

Institutional Forces and the Written Business Plan: The Case of Technology Entrepreneurs in South Africa

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ABSTRACT

For the rational entrepreneur, the investment in the creation of a business plan should lead to some economic advantage in terms of measurable business value. Conversely, the absence of a business plan should lead to poor performance of the young enterprise. Given the ubiquity of business plans, the de facto accepted hypothesis holds that among a sample of entrepreneurs, those with business plans should outperform (e.g. survival, profit, sales, growth etc.) those without.

In this study, a systematic 10-year literature review was conducted to assess the state of the empirical body of knowledge with regard to the entrepreneur's business plan. This review finds that empirical attempts to confirm the assumed relational causality in the direction from business planning to new venture performance have yielded findings that are mixed, contradictory, and inconclusive.

In the absence of clear evidence to support arguments of economic rationale, researchers have argued the importance of testing alternative rationale to explain the ubiquity of the business plan. In this study, the theory of institutionalisation was tested as an alternative to economic rationale in predicting the likelihood of an entrepreneur developing a formal business plan.

The specific setting for the research was South African information technology start-ups. A questionnaire was developed deriving constructs from prior studies in the domain. Entrepreneurs were approached directly, as well as through organisational stakeholders in the South African technology entrepreneurship environment. Respondents completed an online questionnaire, yielding a final sample of 80 valid responses. The profile of respondents was found to be generally consistent with other probabilistically-sampled studies in the population.

Corresponding with the three institutional pressures, three hypotheses were tested. Support was found for coercive pressure originating from providers of finance. The study did not find support for the hypothesised mimetic behaviour among technology entrepreneurs (mimetic force), nor for the normative force hypothesised as resulting from a tertiary-level business education. Statistical regression analysis suggested that a range of wider factors appears to be influencing the South African technology entrepreneur's decision to write a business plan.

This findings of this research offer practical implications for entrepreneurs, educators, providers of finance, and entrepreneurship researchers.

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1. CHAPTER 1: INTRODUCTION

The central aim of this research is to understand the factors that influence South African information technology entrepreneurs to expend the effort to write a formal business plan.

1.1 Purpose of the study

For the entrepreneur seeking advice to improve the likelihood of success, the intuitive, customary response is to start planning (Brinckmann, Grichnik, & Kapsa, 2010). The writing of a business plan is “an activity extensively endorsed by recent literature, venture capital firms, government support agencies, and universities” (Honig & Karlsson, 2004, p. 29). Lange, Molloy, Pearlmutter, Singh, and Bygrave (2007, p. 237) observe that “the most widely dispensed advice for would-be entrepreneurs is that they should write a business plan”.

Worldwide, it was estimated that at least 10 million business plans are written each year (Karlsson & Honig, 2009). In the USA, 78 of the top 100 universities offer courses on business plan writing (Basardien, Friedrich, & Parker, 2013). Entrepreneurship literature is awash with ‘how to’ textbooks and guides prescribing approaches to business plan development.

As a paradigm, the presumed advantages of planning continue to shape entrepreneurial behaviour, public policy, venture capital allocation, guidance dispensed to practitioners, and university and school curricula. Lange et al. (2007, p. 237) describe the business plan as “probably the most widely used teaching tool in entrepreneurship education and ‘entrenched’ in the practicing entrepreneur’s toolkit”.

Support for the entrepreneur’s business plan is premised on the belief that an early-stage venture founded with a business plan will experience some measurable economic advantage over a venture founded without a business plan (Chwolka & Raith, 2012). However, researchers have noted that empirical evidence to this effect is both scarce and contradictory (Castrogiovanni, 1996; Brinckmann, Grichnik, & Kapsa, 2010; Basardien, Friedrich, & Parker, 2013). For researchers and practitioners, indisputable evidence of the assumed relational causality in the direction from business plan to improved outcomes remains elusive.

The absence of unequivocal empirical evidence suggests that alternative mechanisms may explain the diffusion of the written business plan. Across a wide variety of disciplines, scholars have been interested in understanding the conditions and dynamics that facilitate the spread of common practices (Karlsson & Honig, 2009).

The purpose of this research is therefore to understand the factors that influence South African information technology (IT) entrepreneurs to expend the effort to write a business plan. This research uses institutional theory to derive a framework that tests the influence of institutional forces on the young technology company's behaviour with regard to the development of a formal business plan.

1.2 Context of the study

The national context for the study is the Republic of South Africa, the southernmost country in Africa. South Africa is governed as a parliamentary constitutional democracy and has an estimated population of 56 million (Statistics South Africa, 2015). Black Africans comprise the majority of the population (80.6%), followed by the Coloured (8.7%), White (8.2%), and Indian/Asian (2.6%) population groups (Statistics South Africa, 2015). The country is classified as upper middle income and nominal GDP for 2014 was estimated at \$350.1bn (The World Bank, n.d.). South Africa's socioeconomic context remains largely shaped by the historic legacy of apartheid (legalised segregation). Despite the transition to multiparty democracy in 1994, inequality between population groups is persistent and intense. The World Bank (2011) reported South Africa as having the highest Gini index among countries studied, reflecting the intensely skewed distribution of income. Government policy in South Africa must contend with both slowing levels of economic growth and high levels of unemployment (le Cordeur, 2015).

The linkages between increased entrepreneurial activity, economic growth and job creation are well established (Herrington & Kew, 2013). Accordingly, policies of the South African government emphasise the importance of stimulating and supporting entrepreneurial activity. The President of South Africa, Jacob Zuma, describes the development of the small business sector as "critical to economic development and transformation" (Department of Government Communications and Information System, 2014, para 14). The country's National Development Plan (National Planning Commission, 2012) implores the private sector to embrace entrepreneurship and outlines a vision of 2030 in which 'mass entrepreneurship' is a reality through regulatory reform and support.

However, studies from the field paint a bleak picture of South Africa's entrepreneurial landscape. Small Business Development Minister Lindiwe Zulu reported that "almost 80% of small, medium, and micro enterprises (SMMEs) fail in their first year" (SAPA, 2014, para 1) and only "half of the SMMEs that survived the first year remained in business for the next

five years” (SAPA, 2014, para 2). A report by the National Credit Regulator (2011, p. 7) comments that “SA has one of the lowest SME (small and medium enterprise) survival rates in the world”. The Global Entrepreneurship Monitor (GEM) report also found that “South Africa has an extremely high failure rate with respect to small businesses, with 70% closing in their first year” (Herrington & Kew, 2013, p. 47). Despite the intentions of government to improve conditions for new businesses, South African businesses must clearly traverse a precarious path through the inceptive stages.

High-tech companies are known to have significant potential to create jobs, contribute to economic regeneration, improve national levels of innovation, and raise international competitiveness (Berry, 1998; Gruber, 2008). Herrington and Kew (2013) also emphasise the linkage between innovative products and services and economic development. Furthermore, national technology competencies are particularly important because of the opportunity they generate for value creation in multiple markets (Gruber, 2008). The nature of technology linkages across industries is increasingly evident as further cases emerge of technology businesses disrupting traditional industries. Examples include e-commerce giant Amazon’s effect on the retail industry, taxi-hailing service Uber on the transport industry, and accommodation brokerage Airbnb on the hospitality industry. An IT industry commentator described the present situation as software “eating the world” (Andreessen, 2011).

The South African IT industry’s contribution to GDP is estimated at approximately 6% (Gilwald, Moyo, & Stork, 2012). South Africa is rated behind its BRICS partners in 70th position on the World Economic Forum’s NRI (Networked Readiness Index) measure of propensity to exploit ICT (information and communication technology) opportunities and impact of ICT on national competitiveness (Gilwald, Moyo, & Stork, 2012). The National Development Plan (National Planning Commission, 2012, p. 152) draws attention to the government’s ambitions for the ICT sector in South Africa’s path to 2030: “In support of employment and growth [...] South Africa should become a leading provider of information technology-enabled services globally, with services integrated into the region.”

A number of IT companies with South African roots or linkages are considered leaders in international markets, including operating systems (Ubuntu), messaging (Mxit), cryptocurrency (BitX), eCommerce (WooThemes, Gyft), publishing (Yola), and marketing (Click2Customers). South African IT companies have also caught the eye of international acquirers. Shuttleworth’s Thawte was acquired by Verisign in 1999 for US\$ 575m, while van Rensburg’s Fundamo was sold to Visa in 2009 for \$110m (Mawson, 2011).

In South Africa, the ICT sector accounts for only 3% of total entrepreneurial activity (Herrington & Kew, 2013). Despite this, technology entrepreneurship and 'tech start-ups' have drawn remarkable recent attention from the media, general public, private sector, and public sector. Heiman (2016, para 1) described South Africa as "in the middle of a tech start-up frenzy". IT entrepreneurs across the country are served by an increasing number of technology oriented incubators, mentorship programmes, venture capital funds, networking communities, and industry events.

The fast-moving and dynamic nature of the IT industry provides an intriguing industry setting for entrepreneurship research, particularly with regard to planning practices. Digital technologies are influencing more and more aspects of how we live whilst also reinventing the world of work. The internet has equipped technology entrepreneurs with the means to access customer, supplier and partner markets anywhere on the planet. Gage (2012, para 1) relates the prevalent perception of easy riches in the technology industry: "It looks so easy from the outside. An entrepreneur with a hot technology and venture-capital funding becomes a billionaire in his 20s." But, as a Silicon Valley technology entrepreneur describes, "the way startups are portrayed, everything seems an overnight success, but that's a disconnect from reality" (Carroll, 2014, para 6).

Strategy development in the IT industry faces environmental conditions of extreme turbulence and uncertainty (Solomons, 2010). The suitability of traditional 'industrial era' management approaches is questioned in environments directed by the 'information age' paradigm (Miralles & Giones, 2011). Under such conditions, scholars have long been conflicted as to whether conventional planning approaches, including the formal business plan, are desirable, realistic, or even feasible (Berry, 1998; Bhide, 2000; Bracker, Keats, & Pearson, 1988; Delmar & Shane, 2003; Lange, Mollov, Pearlmutter, Singh, & Bygrave, 2007).

In drawing doubt to the value of the formal business planning, the information technology industry has also provided the most enduring anecdotal cases. Jobs' Apple and Gates' Microsoft are famous cases of entrepreneurial successes emerging from opportunistic rather than formally planned origins (Castrogiovanni, 1996). More recently, technology entrepreneurs Page and Brin (Google) and Zuckerberg (Facebook) have become renowned as entrepreneurs whose ventures were started without a formal business plan (Hunter, 2012; Lange, Mollov, Pearlmutter, Singh, & Bygrave, 2007). Given how these cases have been entered into technology industry lore, researchers might reasonably expect to discover anomalistic planning behaviours in the IT industry as compared to other industries.

The convergence of these factors – challenging national entrepreneurship environment, highly dynamic industry, intense public interest, and anecdotal evidence against planning - provides an intriguing context to explore the planning behaviours of information technology entrepreneurs.

1.3 Research question

“Overall, there appears to be a planning euphoria in the entrepreneurship domain. But what if the broadly propagated assumption that business planning increases venture success is wrong?” (Brinckmann, Grichnik, & Kapsa, 2010, p. 25)

Given the ubiquity of business plans in the entrepreneurship domain, scholars and practitioners should reasonably expect to discover a compelling base of empirical evidence positively relating business planning to enhanced economic outcomes for the young firm. Such empirical evidence would validate the widely posited linkage between business planning and one or more desirable outcomes e.g. greater efficiency, greater profits, competitive advantage, a higher likelihood of survival (Honig & Karlsson, 2004). However, it is here one finds “the most and surprisingly persistent disagreement among researchers” (Chwolka & Raith, 2012, p. 386).

In 2004, Honig and Karlsson reviewed the state of empirical research into the economic evidence for the entrepreneur’s business plan. Those authors described the empirical body as ‘contradictory’ and ‘inconclusive’. Furthermore, those authors (Honig & Karlsson, 2004, p. 29) highlighted the scarcity of empirical analysis of the association between business plans and performance and argued that “the value and positive effects of business plans have been taken for granted rather than critically studied”.

