entrepreneur.

The vexing results (table 2) suggested that there was very little difference between the influence of the internal and external factors on the success of entrepreneurs. The null hypothesis could not be rejected in this instance. Nevertheless, there was a slight difference in the external and internal factors. This slight difference implies that the external factors have a bigger impact than the internal factors on the success of entrepreneurs. This difference was anticipated to be more significant than the results showed as it was purported in the literature that external factors, such as government regulations, have a major impact on construction SMMEs since government is the largest client in this industry. The insights from the participants in the results (see fig.20) also revealed that external factors outweighed the internal factors in terms of influence, however this influence had no relationship to their success.

Although the testing of the hypothesis revealed that there is no significant influence from internal and external factors on the success of entrepreneurs, a regression analysis looked at both the internal and external factors separately in order to test how each have an impact on the success of the entrepreneurs.

5.7.1 Research Question 1.1

The research question focused on the external factors and discovering if any of them had any influence on the success of an entrepreneur.

The results shown in table 4 confirm that access to funding and supportive environment are the two external factors that have the most impact on the success of an entrepreneur. The supportive environment in the literature covers the following factors:

- Mentorship
- Training
- Networking
- family and role model, and
- Government Regulations

The impact of these external factors is echoed in the literature by a study conducted by the CIDB (2015) found that all contractors need support in the form of training programmes and learnerships, especially when it comes to developing soft skills to achieve growth and sustainability that is difficult to achieve at this level. Memon et al. (2015, p.1) believes that mentorship is one of the most important components to entrepreneurial development. Government regulations are also of no surprise based on the rankings reported by Bowmaker-Falconer and Herrington (2020, p.23), as South Africa is still ranked low on the Global Competitiveness Index (GCI) when it came to: “burden of government regulations (101/141).” The influence of this external factor was also highlighted by the McKinsey Global Institute (MGI) (2017, p. 4) “The construction industry is expansively regulated, very dependent on public-sector demand, and highly cyclical.” Access to funding was also identified as a critical factor in the literature with Hove (2016, p.654) suggesting that aaccess to funding is one of the major factors that impede the growth and sustainability of contractors.

5.7.2 Research Question 1.2

The research question focused on the internal factors and discovering if any of them had any influence on the success of an entrepreneur.

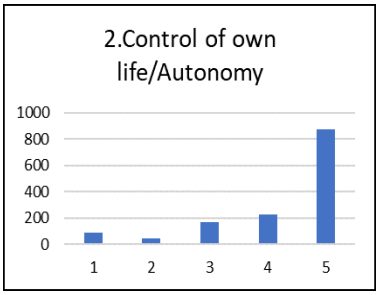
The results shown in table 5 confirm that creativity and innovation are the two internal factors that have the most impact on the success of an entrepreneur. Innovation and creativity are both very important qualities for an entrepreneur to possess the outcome of this regression was expected. Authors such as Andersson, Biörck, Sjödin and Mischke for

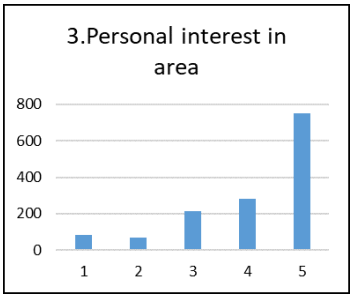
Mckinsey and Company - found that factors such as unprecedented disruption, especially regarding new production technology (68%) and the digitization of products (67%) were a top selection amongst the participants(Andersson et al., 2020).Innovation is imperative for the survival of a business especially during this Covid-19 pandemic(Thukral, 2021).Creativity is the characteristic that an entrepreneur requires in order to adapt to a dynamic environment whilst seizing every opportunity that comes with it(Shalley et al., 2004).

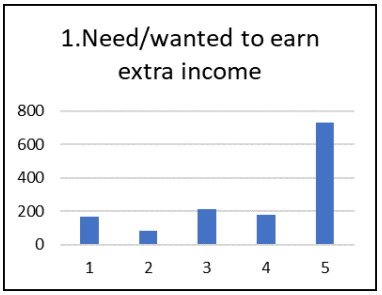
5.8 Research Question 2

The research question was concerned with the influence of external and internal factors on the reasons for starting a business.