In the absence of unequivocal evidence for the argument of economic rationality, Honig and Karlsson (2004) proposed that there is merit in testing alternative rationales as a method for understanding why business plans have attained such a widely ‘taken for granted’ status. A model was developed and tested in which the theory of institutionalisation was used to detect the strength of isomorphic forces as they influence a young organisation’s decision to write a business plan.

Considering the fact that the noted research was conducted over a decade ago, a preliminary research question arises:

In the decade since Honig and Karlsson (2004) published 'Institutional forces and the written business plan', has substantive empirical evidence emerged to confirm the economic rationale for writing a business plan?

This preliminary research question will be considered meta-analytically by means of a systematic literature review of peer-reviewed, published works in the period between 2005 and 2014.

If the findings of this systematic review indicate that empirical consensus remains elusive, a valid research agenda is established for the study's primary research question:

In the absence of empirical evidence for the economic rationale, to what extent can the theory of institutionalisation be used to explain the start-up's decision to write a business plan?

This research question is consistent with the aims of Honig and Karlsson's study (2004). However, the scope and setting of this research differs significantly. Whereas that study was conducted across multiple industries in Sweden, this study explores the question in the specific case of the South African information technology industry.

Thus, the primary research question is further refined as:

In the absence of empirical evidence for the economic rationale, to what extent does the theory of institutionalisation explain the South African information technology start-up's decision to write a business plan?

1.4 Significance of the study

This study contributes to the literature in that there is a scarcity of research in the entrepreneurship field on antecedents to the development of a business plan. Whilst extensive research (Gartner & Liao, 2005; Allred & Addams, 2006; Mainprize & Hindle, 2007; Lange, Mollov, Pearlmutter, Singh, & Bygrave, 2007; Schulte, 2009; Bewayo, 2010; Fernandez-Guerrero, Revuelto-Taboada, & Simon-Moya, 2012) has been conducted to evaluate the outcomes of business planning and business plans, far less is known about the factors that precede the development of a business plan (Honig & Karlsson, 2004; Bewayo, 2010).

Entrepreneurs are confronted with a plethora of normative advice regarding the benefits of business planning (Karlsson & Honig, 2009), despite observations that “this research area does not seem to be very well explored” (Schulte, 2009, p. 4). Brinckmann et al. (2010, p. 37) suggest that “research on business planning is a fertile field of entrepreneurial research and further analysis in this field appears promising”. Gruber (2007, p. 803) observes that “much work, however, remains to be done to fully understand the complexities of business planning”. Falshaw et al. (2006, p. 24) notes that “clearly much more needs to be done in future research”, while Lange et al. (2007, p. 253) remark that the topic of business plans “cries out for more research”.

Very little is known about the nature and drivers of business planning practices among South African technology entrepreneurs. Technology entrepreneurship is most often considered in advanced economies and high-tech centres like Silicon Valley. Less is known about the behaviours of entrepreneurs in contexts characterised by high business mortality, constrained resources, weak capital markets and low levels of entrepreneurial experience (Karlsson & Honig, 2009). The South African technology entrepreneur, in that sense, is a research subject with far more in common with the majority of technology entrepreneurs worldwide.

Much of the research conducted in the entrepreneurship domain with regard to planning behaviours is retrospective and relies on the entrepreneur’s individual recollection of prior periods or events in the firm’s history (Schulte, 2009). This cross-sectional study of active entrepreneurs examines current practices and, as such, is not affected by the selective perception bias that challenges retrospective approaches.

Efforts to understand the propensity of entrepreneurs to write business plans are challenged by selection effects arising from differences in business context (Burke, Fraser, & Greene, 2010). To a certain extent, by studying the phenomenon in a single industry (i.e. information technology industry), this study controls for contextual effects. Lumpkin et al. (1998) highlight the influential role of industry conditions in planning relationships. Miralles and Giones (2011) recommend research to explore the planning phenomenon in different business environments. Karlsson and Honig (2004) point to the importance of understanding the behaviours of entrepreneurs in different environments facing different task pressures.

In support for research in the South African setting, most of the prior planning-performance research in the entrepreneurship field has been conducted in the context of developed economies (Borges, Hashimoto, & Limongi, 2013). Following this, Miralles and Giones (2011) encourage continued research in different geographic locations. Moreover, Karlsson

and Honig (2009) observe that “much of the literature, advice, and business plan education is based on taken-for-granted presumptions about the local business environment”. Entrepreneurial behaviours and tolerance toward risk are also known to differ across cultures (Basardien, Friedrich, & Parker, 2013; Brinckmann, Grichnik, & Kapsa, 2010; Herrington & Kew, 2013).

The educational environment is a critical dimension that influences entrepreneurial activity and behaviours. In South Africa, tertiary education institutions are increasingly called to increase their efforts to promote entrepreneurship education (Herrington & Kew, 2013; National Planning Commission, 2012). The debate has expanded from how entrepreneurship should be taught in schools of commerce, to how entrepreneurship can be integrated into the programmes and courses of all university faculties (Brijlal, 2011). The business plan traditionally features as a core component of pedagogic approaches to entrepreneurship skills development at the tertiary level (Zimmerman, 2012). This research on the behaviour of practicing entrepreneurs is well-timed as South African higher education institutions intensify efforts to promote entrepreneurship.

The study aims to provide insights regarding written business plans to stakeholders in the South African IT sector, this includes entrepreneurs, institutional providers of finance, educators and researchers.

1.5 Research objectives

This study uses the theory of institutionalisation as a model to investigate the factors that lead South African information technology start-ups to develop a formal business plan. The aim of this research study is to develop and test a model of institutional pressures that predicts the technology start-up’s decision in this regard. To achieve this aim, the research has three primary objectives:

Firstly, to assess the economic rationale for business plan development through an analysis of the current planning-performance empirical body. If empirical support for the economic rationality of business plan development is equivocal, then a valid basis is established to test alternative rationale to the economic rationale.

Secondly, to develop, operationalise and report on a research model that uses the theory of institutionalisation to predict the propensity of a South African technology start-up to develop a formal business plan.

Finally, as an applied study, the research seeks to report insights and implications as they relate to stakeholders within the South African IT industry.

1.6 Assumptions and limitations

The following assumptions have been made regarding the study:

- The study's findings are based on self-reported information that cannot be independently verified. The study assumes respondents will provide truthful responses.
- No prior South African studies were identified in which the theory of institutionalisation was used to predict the propensity of a new organisation to develop a business plan. This limits the researcher's ability to contrast the findings of this study.
- The study's ethical considerations are detailed in Chapter 3: Research Methodology.

1.7 Delimitations

The research was conducted within the following framework of delimitations:

- The scope of the study was limited to the business planning behaviour of nascent and new South African companies in the IT sector.
- The scope of the research was limited to antecedents to the development of a formal business plan. The scope excludes outcomes of business plan development.
- The research instrument was principally derived from prior research, and is thus subject to similar strengths and weakness as the original instruments.
- The analysis method was derived from prior research, and is thus subject to similar strengths and weakness.

1.8 Definitions

The interpretation of the study relies on the application of the following definitions:

- Start-up – a for-profit enterprise that meets the Global Entrepreneurship Monitor (Herrington & Kew, 2013) definition for either a 'nascent' entrepreneur or 'new' business.

- Technology – when used without additional context is read to mean ‘information technology’ as commonly defined.

1.9 Organisation of this report

The background to the research, research problem, aims and objectives, and significance of the research were discussed in Chapter One.

The remainder of the report consists of the following chapters:

Chapter Two presents a review of the general literature that contextualises this study. Thereafter, a systematic literature review is conducted into the empirical evidence for the planning-performance linkage in new firms. The theory of institutionalisation is introduced as the theoretical lens guiding this study. Thereafter, hypotheses relating institutional pressures to business planning behaviour are developed. Control variables are identified and discussed, leading to the presentation of the study’s overall research model.

Chapter Three describes the research methodology, including research paradigm and purpose, research strategy, population and sampling, research instrument, approach to reliability and validity, and approach to statistical analysis and hypothesis testing.

Chapter Four presents and discusses the results of the study, detailing the data gathering process, sample profile, descriptive statistics, hypothesis testing, and concludes with the development and evaluation of multivariate regression models.

Chapter Five concludes the report with a summary of the study, a discussion of the limitations, and concludes with implications for research and practice.

A table of references is provided, as well as various appendices.

2. CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

This chapter presents the review of literature that was undertaken in support of this research and towards the development of the research model.

This chapter commences by introducing business planning and business plans in the entrepreneurial context. The literature that advances theoretical arguments in favour of entrepreneurial planning is explored. Thereafter, a 10-year systematic literature review is conducted to determine the current state of evidence for the planning-performance linkage. The findings of this review are considered with respect to the literature.

Institutional theory is then introduced as the theoretical framework guiding this study. The research hypotheses and constructs are developed as they relate institutional theory to the phenomenon of interest. Finally, the total conceptual view of the research model guiding this study is presented.

2.2 Entrepreneurial Planning

2.2.1 *Foundation and Origins*

The entire field of strategic management relies on the foundational assumption that planning has a positive impact on performance (Lumpkin, Shrader, & Hills, 1998). Through explicit planning processes, rather than haphazard guesswork, organisations are able to collect and interpret information that improves alignment between the organisation and its environment (Miller & Cardinal, 1994). For the profit-motivated organisation, planning is expected to produce better financial results than trial-and-error learning (Lumpkin, Shrader, & Hills, 1998).

Systematic planning approaches in organisational contexts derive general philosophical support from goal setting theory (Shane & Delmar, 2004). Goal setting theorists argue that an individual's actions are regulated by his conscious intentions (Latham & Yukl, 1975). Through a series of controlled laboratory experiments, researchers observed that individual performance was higher in cohorts with difficult, specific goals, than in cohorts with no goals, non-specific goals, or easy goals (Locke, 1968). These findings have been used to reason that planning, an act through which goals are established, is proven to improve "most subsequent human action" (Shane & Delmar, 2004, p. 768). Planning, in the organisational

context, provides a framework for subsequent action and thus facilitates the achievement of goals (Solomons, 2010).

Contemporary approaches to business planning are traced to the popularisation of 'formal strategic planning' (FSP) in the 1960's and 1970's. Formal strategic planning has been discussed under various labels, including 'corporate planning', 'long range planning', and 'strategic management' (Falshaw, Glaister, & Tatoglu, 2006). Whilst approaches varied, all posited that planning is central to achieving organisational aims (Pearce II, Freeman, & Robinson Jr., 1987). One author described the management of any profit-seeking organisation as "delinquent if they do not engage in fully integrated long range planning" (Karger, 1975, p. 60). Another author described strategic planning as inextricably interwoven into the entire fabric of management" (Steiner, 1979, p. 3).

Arguments for strategic planning have intuitive appeal, and in the subsequent decades have found extensive favour among researchers and practitioners (Miller & Cardinal, 1994). Consequently, there has been a proliferation of resources advancing planning models, planning processes, and techniques for designing and implementing strategic plans (Lumpkin, Shrader, & Hills, 1998). The popular theoretical arguments advancing formal planning techniques for established firms have spread explicitly to the entrepreneurial context (Gruber, 2007).

2.2.2 Business Planning and Business Plans

For new firms, formal, systematic, prediction-oriented planning is expected to lead to superior firm performance (Brinckmann, Grichnik, & Kapsa, 2010). Conversely, a lack of planning is expected to lead to poor performance for young enterprises (Schulte, 2009).

Planning in the entrepreneurial context is described as "the process by which the entrepreneur, in exploiting an opportunity, creates a vision of the future and develops the necessary objectives, resources, and procedures to achieve that vision" (Castrogiovanni, 1996, p. 803).

For the entrepreneur, planning is expected to reduce uncertainty, improve the use of resources, increase decision-making speed and quality, control subjectivity, and enhance flexibility (Brinckmann, Grichnik, & Kapsa, 2010; Borges, Hashimoto, & Limongi, 2013). The usefulness of planning is believed to increase in scenarios where tasks are uncertain or fuzzy, and it is not possible for the decision maker to rely on habit or experience (Shane &

Delmar, 2004). This uncertainty-reduction benefit of planning is especially crucial given the typically complex and uncertain environment that confronts the entrepreneur (Borges, Hashimoto, & Limongi, 2013).

Planning can be conducted in various forms and at different levels of formality. This ranges from mentally in the entrepreneur's head, through semi-structured approaches at varying levels of formalisation, through to captured in detail in written format (Borges, Hashimoto, & Limongi, 2013).

Goal setting theory, from which planning derives philosophical origins, posits that the writing of the plan yields improvement in subsequent human action (Shane & Delmar, 2004). The writing of the plan clarifies the goals, increases specificity of objectives, enhances learning, focuses attention on the most appropriate tasks, improves quality of analysis, and facilitates communication with others on the intended course of action (Shane & Delmar, 2004). On this basis, proponents of planning have argued that it is the written plan in detailed format that is most helpful to the entrepreneur in the achievement of targets (Borges, Hashimoto, & Limongi, 2013). This written plan, in the entrepreneurial context, is discussed as the 'business plan'.

2.2.3 Examining the Business Plan

The writing of a business plan has become "probably the most widely taught theme in entrepreneurial education" (Borges, Hashimoto, & Limongi, 2013, p. 350). Business plans are ubiquitous in the entrepreneurship domain. Search engine enquiries for 'what is a business plan', 'writing a business plan' and 'how to write a business plan' all return in excess of 500,000 website results (Google, 2015). Brinckmann et al. (2010, p. 25) observe that "store bookshelves abound with books on how to prepare a business plan".

Timmons' widely taught entrepreneurship text, *New Venture Creation*, places the business plan as the central construct in the entrepreneur-opportunity-resources planning model (Lange, Mollov, Pearlmutter, Singh, & Bygrave, 2007). Entrepreneurial best practice "dictates that entrepreneurs must engage in formal planning to develop well thought-out, written business plans" (Lumpkin, Shrader, & Hills, 1998, p. 1). Delmar and Shane (2003, p. 1165) explicitly link entrepreneurial planning with the creation of a business plan: "business planning [is] the processes of gathering and analysing information, identifying risks and strategy, projecting financial developments, and documenting these things in a written plan".

Given the proliferation of business plan literature, researchers are challenged to synthesize a universal definition. Timmons (1980, p. 28) describes the business plan as “a unique opportunity to think through all facets of a new venture” and a mechanism for “examining the consequences of different strategies and tactics, and determine the human and financial requirements for launching, and building the venture, all at no risk or cost”.

Fernandez et al. (2012, p. 2403) define a business plan as “a written document that systematically, and in an orderly fashion, details a firm’s strategic and operative aspects, and should therefore allow for the assessment of a business project’s economic, financial, commercial and legal administrative viability.” A business plan articulates “what the opportunity conditions are, why the opportunity exists, the entry and growth strategy to seize it, and why you and your team have what it takes to execute the plan” (Lange, Mollov, Pearlmutter, Singh, & Bygrave, 2007, p. 241).

A business plan is “a mechanism used to project the firm into the future, to foresee difficulties and to identify possible solutions for the different situations that may arise, and makes it possible to reduce the project’s risks by making decisions with more and better quality information” (Fernandez-Guerrero, Revuelto-Taboada, & Simon-Moya, 2012). A business plan is “a written document that describes an organisation’s present state and its plans to achieve some desired future state through an articulation of its vision, mission, strategy, tactics, and goals/objectives” (Zimmerman, 2012, p. 727).

Techniques for authoring business plans are ubiquitous in entrepreneurship texts and popular practitioner literature. These vary widely in both analytical depth and analytical breadth. To illustrate the typical nature of entrepreneurial business plans and the variation between prescribed formats, examples of business plan documents are included as Appendix C: Sample Business Plan Formats.

Irrespective of the business plan structure and format, the activity of developing a formal business plan is not without cost, whether direct, indirect, or opportunity. Timmons (1980) suggested that the development of a business plan can take between 200 and 300 hours. Honig (2004) describes a typical business plan as 20 to 40-plus pages, and containing up to ‘200 essential points’. The development of a business plan is a ‘laborious task’ that should realistically take “200 or more hours” (Lange, Mollov, Pearlmutter, Singh, & Bygrave, 2007, p. 238). Given the resource scarcity that typifies the entrepreneurial context, the validity of the arguments linking the development of a business plan with enhanced venture performance are critical.

2.2.4 The Economic Rationale

Proponents of business planning in the entrepreneurial context have suggested numerous mechanisms that give rise to planning's positive economic benefit. Castrogiovanni (1996) proposed that the theoretical propositions linking entrepreneurial planning with positive economic outcomes can be considered in three categories: efficiency benefits, learning benefits, and symbolism benefits. That framework guides a review of the literature which links business planning, in the entrepreneurial context, with positive economic outcomes.

Efficiency encompasses arguments for business planning insofar as planning guides the emerging organisation. Under conditions of resource scarcity, planning allows the start-up to streamline the flow of resources, minimise bottlenecks, and reduce the cost of testing assumptions (Delmar & Shane, 2003). Planning helps the entrepreneur to match the supply and demand of resources and estimate the timing of resource flows (Gruber, 2007). Planning allows the entrepreneur to identify critical milestones which guides the commitment of resources and focuses the attention of stakeholders (Delmar & Shane, 2003). Planning increases operational readiness and leads to improved internal communication and coordination between actors inside the new organisation (Castrogiovanni, 1996). In causal sequence, a higher degree of planning generates an efficiency benefit, which generates an economic benefit.

Learning encompasses arguments for increased planning insofar as it enables better decision-making. Planning "expands the founder's knowledge about the intended business and reduces decision-making uncertainty" (Brinckmann, Grichnik, & Kapsa, 2010, p. 28). Through the planning process, the entrepreneur acquires knowledge on the nature of the opportunity, viability of the venture, market conditions, and risks (Castrogiovanni, 1996). Increased planning allows the entrepreneur to approach risk with a better understanding of the relationships between intention, action, and performance (Solomons, 2010). As a consequence of increased knowledge, the founder is able to act with greater insight, adaptability, and intuition (Castrogiovanni, 1996). In causal sequence, increased business planning positively enhances a founder's knowledge about the business, which generates an economic benefit.

Symbolism encompasses arguments for business planning insofar as it legitimises the new venture and improves communication with external stakeholders (Castrogiovanni, 1996). The start-up phase of most new ventures is characterised by negative cashflows (Rotger, Gortz, & Storey, 2012). To fund this initial phase of negative cashflows, entrepreneurs will frequently engage external financiers or investors. To assess the proposed venture's

likelihood of success, financiers usually require the entrepreneur to prepare a formal business plan for their scrutiny (Castrogiovanni, 1996). The business plan, an outcome of planning, facilitates the flow of communication between the entrepreneur and potential financiers and increases the likelihood of securing finance (Castrogiovanni, 1996). As inability to access finance is reported as the leading cause of new firm failure (Fatoki & Odeyemi, 2010), increased planning should increase the likelihood of new firm survival. In causal sequence, increased business planning positively effects access to financing, which positively effects new venture survival.

Figure 1 shows the theoretical linkages described between the degree of business planning, planning benefits, and venture survival, where venture survival is emphasised as both an independently desirable outcome and also necessary precondition to other desirable outcomes like growth, profitability, and competitive advantage.

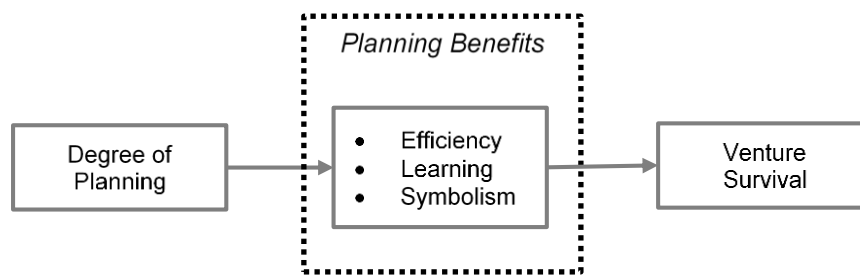


Figure 1: Theoretical Linkages (Castrogiovanni, 1996)

Efforts to explain the diffusion of the formal business plan emphasise the economic rationality of business planning in terms of these theoretical linkages (Honig & Karlsson, 2004). If business planning is empirically known to yield positive economic outcomes, then the development of a business plan is explained as a behaviour directed by economic rationality.

The rational view posits that the entrepreneur is a rational economic actor and that planning firms will be empirically shown to outperform non-planning firms. From this perspective, entrepreneurs that write business plans will derive some advantage (profitability, survivability, efficiency etc.) therefrom, as compared to entrepreneurs that do not plan (Chwolka & Raith, 2012). Taken cumulatively, these benefits signal to the market the positive attributes of business planning, thus establishing the economic rationale for the decision to write a business plan (Honig & Karlsson, 2004).

In 2004, Honig and Karlsson considered the empirical body with regard to the association between business planning and business performance for new firms. Four studies were considered, as shown in Table 1.

| Source | Performance Measure | Association |
|----------------------------------|----------------------------|--------------------|
| Bracker, Keats, & Pearson (1988) | Financial Performance | Positive |
| Schwenk & Shrader (1993) | Composite Constructs | Positive |
| Boyd (1991) | Composite Constructs | Null |
| Robinson & Pearce (1983) | Financial Performance | Null |

Table 1: Planning and Performance in New Firms (Honig & Karlsson, 2004)

Honig and Karlsson (2004) drew attention to both the ‘inconclusive’ nature of these empirical results, and also the scarcity of research testing the economic basis for business planning in the context of new firms. Given the weak empirical basis for arguments of economic rationality, the authors observed that “despite their ubiquity, a serious research gap exists regarding why new organisations write business plans” and that “the value and positive effects of business plans have been taken for granted rather than critically studied” (Honig & Karlsson, 2004, p. 29). On this basis, Honig and Karlsson (2004) proposed that the diffusion of the written business plan in entrepreneurial contexts is perhaps better explained by theories other than economic rationality.

The next section conducts an investigation into the present (2014) status of the empirical body with regard to the association between planning and performance in the case of new firms. Specifically, it aims to establish whether the past decade has delivered the empirical basis for economic rationality that was absent in 2004.

2.3 Testing the Economic Rationale

A systematic literature review was undertaken to determine the extent to which the empirical evidence has been found for the entrepreneurial planning-performance linkage in the period between 2005 and 2014. A systematic literature review is a “means for evaluating and interpreting all the available research that is relevant to a particular research question, topic area, or phenomenon of interest” (Aversano, Grasso, & Tortorella, 2012, p. 464). In this case, the topic of interest is the association between business planning and performance in the case of new firms.

Kitchenham, Mendes, and Travassos (2006) describe a two phase approach to conducting a systematic literature review. In the initial phase, a keyword search is conducted against electronic journal databases to identify a set of primary publications. This is followed by a secondary phase in which references of the publications identified in the primary phase are reviewed to identify other published works which may also be relevant. Levy and Ellis (2006) similarly describe an approach to systematically reviewing literature whereby an initial ‘keywords search’ is followed by a ‘backward search’ using references contained in the articles identified during the keyword search.

2.3.1 Phase 1

Given that the topic of interest (i.e. planning and performance in new firms) straddles multiple disciplines, including management, strategy, entrepreneurship, finance, and economics, a database-centric search approach would likely yield an incomplete or biased result set. Thus, a meta-database was sought for widest breadth of coverage across individual databases. The Google Scholar meta-database was selected as it is reported to index the highest percentage (87%) of total published English scholarly documents (Khabisa & Giles, 2014). Among others, this meta-database indexes published works from EBSCOhost Business Source Premier, Emerald, Taylor & Francis, ACM Digital Library and SpringerLink.

A search was conducted for scholarly documents published between 2005 and 2014 (inclusive) in which the title contained one or more of the following keywords:

- *“entrepreneurial planning”*
- *“business planning”*
- *“start-up planning”*
- *“business plan”*
- *“business plans”*

A result set of n=1,440 search results was returned. To identify articles of a threshold academic quality, a set of quality-oriented eligibility criteria (Kitchenham, Mendes, & Travassos, 2006; Dyba & Dingsoyr, 2008) was developed. The following quality eligibility criteria were defined:

- Contributions of an empirical nature (i.e. exclude textbooks, reports, patents, industry reports, position papers, posters, theses, theoretical contributions, correspondence, interviews etc.)
- Published in a peer-reviewed journal or conference proceeding
- A minimum of 7 peer citations

In addition to quality-oriented eligibility criteria, a set of relevance criteria (Dyba & Dingsoyr, 2008) were used to further refine the result set to articles of relevance in this study:

- Research conducted to test the relationship between planning and one or more performance outcomes (e.g. survival, profitability, sales etc.)
- Research is conducted in the entrepreneurial context i.e. excludes studies examining planning-performance linkages in mature firms
- Original empirical research, using either quantitative or qualitative methods
- The research context is profit-motivated firms i.e. exclude social enterprises, public-sector organisations, and non-profits

The titles of results returned in the search listings were reviewed to identify candidate sources of relevance to this study. These candidate sources were thereafter individually reviewed in terms of the publication source, citation count, abstract and keywords to confirm conformance with the defined quality and eligibility criteria. After analysing the result set, a set of 12 primary studies was identified.