The results shown in table 6 showed that there was no significant difference between the external and the internal factors when it comes to the impact both have on the reasons for starting a business which were not surprising. The top three reasons for starting a business chosen by the participants were ‘control/autonomy of own ‘personal interest in area’ and ‘need/wanted to earn extra income’ being the third most chosen (see Figures 8,10 and 9 below).



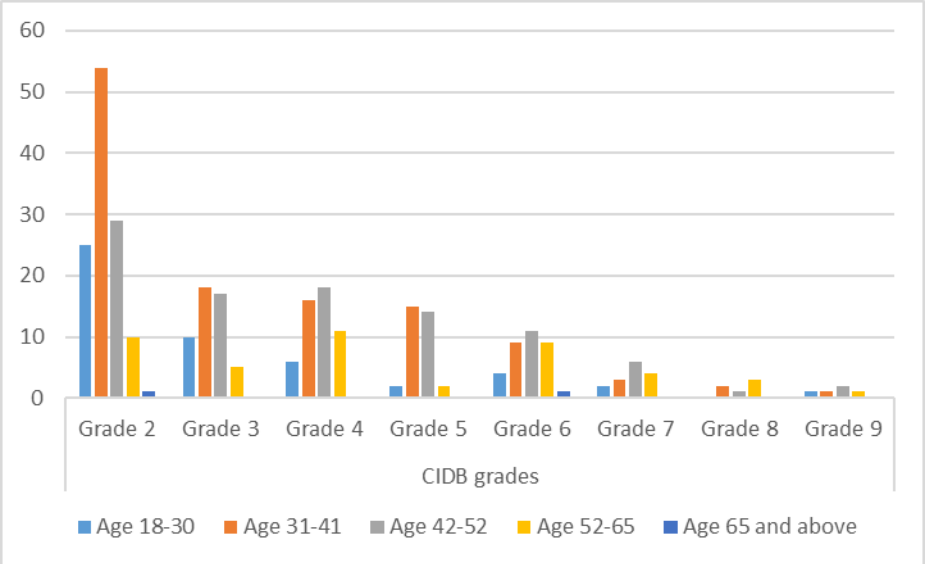




5.9 Research Question 3

The research question sought to determine whether there was any association between the success of an entrepreneur and the different age groups of the entrepreneurs. The null hypothesis was rejected in this instance because there was, in fact, an association between the latter. The age group 42-52 dominated the higher grades in total (see Figure 22) whereas the youngest age groups (18 to 30 and 31 to 41) dominated in the lower grades which are not associated with success, according to the CIDB RoC. This was expected and was in line

with other researchers who found that youth-run businesses tend to struggle due to lack of support (Bowmaker-Falconer & Herrington, 2020a).



6 CONCLUSION

6.1 Introduction

The previous chapter analysed and synthesised the results against the literature reviewed and the research questions. This chapter evaluates the significance of this study and compares it to its outcomes. It also summarises the key findings of the research and discusses the limitations, the implications for future studies and makes recommendations.

6.2 Research background and objectives

The significance for this research was evident; the unemployment rate in South Africa is at its highest and SMMEs contribute significantly to the creation of jobs, however 60% of new businesses fail in less than two years of being in operation (Bushe, 2019) and 60% are predicted to close before the Covid-19 crisis is over (Rajagopaul, Magwentshu, & Kalidas, 2020). With the construction industry's indispensable status within the South African economy and as one of the leading sectors in creating employment, a comprehensive understanding of factors influencing entrepreneurship in the construction industry was necessary.

The purpose of this study was to determine factors that influence entrepreneurship within the contracting sector of the South African construction industry. Internal and external factors formed the backbone of the study. The study also looked at the role age plays in the success of an entrepreneur. The participants were contractors registered with the CIDB; a regulatory body that has the largest number of contractors registered on their RoC.

6.3 Key Findings

The findings of this research revealed that internal and external factors have an influence on entrepreneurship equally with neither having any significant impact on the success of an entrepreneur as well as on the reason why construction companies are formed. Further analysis into the internal and the external factors separately revealed that access to funding and the supportive environment were the two most critical external factors. It was also revealed that innovation and creativity were the most critical internal factors. The findings also showed a positive relationship between age and the success of an entrepreneur.