2.3.2 Phase 2

In the second phase, the references contained in the publications identified in the first phase were reviewed to identify other potentially relevant publications. This method of organically expanding the base of literature “enables the researcher to extend his or her knowledge even deeper on the phenomenon under study” (Levy & Ellis, 2006, p. 191). Through this process, a further four papers were identified that satisfied the same quality and relevance criteria used in the first phase. Thus, the final count of studies identified through the systematic literature review was n=16.

Thereafter, the articles identified were reviewed in terms of the performance measure used and the nature of the planning-performance association. For each article, the general finding with respect the planning-performance linkage was critically appraised as positive (i.e. planning associated positively with performance), negative (i.e. planning associated negatively with performance), variable (i.e. a conclusive association was not determined), or null (i.e. no association was observed). Unlike a quantitative meta-analytical review, this method cannot report statistical power of results. However, the purpose of the review is to descriptively, rather than quantitatively, understand the general status of the empirical body with regard to the topic of interest.

Table 2 shows the results of this appraisal in chronological order of year published:

| Source | Performance Measure(s) | Association |
|--|------------------------------------|--------------------|
| Gartner and Liao, (2005) | Survival | Positive |
| Van Gelderen, Thurik, and Bosma, (2005) | Survival | Variable |
| Yusuf and Saffu, (2005) | Growth | Null |
| Allred and Addams, (2006) | Access to Funding | Positive |
| Haber and Reichel, (2007) | Revenue Growth and Employee Growth | Null |
| Mainprize and Hindle, (2007) | Access to Funding | Positive |
| Kraus and Shwarz, (2007) | Employee Growth | Positive |
| Lange, Mollov, Pearlmutter, Singh, and Bygrave, (2007) | Financial Performance | Null |
| Gruber, (2007) | Marketing Performance | Positive |
| Chen, Yao, & Kotha, (2009) | Access to Funding | Positive |
| Karlsson and Honig, (2009) | Resource Acquisition | Null |
| Dencker, Gruber, and Shah (2009) | Survival | Negative |
| Dimov, (2010) | Survival | Null |
| Bewayo, (2010) | Access to Funding | Positive |
| Honig & Samuelsson, (2012) | Financial Performance | Null |
| Fernandez-Guerrero, Revuelto-Taboada, and Simon-Moya, (2012) | Survival | Null |

Table 2: Results of Systematic Literature Review

The mixed results observed in the findings of the systematic literature review suggest that the evidence for planning-performance linkages for new firms has remained equivocal in the decade subsequent to 2004. Notably, given the weighted emphasis on business plans and business planning in entrepreneurship education and practice, the observed number of studies testing the benefits thereof remains remarkably small. Fernandez-Guerrero et al. (2012, p. 2413) similarly concluded that “the scant literature available on this issue provides patently contradictory results”.

2.4 Deciphering the Discord

The contradictory findings observed (Table 2) with regard the effect of planning in the entrepreneurial context are unlikely to surprise entrepreneurship scholars. In the formative period of the entrepreneurship field, Mintzberg (1987, p. 26) famously wrote that “setting oneself on a predetermined course in unknown waters is the perfect way to sail straight into an iceberg”.

The theoretical and applied foundations of formal planning in the entrepreneurial context were principally derived from the FSP literature (Gruber, 2007). However, the FSP literature was notably criticised as failing to “conceptualise and operationalise strategic management practices in small firms in an adequate fashion” (Bracker, Keats, & Pearson, 1988, p. 592). Robinson (1982) noted that the majority of planning models in literature had been developed for large, publicly-held firms, and may be ‘inappropriate’ for new firms. Castrogiovanni (1996, p. 802) noted that “students of entrepreneurship have long argued that planning processes and their effects differ (and should differ) between small and large businesses.”

Mintzberg (1987) argued that the strategic planning approaches prescribed for established firms are inappropriate for new firms given the high level of environmental turbulence that characterises the entrepreneurial context. Entrepreneurs must, on average, contend with a higher levels of uncertainty than decision-makers in larger, more mature firms (Gruber, 2007). Unlike established firms, entrepreneurs are not able to base their plans on knowledge of past performance, historical trends, and other accumulated information. Given the extent to which planning inputs are missing, ambiguous or inaccurate, entrepreneurial planning is necessarily characterised by a high ratio of assumption to knowledge (Gruber, 2007).

Under such circumstances, formal planning leads to “a false illusion of control that decreases the organization’s receptiveness to signals from the environment or even from within the organization” (Dencker, Gruber, & Shah, 2009, p. 531). Formal planning becomes a source of inertia to the young firm, reducing responsiveness to environmental change and hindering the adaptive learning processes that are essential under conditions of uncertainty (Dencker, Gruber, & Shah, 2009; Gruber, 2007). The inertia that results from formal planning is especially harmful to the young firm who “may be in the process of creating a market niche and/or trying to understand where in the competitive landscape they might best fit in” (Dencker, Gruber, & Shah, 2009, p. 531). Formalised planning in the new firm introduces unnecessary bureaucracy, robbing the firm of flexible and fluid internal communication (Berry, 1998). Planning also has a high opportunity cost in terms of the founder’s time, distracting the entrepreneur from other activities that may be more critical to the success and

survival of the firm e.g. buying equipment, leasing premises, hiring employees (Bhide, 2000; Burke, Fraser, & Greene, 2010; Gruber, 2007).

The diverging perspectives on the nature and value of formal planning has given rise to two schools of entrepreneurship: the 'planning school' and the 'learning school' (Borges, Hashimoto, & Limongi, 2013; Brinckmann, Grichnik, & Kapsa, 2010; Solomons, 2010). The former contends that predictive, detailed, formal planning is even more desirable in the uncertain and complex entrepreneurial setting (Borges, Hashimoto, & Limongi, 2013; Brinckmann, Grichnik, & Kapsa, 2010). The latter argues that formal planning should be minimal in emerging firms (Castrogiovanni, 1996) and that strategy formulation should be flexible, adaptive and emergent based on learning feedback between the plan formulator and the plan implementer (Brinckmann, Grichnik, & Kapsa, 2010; Toma, 2008). The bodies of literature advancing arguments for the respective schools are vast, and consensus among scholars does not appear imminent.

In the entrepreneurship context, the written plan prescribed by the planning school "generally takes the form of a written business plan" (Borges, Hashimoto, & Limongi, 2013, p. 351). Though, as shown, the empirical evidence for the economic rationale for business planning in the entrepreneurial context is reasonably described as equivocal. Despite this, researchers (Bhide, 2000; Lange, Mollov, Pearlmutter, Singh, & Bygrave, 2007; Shane & Delmar, 2004) have highlighted the extent to which the writing of a business plan is entrenched as the keystone of entrepreneurial education and practice.

Honig and Karlsson (2004) suggested that the widespread diffusion of the written business plan warrants investigation through theoretical lenses other than strict economic rationality. Consistent with Honig and Karlsson (2004), this research contends that alternative theories to economic rationality can possibly yield important insights regarding the factors driving entrepreneurs to write formal business plans.

2.5 Theory of Institutionalisation

Gruber (2007, p. 785) notes that formal business planning in the entrepreneurial context runs “the risk of becoming a meaningless ritual instead of an activity that services a specific purpose”. Karlsson and Honig (2009, p. 29) describe the writing of a formal business plan as “a persistent, widely-observed and non-economically rational” activity that bares the ‘signature marks’ of highly institutionalised behaviour.

Researchers (Castrogiovanni, 1996; Honig & Karlsson, 2004; Karlsson & Honig, 2009) have suggested that the theory of institutionalisation may provide an appropriate theoretical basis to understand the factors that lead entrepreneurs to write formal business plans.

Thus, support is found for the primary research question that frames this study:

In the absence of empirical evidence for the economic rationale, to what extent does the theory of institutionalisation explain the South African information technology entrepreneur’s decision to write a business plan?

Institutional theory is appropriate for scenarios when the researcher seeks to understand why there is ‘startling’ homogeneity of practices among organisations (DiMaggio & Powell, 1983). An institutional theory perspective allows the researcher to understand “why organisations seem not only to take things for granted, but also why assumptions spread and make organisations more similar” (Honig & Karlsson, 2004, p. 30). The theory of institutionalisation provides researchers with an understanding of how and why certain practices diffuse in a given setting (Meyer & Rowen, 1977).

Institutional theory contends that the process of diffusion may be “driven by the need to conform and imitate rather than just by rational decision making and technological processes” (Bjorck, 2004, p. 3). In the case of this research, it is proposed that the phenomenon of interest (i.e. the writing of a formal business plan) diffuses as the result of this need to conform and imitate, rather than because the activity leads to practical benefits (e.g. survival, increased profitability, competitive advantage etc.).

Institutionalisation describes “the processes by which social processes, obligations, or actualities come to take on a rule-like status in social thought and action” (Meyer & Rowen, 1977, p. 341). Institutional theory proposes that firms homogenise through a process of isomorphism. Isomorphism is a “constraining process that forces one unit in a population to resemble other units that face the same set of environmental conditions” (DiMaggio &

Powell, 1983, p. 149). Three analytically distinct mechanisms are identified through which isomorphic pressure is applied: coercive, mimetic and normative (DiMaggio & Powell, 1983).

In organisational research, institutional theory has been acknowledged as a powerful and legitimate explanation to account for the influence of external actors on organisational decision-making (Liang, Saraf, Hu, & Xue, 2007). In the IS/IT (information systems / information technology) domain, scholars are also supportive of the role that institutional theory can play in deriving meaningful insights into phenomena of interest (Tingling & Parent, 2002). IS/IT studies in which the theory of institutionalisation has been used include Tingling and Parent (2002), Teo, Wei, and Benbasat (2003), Bjorck (2004), Liang, Saraf, Hu, and Xue (2007) and Ravichandran, Han, and Hasan (2009).

The following section develops the hypotheses of this study with respect to the three isomorphic forces described by the theory of institutionalisation. For each hypothesis, the isomorphic force is related to the South African technology start-ups propensity to prepare a formal business plan.

2.6 Hypothesis Development

2.6.1 Coercive Isomorphism (H1)

Coercive isomorphism results from “pressures exerted upon an organization by other organizations upon which they are dependant” (Tingling & Parent, 2002, p. 118). These pressures by exogenous forces may be felt as force, persuasion, or invitations to join in collusion (DiMaggio & Powell, 1983). In the general case of the technology start-up’s planning behaviour, it is expected that coercive pressure will increase the likelihood of developing a formal business plan.

H1: Greater coercive pressure will lead to a higher propensity to prepare a formal business plan.

In the case of the South African technology entrepreneur, there is no law or government mandate that obligates a new business to prepare a written plan.

However, for firms that are beginning or newly established, the resources available rarely match those required (Rotger, Gortz, & Storey, 2012). In order to survive the start-up period when cash flows are typically negative, new organisations frequently seek external financial support (Rotger, Gortz, & Storey, 2012). The new venture may seek financing from

institutional providers such as banks, government agencies, and venture capitalists, or from non-institutional actors such as family, friends, and individual (or 'angel') investors.

Bewayo (2010) showed that, in terms of the formal business plan, the planning practices of entrepreneurs differs depending on whether they are seeking institutional or non-institutional financial support. This research is principally interested in coercive pressure insofar as it arises from institutional providers of finance.

From a risk perspective, new businesses are typically characterised by weak collateral and a high failure rate (Leroy, 2012). Institutional providers of finance (equity or credit), operating under conditions of information asymmetry, require a mechanism with which to evaluate the risk (or potential return) of a prospective investment (Brinckmann, Grichnik, & Kapsa, 2010). Castrogiovanni (1996, p. 804) notes that providers of finance are unlikely to provide funding "simply because someone discusses a 'hot idea' in general terms". Banks, venture capitalists and government agencies expect to see specific details and be able to study those details in order to determine whether they believe the venture has an acceptable chance of success (Burke, Fraser, & Greene, 2010; Castrogiovanni, 1996; Chimucheka, 2012; Honig & Karlsson, 2004). The formal business plan is frequently used to satisfy this 'screening' requirement for providers of finance (Burke, Fraser, & Greene, 2010). Miralles and Giones (2011, p. 3) note that "it has in fact become a standard requirement by external funding providers to receive a formalized version of the business model through a business plan document."

In general, business plan literature contends that the foremost purpose of a business plan is to support the entrepreneur in the managing of the business, and raising capital is a secondary purpose (Bewayo, 2010). With some controversy, other scholars (Allred & Addams, 2006; Bhide, 2000; Castrogiovanni, 1996) have contended that entrepreneurs, for the most part, only write business plans as a response to the expectation of institutional providers of finance. The extent to which such expectation includes the preparation of a formal business plan has been shown internationally (Schulte, 2009; Bewayo, 2010) and in South Africa (Chimucheka, 2012; Fatoki & Odeyemi, 2010; Fatoki, 2014). A representative of a major South African bank commented that "we do not lend to businesses without a business plan" (Fatoki, 2014, p. 96). Bhide (2000) proposes that entrepreneurs draw up business plans more to meet the demands of financial institutions than to use as a legitimate management or planning tool.

Honig and Karlsson (2004) propose that external providers of financial support exert coercive pressure on young organisations to write business plans. Although banks, venture

capitalists, and government support agencies approach the financing decision with different objectives and mandates, all three have been shown to incorporate formal written plans in their determination of granting access to finance (Allred & Addams, 2006; Chen, Yao, & Kotha, 2009; Chimucheka, 2012). Thus, coercive forces will be studied to the extent that they stem from institutional actors (banks, venture capitalists, government agencies) that provide financial support to South African technology start-ups.

Therefore:

H1a: South African technology start-ups whose founders seek external institutional financing are more likely to produce formal business plans than those that do not.

2.6.2 Mimetic Isomorphism (H2)

Mimetic isomorphism results from organisations modelling themselves after organisations in their field that they perceive to be legitimate or successful (DiMaggio & Powell, 1983). In other words, the organisation follows the leader and hopes for the same success (Bjorck, 2004). Mimetic isomorphism is the process by which organisations subscribe to the 'rules of the game' (Honig & Karlsson, 2004). In the general case of the technology start-up's planning behaviour, it is expected that mimetic pressure will increase the likelihood of developing a business plan.

H2: Greater mimetic pressure will lead to a higher propensity to prepare a formal business plan.

Organisations model themselves on other organisations as a response to uncertainty (DiMaggio & Powell, 1983). In the case of the technology start-up, two forms of uncertainty are considered as they relate to mimetic pressures.

Firstly, DiMaggio and Powell (1983) propose that mimetic behaviour increases relative to environmental uncertainty. In settings where the outcomes of managerial decisions are ambiguous and difficult to quantify, an organisation may deem it to be easier and cheaper to simply pursue a course of imitation (Ravichandran, Han, & Hasan, 2009). Given that the IT industry is considered to be a highly uncertain industry setting (Solomons, 2010), a sizeable mimetic effect is reasonably expected among actors.

Secondly, new firms are believed to be subject to a stronger mimetic effect owing to a 'liability of newness' (DiMaggio & Powell, 1983). The new firm has neither an existing flow of

profits nor an established track record (Bhide, 2000). Decision-makers in new firms must additionally contend with greater uncertainty than managers in larger, more established firms (Gruber, 2007). As a consequence of this 'liability of newness', new entrants to an industry are reasonably expected to observe and learn from established organisations, and then imitate those practices (Honig & Karlsson, 2004).

Teo et al. (2003) propose that mimetic pressure in the context of organisational research can be isolated in the form of two analytically distinct constructs. These are discussed below and lead to the development of H2a and H2b.

The first construct is derived from the argument that organisations who perceive competitors to behave in a certain way will increasingly adopt that behaviour. Firms will take cues from the collective action of similar others (Teo, Wei, & Benbasat, 2003). This can occur to the extent that functioning in that manner becomes the legitimate way to function (Ravichandran, Han, & Hasan, 2009). Other organisations will tend towards also functioning in that manner so as to avoid being identified as being un-responsive (Teo, Wei, & Benbasat, 2003).

Teo et al. (2003) propose that mimetic pressure can be isolated as a research construct in terms of the subject's perception that competitors have adopted a certain behaviour. In the context of this study, it is expected that entrepreneurs who perceive business plans to be used by competitors, will be more likely to imitate the behaviour. Therefore, the perception of competitor adoption is the first corollary to H2:

H2a: South African technology start-ups whose founders perceive competitors to use business plans are more likely to produce formal business plans than those that do not.

Teo et al. (2003) further propose that mimicry between firms is intensified when the observing firm perceives the competing firm to derive a competitive advantage from a given practice. This argument corresponds with DiMaggio & Powells' (1983) description of mimetic isomorphism as organisations modelling themselves after organisations in their field that they perceive to be successful. Castrogiovanni (1996, p. 804) observes that organisations "imitate the practices of others who are considered successful, in order to gain prestige and an aura of success for themselves".

Thus, mimetic pressure can be isolated in terms of the organisation's perception that the success of competitors is associated with a certain behaviour (Ravichandran, Han, & Hasan, 2009). In the case of the technology entrepreneur, the second corollary to H2 is the perception that the success of competitors is attributable to their use of business plans.

Therefore:

H2b: South African technology start-ups whose founders attribute the success of competitors to written business plans are more likely to produce formal business plans than those that do not.

2.6.3 Normative Isomorphism (H3)

Normative isomorphism stems from professionalism (DiMaggio & Powell, 1983). It is “the collective struggle of members of an occupation to define the conditions and methods of their work, to control the ‘production of producers’ and to establish a cognitive base and legitimation for their occupational autonomy” (DiMaggio & Powell, 1983, p. 152). Normative forces give rise to professional activities and procedures that become understood to be socially expected and responsible.

H3: Greater normative pressure will lead to a higher propensity to prepare a formal business plan.

Universities are acknowledged as a powerful source of normative pressures (Tingling & Parent, 2002; Karlsson & Honig, 2009). The degree to which business plans are deeply entrenched in the programmes of university business schools is widely documented (Bhide, 2000; Brinckmann, Grichnik, & Kapsa, 2010). The business plan is widely accepted by entrepreneurship instructors to provide an effective methodology for teaching entrepreneurship principles (Zimmerman, 2012).

Amar Bhidé, a Columbia Business School professor, describes the entrepreneurship educator’s dilemma: “You’re required to teach entrepreneurship, and there’s a great student demand for instruction on how to write a business plan. You have to generate courses, and it’s an easy course to generate” (Bartlett, 2002, para. 20).

Lange et al. (2007, p. 241) note that, through entrepreneurship education at the tertiary level, students “have been schooled to regard a formal business plan as the foundation on which to build their ventures.” In a qualitative study (Karlsson & Honig, 2009, p. 28), entrepreneurs were reported as writing extensive business plans “following closely what they had learned from their studies and books”. Honig and Karlsson (2004) suggested that, as a consequence of business education, the writing a formal business plan is accepted by entrepreneurs as a professional method.

Outside of the academic setting, the writing of a business plan is seen to signal professionalism, legitimacy, and seriousness of intent (Honig & Karlsson, 2004). In a

longitudinal study, Karlsson and Honig (2009) showed that universities and university-educated actors apply sizeable normative pressure on the entrepreneur's decision to write a business plan.

Honig (2004, p. 259) notes that "business schools teach business planning because plans ostensibly assist entrepreneurs and nascent entrepreneurs as they engage in highly complex and uncertain activities". Given the extent to which the written business plan is used as a central instructional method in entrepreneurship education (Zimmerman, 2012), it is expected that entrepreneurs whose tertiary education included business or management courses will show a higher propensity to develop a formal business plan. Thus:

H3a: South African technology start-ups whose founder's tertiary education included business or management courses are more likely to produce formal business plans than those whose founders did not.

2.7 Research Model

2.7.1 Phenomenon of Interest

In this study, the phenomenon of interest is the South African technology start-up's business planning behaviour. Specifically, to what extent institutional pressures influence the young company to develop a formal business plan.

Planning behaviour is considered in the literature both by 'process' and by 'output'. Planning activities are known to occur on a continuum, from no planning at all through to the development of comprehensive, long-term plans (Castrogiovanni, 1996). For some firms, a business plan may exist only implicitly and abstractly for the founders, without ever being committed to written documentation (Brinckmann, Grichnik, & Kapsa, 2010).

Consequentially, the absence of an observable business plan cannot be interpreted as the absence of planning.

Acknowledging this point, others have noted that many of the benefits accrued to business planning are contingent on the plan being committed in writing (Shane & Delmar, 2004; Brinckmann, Grichnik, & Kapsa, 2010; Borges, Hashimoto, & Limongi, 2013). For example, the communication and efficiency linkage of business planning relies on internal actors sharing a common, explicit understanding of the plan. Similarly, the symbolism and capital-raising linkage demands that the plan exist in a form that is suitable for distribution to external actors.

Prescribed and practiced approaches to authoring a business plan are widely differentiated. The business plan presents an inherently ‘problematic’ subject for scientific inquiry (Matthews & Scott, 1995). Bewayo (2010) describes the business plan as a ‘notoriously loose’ research concept. In a qualitative review of actual business plans, researchers described the plans observed as “ranging from handwritten two-page papers with a spot of coffee on the one hand, to elaborate planning folders containing a hundred and more pages” (Schulte, 2009, p. 7).

Given the heterogeneity of plans as they occur in practice, a range of measures have been developed to classify plans according to levels of breadth, depth, sophistication and formality (Brinckmann, Grichnik, & Kapsa, 2010; Matthews & Scott, 1995; Schulte, 2009).

At the simplest level, a dichotomous variable has been used by researchers (Delmar & Shane, 2003; Brinckmann, Grichnik, & Kapsa, 2010) to account for the entrepreneur’s decision (i.e. did the start-up prepare a written business plan?). This approach has been criticised as overly simplistic (Lumpkin, Shrader, & Hills, 1998). Alternative, more nuanced, approaches as suggested in the literature are briefly considered.

Honig and Karlsson (2004) used three levels to classify business plans according to written status and intended audience.

| | |
|---------|---|
| Level 1 | Unwritten (i.e. in the entrepreneur’s head) |
| Level 2 | Informally written for internal use |
| Level 3 | Formally written for external use |

Table 3: Planning Classification Method (Honig & Karlsson, 2004)

Lindsay and Rue (1980) studied plans using a three level classification as follows:

| | |
|---------|--|
| Class 1 | No formal long-range planning process. |
| Class 2 | Written, documented plan which includes the specification of objectives and goals, the selection of objectives and goals, the selection of long-range strategies, and a determination of the future resources required. |
| Class 3 | Plan contains all of the items in Class 2 plus procedures for anticipating or detecting errors in, or failures of, the plan and for preventing or correcting them on a continuing basis, plus some attempt to account for factors outside the immediate environment of the firm. |

Table 4: Planning Classification Method (Lindsay & Rue, 1980)

Bracker, Pearson and Keats (1988) studied plans using a four level classification system of increasing sophistication of activities and outputs:

| | |
|------------------------------|---|
| Unstructured plans | No measurable structured planning. |
| Intuitive plans | These informal plans are developed and implemented based on the intuition and experience of the owner of the firm. They are not written and are stored in the memory of the firm's owner. They are of a short-term duration, no longer than 1 year in nature. |
| Structured operational plans | Written short-range operation budgets and plans of action for current fiscal period. The typical plan of action would include basic output controls such as production quotas, cost constraints, and personnel requirements. |
| Structured strategic plans | Formalized, written, long-range plans covering the process of determining major outside interests focused on the organization; expectations of dominant inside interests; environmental analysis; and determination of strengths and weaknesses of the firm and feedback. Typically 3-15 years in nature. |

Table 5: Planning Classification Method (Bracker, Keats, & Pearson, 1988)

Shrader et al. (1989) proposed an adaptation of Lindsay and Rue's classification system in which three tiers of classification were used, ranging from no plans to comprehensive plans with extensive analysis and control procedures.