6.4 Recommendations

The CIDB's measure of success should in future look at more business-related characteristics rather than just at the project capacity and turnover of contractors to give a deeper, more sustainable meaning of what success is for the contractors.

Contractors

The research identified the need for there to be a focus on acquiring business knowledge and an in depth understanding of the construction industry before pursuing entrepreneurship. Contractors need to seek partnerships and set up their entities in such a way that it attracts investors, by finding innovative way to conduct business.

Government

The heavy burden that government regulations exert on the construction industry needs to be lifted by having open and honest conversations with contractors at all CIDB levels. The challenges faced by contractors on public sector projects need to be addressed. Without the necessary support from government in the form of public-sector investments and mentorship and training initiatives, contractors will not succeed.

6.5 Limitations

The number of grade 1 contractors had a significant influence in the outcome of the results which made it difficult to measure success. A regression model was not used in this study to test the hypotheses, and this limited the analysis of the data.

6.6 Implications for future research

There needs to be future research on the success of contractors which focuses only on contractors that fall within the grade 5 to 9 range. It is recommended that future research be focused solely on the entrepreneurial intention of construction SMMEs. This research wanted to determine how internal and external factors play a role in the reasons why construction businesses are formed.

6.7 Conclusion

The objective of this study was to determine the role internal and external factors play in influencing the entrepreneurial success of contractors and their reasons for venturing into construction is imperative, as well as determining the relationship between age and the success of these entrepreneurs. Access to funding, a supportive environment, innovation and creativity are all critical factors to consider when venturing into entrepreneurship within the South African Construction industry. There was also no correlation between the internal and

external factors and the reasons for starting a business. The best way in which South Africans will be encouraged to consider starting their own companies as a positive alternative to employment and a career path of choice - is by building a healthy entrepreneurship culture (Bowmaker-Falconer & Herrington, 2020).

A healthy entrepreneurship culture in the construction sector can only be fostered through making sure that external factors, such as government regulations, are conducive to the growth of construction businesses, and internal factors such as creativity and innovation are honed in the country through various business acceleration initiatives. However, there was a positive relationship between age and the success of entrepreneurs.

The factors highlighted impact the success entrepreneurs positively and that success can have a ripple effect on the socio-economic issues such as lack of education, unemployment and access to markets.

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APPENDIX A DATA COLLECTION INSTRUMENT

FACTORS INFLUENCING ENTREPRENEURSHIP IN THE SOUTH AFRICAN CONSTRUCTION INDUSTRY

Dear Participant

My name is Sanele Maluleke and I am a student at Wits Business School. As part of myapplied research project, I am conducting research to understand the key drivers to starting a business in the South African construction industry and also determine the factors which contribute to hindering the success of these entrepreneurs.

Thank you for agreeing to participate in this survey. Your participation in this survey is completely voluntary and consent will be implied on completion of the survey, which should not take longer than 3-5minutes to complete and you may choose to opt out at anystage. No personally identifiable information will be associated with your responses in reports of this data. Your survey responses will be strictly confidential and data from thissurvey will be reported only in the aggregate.

Should you have any questions or queries, please feel free to email me at 1891838@students.wits.ac.za or my supervisor, Azwifari Phuruvhathi at azwifarwi.phuravhathu@gmail.com

*Required

7 What is your age? *

Mark only one oval.

- 18-30
- 31-41
- 42-52
- 52-65
- 65 and above

8 Gender? *

Mark only one oval.

Male

Female

Prefer not to say

9 Ethnic group you identify with? *

Mark only one oval.

Black

Indian

Coloured

White

Other

10 Highest level of education obtained? *

Mark only one oval.

Grade 12 (Matric Certificate)

Diploma

Bachelors

Honours

Masters

Other

11 Please select the CIDB grade/s your company falls under

Tick all that apply.

- [ ] Grade 1
- [ ] Grade 2
- [ ] Grade 3
- [ ] Grade 4
- [ ] Grade S
- [ ] Grade 6
- [ ] Grade 7
- [ ] Grade 8
- [ ] Grade 9
- [ ] N/A

12 What was your occupation before starting your company?

13 How many years has your company been operating for?

Section B

Reasons for starting your business

Please rate the possible reasons for starting a business below on a scale of 1 to 5 with 1 representing the lowest reason and 5 being the highest (only select the reasons applicable to you)

14 Needed/wanted to earn extra income

Mark only one oval.