Fernandez-Guerrero et al. (2012) rely on expert judgement to classify business plans according to the breadth of analysis:

| | |
|--------------------------|---|
| Economic viability | Assesses competitor analysis, level of internal skills, stated objectives and the kind of competitive advantages it will attempt to exploit, basically from the logic of consistency. |
| Financial viability | Assesses the financing schemes put to use, debt levels, funding generating capabilities and, in general, economic status and future projections. |
| Organizational viability | Assesses past and future practices connected with various firm functions, procurement, operations, finance, marketing and human resources. |

Table 6: Planning Classification Method (Fernandez-Guerrero, Revuelto-Taboada, & Simon-Moya, 2012)

In the literature, only Honig and Karlsson's (2004) study was identified as similarly testing institutional pressures on the planning behaviour of new firms with respect to the development of a written business plan. For methodological consistency and to aid replicability, this study will adopt the planning construct (see Table 3) proposed by Honig and Karlsson (2004) as a measure of the dependent variable.

2.7.2 Conceptual Model

This study's conceptual research model is illustrated in Figure 2. It shows the effects of institutional pressures, as derived from the theory of institutionalisation, on the business planning behaviour of a South African technology start-up.

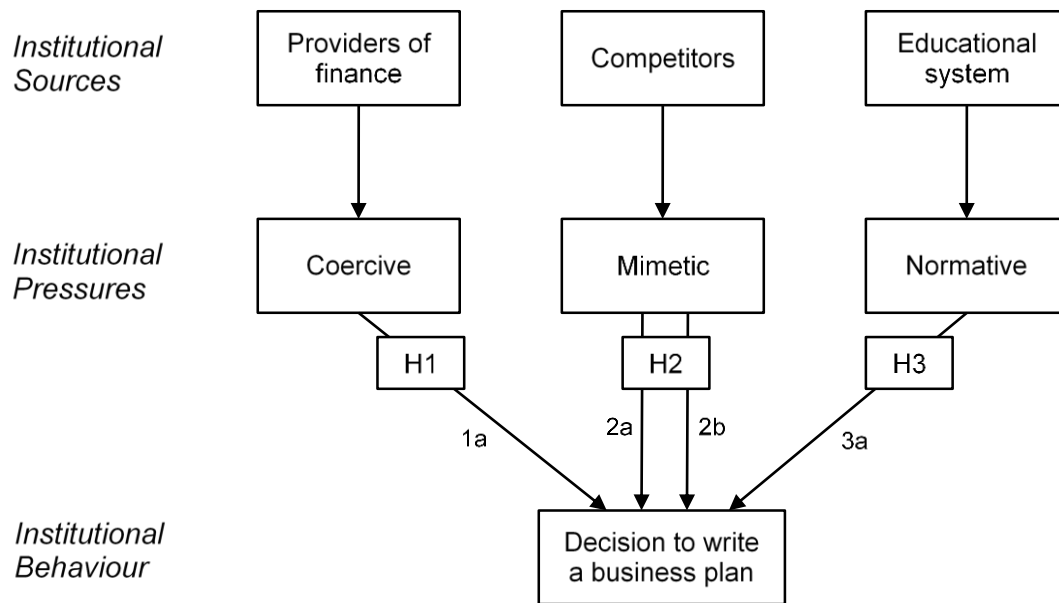


Figure 2: Conceptual View of Research Model (excluding controls)

The conceptual research model is further expanded in terms of controls that will be considered as possibly influencing the phenomenon of interest.

2.7.3 Control Variables

This study seeks to detect institutional forces as a means to predict the South African technology entrepreneur's propensity to develop a formal business plan. For the purposes of isolating these institutional forces, Honig and Karlsson (2004) suggest that appropriate controls are derived from dimensions of demography, human capital and social capital.

Demographics

By virtue of their age, older entrepreneurs are reasonably expected to have experienced more exposure to institutional forces (Honig & Karlsson, 2004). Also, perceived constraints on access to finance have been reported to differ by age, whereby older entrepreneurs perceive lower constraints to accessing finance (Kwong, Jones-Evans, & Thompson, 2011). These varying perceptions by age may affect the likelihood of writing a business plan.

In terms of gender, the divergence in social and economic circumstances typically facing male and female entrepreneurs gives rise to gender effect on a number of entrepreneurial outcomes (Kwong, Jones-Evans, & Thompson, 2011; Fernandez-Guerrero, Revuelto-Taboada, & Simon-Moya, 2012). Yordanova and Alexandra-Boshnakove (2011) found significant gender differences in entrepreneurial behaviour in response to risk. If the written business plan is appreciated by entrepreneurs as a mechanism with which to reduce uncertainty, we may reasonably expect to observe differences between genders. Thus, a control for gender is entered to the model.

The annual Global Entrepreneur Monitor report (Herrington & Kew, 2013) consistently reports variations in entrepreneurial behaviour across South African race groups. Historically, the apartheid regime prevented black South Africans from owning and starting businesses. This history has impacted on the level of entrepreneurial activity among black South Africans through deprivation of entrepreneurial experience, skills, confidence and role models (Basardien, Friedrich, & Parker, 2013). In South Africa, levels of entrepreneurship knowledge have been shown to differ between different race groups (Brijlal, 2011). Thus, race is entered to the model as a third demographic control variable.

Human Capital

Bhide (2000, p. 17) defines human capital in the entrepreneurial context as “the skills, knowledge, reputation, and so on that an individual acquires and demonstrates through experience and education”. Entrepreneurial decision-making is understood to be significantly influenced by the founder’s accumulated experiences from education and prior work experience (Bewayo, 2010; Hampton, McGowan, & Cooper, 2011). Despite this, the entrepreneurship body is characterised by inconsistent findings with regard to the impact of education (Haber & Reichel, 2007).

Dencker et al. (2009) propose that less able founders may tend to plan more as a compensation for their lesser ability. Acknowledging that it is very difficult to measure ‘innate’ entrepreneurial ability, education and work experience provide reasonable proxies for assessing founder ability (Dencker, Gruber, & Shah, 2009).

Level of education is considered foundational to an entrepreneur’s managerial competence and personal effectiveness (Fatoki, 2014). If the writing of a business plan is a consequence of higher levels of founder competence or personal effectiveness, a linkage is expected to be observed between the founder’s highest attained education and the writing of a business plan. In the entrepreneurship body, highest level of education is understood to play a key

influencing role on entrepreneurial activities (Lange, Mollov, Pearlmutter, Singh, & Bygrave, 2007).

Prior management experience and prior entrepreneurial knowledge have also been shown to be important factors in entrepreneurial outcomes (Dencker, Gruber, & Shah, 2009; Fernandez-Guerrero, Revuelto-Taboada, & Simon-Moya, 2012; Fatoki, 2014). Burke et al. (2010) suggested that a venture where the team is highly experienced may believe the writing of a business plan to be a poor use of time. Conversely, an entrepreneur who is either new to a market or inexperienced as an entrepreneur, may consider the writing of a business plan as informative and instructive. Shane (2004) noted that entrepreneurs with prior start-up experience are expected to have gained greater knowledge regarding the organisation-forming process. Bewayo (2010) found that an entrepreneur's level of industry experience influenced the likelihood of developing a formal business plan. Entrepreneurs with more experience were found to believe their experience to be a valid substitute for the writing of a business plan (Bewayo, 2010).

Gruber (2008) reported a negative correlation between prior work experience and the amount of time an entrepreneur spent planning in the new firm. Similarly, a negative correlation was shown between prior management experience and the time an entrepreneur committed to planning activities.

Consistent with Honig and Karlsson's (2004) research, the research model enters controls for human capital in terms of education, work experience, managerial experience, and prior start-up experience.

Social Capital

In terms of social capital, an actor's access to social networks has an enhancing effect on factors of human capital (Honig & Karlsson, 2004). Hampton et al. (2011, p. 589) remark that an "entrepreneur's network can provide access to key resources necessary to exploit opportunities and improve entrepreneurial effectiveness". Gruber (2008) found social networks to play a major role in the development of the entrepreneur's capability to accurately identify and exploit market opportunities. Social networks are understood to be a crucial determinant of entrepreneurial effectiveness (Hampton, McGowan, & Cooper, 2011).

Social capital can be extracted from numerous networks tangential to the actor (such as immediate family, extended family, community, organisations etc.). Given the entrepreneur's centrally influential role within the new organisation, Honig and Karlsson (2004) contend that the founder's direct individual social networks are most important in controlling for the effect

of institutional pressures on the young firm.

Family networks are controlled in terms of whether the entrepreneur is married, and whether the entrepreneur has children, and whether the entrepreneur's parents were also entrepreneurs. Honig and Karlsson (2004) showed positive, though not significant, associations between these three constructs and the decision to write a formal business plan. Fernandez-Guerrero (2012) also reported variations in entrepreneurial outcomes related to having self-employed family members.

Controls are also developed for direct personal networks. Entrepreneurs who received encouragement to start the business from friends and family were found to be three times more likely to develop a formal business plan (Honig & Karlsson, 2004). Hampton et al. (2011) reported different effects of personal networks (family and friends) between males and females. Honig & Karlsson (2004) reported significant associations between writing a business plan and whether an entrepreneur has many friends or family who are also entrepreneurs, and also whether the entrepreneur is a member of business networks (e.g. trade associations, chambers of commerce, service clubs).

Thus, the research model enters controls for social capital in terms of marital status, parental status, parents business owners, encouragement from family and friends, membership of business networks, and whether the entrepreneur has many friends or family who are entrepreneurs.

2.7.4 Final Model

This study's complete research model is illustrated in Figure 3. It shows the effects of institutional pressures (H1a, H2a, H2b, H3a) on the young firm's behaviour with respect to the formal business plan (dependent variable). It also shows the founder-level control variables that will be measured to isolate their possible influence on the dependent variable.

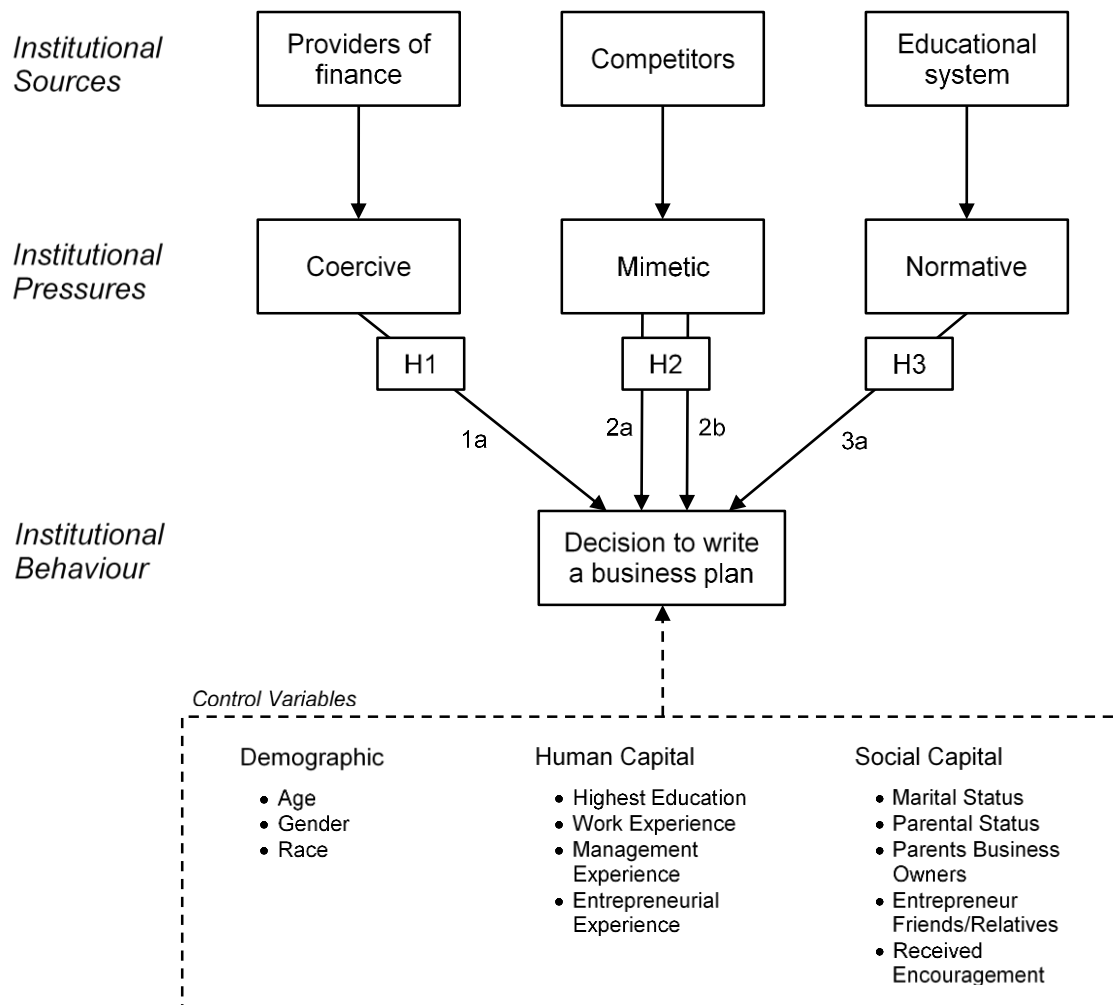


Figure 3: Conceptual View of Research Model (including controls)

3. CHAPTER 3: RESEARCH METHODOLOGY

3.1 Introduction

This section describes the methodology that was followed to investigate the hypotheses described in the Research Model. Firstly, the research paradigm and purpose are discussed. Thereafter, the research strategy, population, sample and instrument are reviewed. Finally, the approaches to data analysis, validity, reliability and limitations are discussed.

3.2 Research Paradigm

The questions raised in this research relate to the nature of the relationships between institutional forces and the decision to write a formal business plan.

This research assumes a positivist epistemological stance given that the aim is to identify 'objective' truths regarding the nature of relationships between elements that comprise the phenomena (Morgan & Smircich, 1980). In understanding these relationships, facts and values are distinct and "scientific knowledge consists only of facts" (Walsham, 1995, p. 76). The research adopts the ontological model of external realism in which there is an "objective reality or real world that exists independently of scientific researchers" (Lee & Baskerville, 2003, p. 229).

The research approach is consistent with logical empiricism in that pre-formulated hypotheses were tested by means of experiments to measure and control variables that describe the phenomena (Kaplan & Duchon, 1988). The research incorporated conventional positivist procedures of inferential statistics, hypothesis testing, and mathematical analysis (Lee A. S., 1991). The research method was based on a survey approach, consistent with the positivist research stance (Morgan & Smircich, 1980). Matters of fact were established based on data collected in observation of the phenomena, and empirical testing was conducted to maximise the generalisability of findings (Lee & Baskerville, 2003).

The characteristics of the study are in line with Klein and Myers (1999) parameters for positivist IS research: "evidence of formal propositions, quantifiable measures of variables, hypothesis testing, and the drawing of inferences about a phenomenon from a representative sample to a stated population" (Klein & Myers, 1999, p. 69).

3.3 Purpose and Approach

The research was quantitative with the purpose of conducting a descriptive, relational analysis of the phenomena. The descriptive researcher uses the scientific method to make careful, detailed observations regarding the phenomenon of interest (Bhattacharjee, 2012).

A descriptive approach is best suited to studies that seek to describe what is going on or what exists (Trochim, 2006). A descriptive approach is suggested for research questions seeking to answer the 'who, what, when, where, and how'. In the case of this study, the researcher sought to test hypotheses regarding relationships (i.e. isomorphic pressures) that occur in an existing research setting (i.e. South African IT industry).

The research did not aim to prove causality, but rather sought to develop correlational knowledge by studying the synchronisation of study variables (Trochim, 2006). Bhattacharjee (2012) notes that the establishment of causality is not a requirement for descriptive research.

Myers (1997, p. 3) notes that, even when causality is not proven, positivist studies contribute to our "predictive understanding of phenomena". Although establishing causality was not an objective of this study, an increased predictive understanding is of value to entrepreneurship practitioners and educators given the applied nature of the topic.

The type of research was confirmatory in that *a priori* hypotheses were tested. The research approach took the form of a survey-based field study. (Boudreau, Gefen and Straub (2001, p. 3) define field studies as "non-experimental inquiries occurring in natural systems". The researcher in a field study cannot "manipulate independent variables or control the influence of confounding variables" (Boudreau, Gefen, & Straub, 2001, p. 3). In the context of this study, the phenomena exists within a natural system (i.e. the South African IT industry) and the researcher seeks to analyse relationships as an uninvolved, objective observer.

3.4 Data Collection Technique

A cross-sectional survey approach was used for data collection. Precedent for such an approach is widely established in the literature related to entrepreneurial planning (Gruber, 2007).

A survey provides a “quantitative or numeric description of trends, attitudes, or opinions of a population by studying a sample of that population” (Creswell, 2009). A survey approach allows the researcher to use a sample drawn from a population to infer some characteristic, attitude, or behaviour of the population (Creswell, 2009), with the advantage of both replicability and statistical power (Teo, Wei, & Benbasat, 2003).

The questionnaire was structured in the form of close ended-questions and administered to respondents as an online self-administered questionnaire. This method enabled the researcher to affordably access a wide geographic sample, without the incurrence of travel costs.

3.5 Population and Sampling

3.5.1 Population

This study examines the influences of institutional forces on the behaviour of South African technology start-ups. The start-up founder is distinct from the start-up organisation. However, Lechnera et al (2006, p. 525). argue that CEOs (chief executive officers) and founders are “the single most knowledgeable and valid information source” regarding the organisation. Furthermore, in typical circumstances, the founder plays a centrally influential role in the strategic decision-making in the small firm context (Berry, 1998). For this reason, the approach of founder as key-informant is frequently used in the study of nascent and new organisations (Gruber, 2007; Gruber, 2008; Miller & Cardinal, 1994; Shane & Delmar, 2004).

It is noted that position bias risk that may result from the use of a key-informant approach (Gruber, 2007). However, studies have reported data collected from key-informants to be both reliable and accurate when compared with data collected from other individual respondents in the organisation (Zahra & Covin, 1993).

Thus, a key-informant approach is adopted for examining the phenomenon of interest. This approach is consistent with the reference study conducted by Honig and Karlsson (2004).

The population of interest in this study is defined by three parameters:

- Company maturity
- Industry i.e. information technology
- Geography i.e. South Africa

In terms of company maturity, entrepreneurship studies vary widely in approaches to defining target population (e.g. earnings, number of employees, growth etc.) and often adopt criteria for sampling that are geographically unique (e.g. juristic type, taxation classification etc.). In the study conducted by Honig and Karlsson (2004), sampling was conducted among the general population on the basis of an individual's response to whether they were 'currently starting a business'. This sampling criteria is perhaps vulnerable to criticism for weakness of specificity.

To improve the specificity of the sampling method and aid reproducibility of this research, a more accurate sampling criteria was sought. The Global Entrepreneurship Monitor (GEM) report is recognised as the most authoritative longitudinal study of entrepreneurship in the world (Herrington & Kew, 2013). The central indicator of the GEM Report is 'total early-stage entrepreneurial activity' (TEA). The TEA indicator describes entrepreneurial activity occurring after entrepreneurial intention, but before maturation or discontinuance. TEA comprises 'nascent' and 'new' entrepreneurial activity per the following definitions (Herrington & Kew, 2013):

- Nascent entrepreneurs: have not paid salaries or wages for more than three months.
- New business owners: have paid salaries and wages for more than three months, but less than 42 months.

Consistently reported correlations between TEA and GDP per capita point to the robustness of the TEA construct. Thus, this study's population of interest was defined as South African IT industry start-ups that meet the TEA definition of either a *nascent* or *new business*.

3.5.2 Sampling

Emerging organisations are "inherently difficult to identify and study" (Honig & Samuelsson, 2012, p. 373). Nascent and newly established firms are often not yet registered in company databases or indexes, and may have not yet registered with the relevant tax authorities. For these reasons, data on the population of start-ups is usually not readily available from

traditional sources used by researchers (Honig & Karlsson, 2004).

Entrepreneurship researchers in South Africa are similarly challenged to estimate population sizes (Fatoki, 2014). In the specific case of South African IT industry start-ups, there is no publically accessible network or database that researchers can use for the purposes of probabilistic sampling. In circumstances when the size of the total population is unknown and the study population is rare or difficult to find, a snowball sampling technique is suggested (Babbie & Mouton, 2001; Trochim, 2006). Snowball sampling is a non-probabilistic sampling method. As such, the sampling method is potentially subject to bias and the findings of this study cannot be interpreted as representative of the total population of South African technology start-ups (Babbie & Mouton, 2001). However, as the nature of the research is descriptive, representativeness of findings to the general population is not a necessary criteria of sampling design (Trochim, 2006).

Two methods were used to effect the 'snowballing' of responses. The first method involved directly approaching technology entrepreneurs to request their participation in the study. A database of 247 South African technology entrepreneurs was developed through a combination of the researcher's contacts, the research supervisor's contacts, and extensive desktop research. An email requesting participation was sent to each of the identified entrepreneurs. To effect the snowballing of responses, the email requested that the recipient forward the email to their known social and professional networks of technology entrepreneurs.

The second method involved identifying organisations associated with sizeable populations of technology entrepreneurs. The South African government's Small Enterprise Development Agency (SEDA) website was used to identify an initial listing of organisations that support ICT-sector entrepreneurs and start-ups. Further desktop research was conducted to expand the initial list to a final list of 21 organisations (see Appendix B: Organisations). These organisations were approached via email, telephone, or through their websites to seek their support for the study. If an organisation was responsive and indicated a willingness to support the research, the researcher provided the organisation with a template email that the organisation could use to request participation among their respective network(s) of technology entrepreneurs.

3.6 Research Instrument

The research instrument for this study was principally derived from the instrument used by Honig and Karlsson (2004). In deriving a research instrument from prior research, the present study benefits in terms of enhanced validation and replicability (Bhattacharjee, 2012). Consistent with Honig and Karlsson's (2004) study, a single measure was used for each construct and all measures were in the form of close-ended questions.

As noted (see 2.7.1), a number of different approaches have been suggested in the literature for interrogating the business plan as a research phenomenon. For methodological consistency, this research adopted the same dichotomous operationalisation for the dependent variable as Honig and Karlsson (2004). Namely, that the start-up's decision to develop a business plan can be evaluated on three levels.

| | |
|---------|---|
| Level 1 | Unwritten (i.e. in the entrepreneur's head) |
| Level 2 | Informally written for internal use |
| Level 3 | Formally written for external use |

Figure 4: Planning Classification Method (Honig & Karlsson, 2004)

A formal business plan was only considered to have been developed if the entrepreneur indicated that a business plan had been developed that satisfies the Level 3 description. The dependent variable is thus dichotomous i.e. a plan exists that meets the Level 3 definition (1), or a plan does not exist that meets the Level 3 definition (0).

Consistent with Honig and Karlsson's (2004) study, dichotomous variables were used to measure the H1 and H3 constructs. The constructs for mimetic forces (H2a and H2b) were derived from the conceptual model proposed by Teo et al. (2003). As in Teo et al.'s (2003) study, a Likert scale was used to measure participant response. The measure used the convention of a 5-item (Babbie & Mouton, 2001) scale ranging from 'Strongly Disagree' to 'Strongly Agree'. An advantage of Likert scale measures is that the data is more granular for the testing of a given hypothesis (Bhattacharjee, 2012).