	1	2	3	4	5
Needed/wanted to earn extra income					

15 Control of own life/autonomy

Mark only one oval.

	1	2	3	4	5
Control of own life/autonomy					

16 Personal interest in area

Mark only one oval.

	1	2	3	4	5
Personal interest in area					

17 Opportunity arose

Mark *only one oval.*

	1	2	3	4	5
Opportunity arose					

18 Had enough work experience

Mark only one oval.

	1	2	3	4	5
Had enough work experience					

19 Retrenched from work

Mark only one oval.

1 2 3 4 5

Retrenched from work

20 Fairly easy industry to start a business in

Mark only one oval.

1 2 3 4 5

Fairly easy industry to start a business in

21 Had money to invest

Mark *only one oval.*

1 2 3 4 5

Had money to invest

22 Couldn't find a job

Mark only one oval.

1 2 3 4 5

Couldn't find a job

23 Took over the family business

Mark only one oval.

	1	2	3	4	5
Took over the family business					

24 If none of the reasons above apply to you, please state the reason why you started your business

Section C

The factors influencing entrepreneurship identified in literature fall within two categories:

-Internal factors which are directly linked to the individual for example their education, business skills, culture etc. most of these factors form part of the individual's personality traits and thus can be controlled internally

and

-External factors which are factors that exist outside of the individual that cannot be controlled by them

Internal and external factors can affect the performance of small business either positively or negatively. This section will assess how these factors have influenced you as entrepreneur.

Internal factors

The following questions focus on internal factors and how they influence entrepreneurs positively or negatively

Which of these internal factors do you believe are important for your success asan entrepreneur in the construction industry?(Please only choose 3 options from the list)

Tick all that apply.

- [ ] Entrepreneurial Education
- [ ] Culture
- [ ] Work Experience
- [ ] Innovation
- [ ] Risk Taking
- [ ] Creativity
- [ ] Opportunity Recognition
- [ ] Competitive Aggressiveness
- [ ] Business Skills
- [ ] Family
- [ ] Role Model
- [ ] Mentorship
- [ ] Training
- [ ] Other

25 If you selected 'other', please specify

Which of these internal factors do you feel you lack as an entrepreneur?(Please only choose 3 options from the list)

Tick all that apply.

- [ ] Entrepreneurial Education
- [ ] Culture
- [ ] Work Experience
- [ ] Innovative
- [ ] Risk Taker
- [ ] Creativity
- [ ] Opportunity Recognition
- [ ] Competitive Aggressiveness
- [ ] Business Skills
- [ ] Role Model
- [ ] Family
- [ ] Mentorship
- [ ] Training
- [ ] Other

26 If you selected 'other', please specify

External Factors

The following questions focus on external factors and how they influence entrepreneurs positively or negatively

Which of these external factors do you believe are important for your success as an entrepreneur in the construction industry? (Please only choose 3 options from the list)

Tick all that apply.

- [ ] Government Regulations
- [ ] Supportive Environment
- [ ] Co-operative environment
- [ ] Location of Business
- [ ] Access to Funding
- [ ] Shortage of skills
- [ ] Other

27 If you selected 'other', please specify

28 Which of these external factors do you believe are the reasons behind your failures (if any) as an entrepreneur in the South African construction industry? (Please only choose 3 options from the list)

Tick all that apply.

- [ ] Government Regulations
- [ ] Supportive Environment
- [ ] Co-operative environment
- [ ] Location of Business
- [ ] Access to Funding
- [ ] Shortage of skills
- [ ] Other

29 If you selected 'other', please specify

30 Between internal and external factors, which would you say has had the most impact on your business?

Mark only one oval.

31 Internal Factors

32 External Factors

33 Please share your thoughts on the challenges of being entrepreneur in the South African construction industry

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Appendix B Ethic documentation

Jacques Totowa <jacques.totowa@wits.ac.za>
Wed 2019/04/24 11:47
To:

- You

Cc:

- Thabang Mokoaleli-Mokoteli;
- Manamela Matshabaphala

Dear Colleague
WBS ethics committee met yesterday 23 April. Your ethics approval was considered. Your protocol number is: WBS/BA1891838/964

Good luck with your research.

Regards

Jacques Totowa (On behalf of Dr. Thabang)

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