Table 7 shows the assignment of constructs in the research model (see Figure 3) to questionnaire items.

| Construct | Questionnaire Items | Source |
|--|---|---------------------------|
| H1 (Coercive isomorphism) | Q26 | Honig and Karlsson (2004) |
| H2a (Mimetic isomorphism) | Q27 | Teo et al. (2003) |
| H2b (Mimetic isomorphism) | Q28 | Teo et al. (2003) |
| H3 (Normative isomorphism) | Q11 | Honig and Karlsson (2004) |
| Control variables | Q5, Q6, Q7, Q8, Q9, Q10, Q12, Q13, Q14, Q15, Q16, Q18, Q20, Q23 | |
| Respondent profile and eligibility | Q1, Q2, Q3, Q4, Q17, Q18, Q19, Q21, Q22 | |
| Dependent variable (Writing a business plan) | Q24, Q25 | Honig and Karlsson (2004) |

Table 7: Construct to Questionnaire Items Mapping

In presentation, the questionnaire (included as Appendix A: Research Instrument) was comprised of four sections:

1. The first section (Q1-Q4) confirmed the respondent's willingness to participate and eligibility for participation.
2. The second section (Q5-Q16) gathered demographic characteristics regarding the entrepreneur.
3. The third section (Q17-Q26) gathered firm-level descriptive data, control variables, the dependent variable, and independent variables H1 and H3.
4. The fourth section (Q27-Q28) gathered data on the H2a and H2b independent variables.

3.7 Validity and Reliability

3.7.1 Internal Validity

Internal validity describes the degree to which inferences can legitimately be drawn from the operationalisations in the study to the theoretical constructs on which those operationalisations are based (Trochim, 2006). In other words, internal or construct validity describes whether the variables in the statistical analyses do in fact represent the theoretical constructs that they are intended to represent (Calder, Phillips, & Tybout, 1982). Internal validity is not 'all or nothing', and is correctly considered in degrees ranging from none to perfect validity (Graziano & Raulin, 2004).

Content validity describes how well the measuring instrument provides adequate coverage of the investigative questions guiding the study (Blumberg, Cooper, & Schindler, 2005) and checks the operationalisation against the relevant content domains (Trochim, 2006). Boudreau (2001) suggest this assessment can be conducted with reference to three content sources: literature, representatives of the relevant populations, and experts.

In this study, a comprehensive literature review was conducted in terms of both the general content domain and the proposed research model. In addition, two peer-reviewed published works were used to guide the study's development of constructs and operationalisations.

Content validity was also enhanced by exposing the proposed research instrument to both representatives of the relevant population and academic experts. Pre-testing is a technique to "ensure that the measurement instruments used in the study are reliable and valid measures of the constructs of interest" (Bhattacharjee, 2012, p. 23). The purpose of a pre-test is to establish the content validity of the questionnaire and also to gather feedback to improve the questions, format, and response scales (Creswell, 2009). Boudreau et al. (2001, p. 4) suggest that "every instrument should be pretested, no matter how skilled the researcher".

In this study, pre-testing was conducted with two academic experts and three members of the target population. Pre-test subjects reviewed the instrument and provided feedback relating to the questionnaire structure, layout, questions, response scales. A number of suggestions were received to improve the measures proposed. This feedback was consolidated, evaluated, and incorporated into a revised final instrument.

Face validity, a further dimension of validity, provides for a subjective judgemental assessment of how well the operationalisation reflects the theoretical construct. Although the

assessment is subjective, authors (Blumberg, Cooper, & Schindler, 2005; Trochim, 2006) have noted that researchers must necessarily rely on subjective judgement at many junctures in the research process. In this study, the validity of the constructs was further assessed through a face validity analysis of the construct operationalisations.

3.7.2 External Validity

External validity describes whether observed relationships and conclusions in a study hold for other persons in other places and at other times (Trochim, 2006). This study was conducted in the South African information technology industry context using a non-probabilistic sampling method. Thus, it was not expected that the results would have wide applicability in other countries or industries. However, evidence that strongly supports or rejects the hypotheses may possibly allow these results to be applied more widely.

3.7.3 Reliability

Reliability refers to the extent to which the measures of a specified construct provide consistent and reproducible results. Reliability describes the ability of a test to produce similar results in different circumstances, given that nothing else is changed (Roberts, Priest, & Traynor, 2006).

In this study, data collection was conducted in the form of a questionnaire which reduces reliability risk as compared with researcher-as-observer approaches (Bhattacharjee, 2012). Reliability is enhanced if the research subjects can be reasonably expected to know the 'correct' answers to questions contained in the instrument (Bhattacharjee, 2012). A pre-test was conducted with members of the target population to confirm that the questions in the instrument can be reliably answered by respondents. Bhattacharjee (2012) notes that simplifying wording and eliminating ambiguity in the instrument is important in reducing reliability risk. Through the pre-test process, feedback was gathered from respondents and changes were incorporated to improve reliability of the final questionnaire.

Consistent with the study conducted by Honig and Karlsson (2004), all constructs were measured using a single-item measure (i.e. no multiple-item measures). The nature of the study's constructs is an important consideration. Single item measures are considered appropriate in cases where both the object and attribute are simple and unambiguous to the rater (Bergkvist & Rossiter, 2007). In these cases, single item measures have been shown to have equal predictive accuracy as multiple-item measures (Bergkvist & Rossiter, 2007). In this study, a pre-test was used to confirm that raters understood the measures clearly and without ambiguity.

Given that only single-item measures were used, statistical estimates of reliability for multiple-item measures (e.g. split-half reliability, Cronbach's alpha etc.) are not appropriate in this study. Similarly, given that the data collection is self-reported, methods for assessing inter-rater reliability are not appropriate. Thus, reliability is approached in a manner consistent with Honig and Karlsson (2004). Namely, that the nature of the study's measures infers an acceptable degree of repeatability and dependability with reasonable expectation of consistent and reproducible results.

3.8 Limitations and Challenges

Key limitations and challenges affecting this study's design are noted:

- The study used a non-probabilistic sampling method (snowball sampling) thus findings cannot claim to be representative of the total population.
- As an online survey, participants required access to the internet. Given the nature of the population (i.e. IT entrepreneurs), this risk was not anticipated to be sizable.
- The researcher anticipated a general willingness to participate among the population. However, the willingness of members of the population to participate in the research could not be known until fieldwork commences.
- The researcher anticipated a reasonable snowballing effect in the population. However, the extent to which snowballing would prove effective in the target population could not be predicted.

3.9 Analysis and Hypothesis Testing

The dependent variable in this study is the technology start-up's decision to prepare a formal business plan. Consistent with the operationalisation developed by Honig and Karlsson (2004), a dichotomous variable was used to measure the dependent variable (i.e. 0 = no formal business plan, 1 = formal business plan).

Exploratory and descriptive analysis was conducted to explore the nature and directionality of associations between variables. Spearman's rank order was used to calculate correlation coefficients as the dataset contains both ordinal and non-parametric continuous data (Babbie & Mouton, 2001; Lund Research Ltd., 2013). Numeric data was tested for normality using histograms, exploratory analysis and Shapiro-Wilk tests. Continuous variables were described using means (standard deviations) or medians (interquartile ranges) depending on their distributions. Descriptive analysis used contingency tables to explore the nature of the relationship between independent variables and the dependent (dichotomous) variable. Inferential and hypothesis testing was conducted with respect to the pair of variables under analysis (Everitt & Rabe-Hesketh, 2006; Leeper, 2007).

The following table describes the tests of significance that were used for the respective bivariate combinations (Everitt & Rabe-Hesketh, 2006; Leeper, 2007).

| Dependent Variable | Independent Variable | Significance Test | Notes |
|---------------------------|-------------------------------------|---------------------------|--|
| Categorical (Dichotomous) | Numerical (Normal Distribution) | Two sample t test | |
| Categorical (Dichotomous) | Numerical (Non-normal Distribution) | Wilcoxon-Mann-Witney test | |
| Categorical (Dichotomous) | Categorical | Pearson Chi Squared | In all cases except below. |
| Categorical (Dichotomous) | Categorical | Fishers Exact | If any expected frequency is less than 1 or 20% of expected frequencies with the contingency tables were less than or equal to 5. (Everitt & Rabe-Hesketh, 2006) |

Table 8: Inferential Testing Methods

A 5% significance level was used in testing the study's hypotheses.

The combined and relative effect of the independent variables on the dichotomous dependent variable was assessed using multivariate logistic regression analysis. Consistent with the method used by Honig and Karlsson (2004), hierarchical logistic regression was conducted to present two separate regression models. The first model (Model 1) included

only control variables. A second model was then developed (Model 2) in which the hypothesis variables were introduced to assess whether the addition of these variables improved the model.

Consistent with the approach used by Honig and Karlsson (2004), Hosmer and Lemeshow's (1989) goodness-of-fit test was conducted to assess whether the predicted frequency and observed frequency were closely aligned i.e. the closer the alignment, the better the fit of the model. Finally, the likelihood ratio test was used to statistically compare the goodness of fit of the null model with the alternative model.

All statistical analysis was conducted using Stata (Version 13.1; Stata Corp, College Station, Texas, USA).

3.10 Ethical Considerations

The nature of the topic and the intended methodological approach did not raise any unusual or unique ethical considerations. The following ethical points were considered in the design of this study:

1. Respondent participation was voluntary.
2. Prior to commencing the questionnaire, the respondent was advised that participation is entirely voluntary. Participants were also notified that completion of the questionnaire indicated their consent to participate in the research.
3. Respondents were informed that they had the right to withdraw from the research at any stage.
4. Given that the questionnaire was administered online, a unique identifier was necessary to identify accidental duplicate responses. All respondents were asked to provide their name and company name (if the company was named). These fields were used only for the purposes of detecting duplicate submissions and no individually identifiable information is included in the findings.
5. Raw data was maintained securely (password protected) and not made available to any 3rd parties with the exception of the researcher's supervisor.
6. The raw data will be deleted once it is no longer required.
7. UCT ethics approval for the research was obtained from the Commerce Faculty Ethics in Research Committee.

4. CHAPTER 4: RESULTS AND ANALYSIS

4.1 Introduction

The aim of this research study was to develop and test a model of institutional pressures in terms of their influence on the South African technology start-up's business planning behaviour with respect to the formal business plan. Constructs drawn from institutional theory were hypothesised to predict this behaviour.

The results of this study are presented and analysed in seven sub-sections. The first sub-section describes the data collection process. The second sub-section outlines the general profile of the sample. The third sub-section contains descriptive and exploratory statistics, with accompanying discussion. The following three sub-sections test the hypotheses and discuss the results. The chapter concludes with regression analysis and a summary of results in terms of the study's hypotheses.

For all statistical results tables, * denotes significance at the 5% level, whilst ** denotes significance at the 1% level.

4.2 Data Collection

The data gathering was conducted over a period of 30 days. As described in section 3.4, two methods were used to effect the snowball sampling method.

The first method involved sending participation requests by email to the database of 247 South African technology entrepreneurs identified prior to commencing the data gathering. The email contained a link to the online questionnaire and also requested that the recipient forward the email to their known social and professional networks of technology entrepreneurs. A number of respondents replied directly to the researcher to confirm that they had completed the questionnaire, or that they had forwarded the email to other potential respondents.

The second method involved approaching organisations identified as associated with sizeable populations of technology entrepreneurs. The 21 organisations identified prior to commencing the research were approached via email, telephone, or through their websites to seek their support for the study. Varying levels of responsiveness and willingness was received from the organisations. Liaison with the organisations was continuous and intensive

over the 30-day period. Approximately one third of the organisations contacted indicated a willingness to support the research by distributing the participation request to their respective network(s) of entrepreneurs.

However, for privacy reasons, the researcher was generally excluded from internal communications between the organisations and their mailing list(s) of technology entrepreneurs. Thus, it is not possible to report which organisations actually distributed the participation request or the total number of entrepreneurs that received the request to participate from the organisations contacted.

Figure 5 shows the frequency of questionnaire submissions over the period. Over the period, the online questionnaire website received 197 distinct views (i.e. different viewers) and was completed 99 times (50% conversion rate). The distribution of submissions is irregular. The visible spikes in responses may be the result of organisations distributing the participation request to their mailing list(s) of technology entrepreneurs, though it is not possible to identify how each respondent received the participation request from the data.



Figure 5: Temporal Distribution of Questionnaire Submissions

Of the 99 responses, 19 responses were excluded because the respondent's business exceeded the threshold for qualification as either a 'new or 'nascent' firm (see 3.5.1).

The 80 responses were reviewed for validity and completeness. No missing responses were identified and all data values were valid. Therefore, a final set of 80 responses was used to conduct the statistical analysis.

4.3 Sample Profile

In this section, the general profile of the sample is described to provide an overview of the sample set in terms of key demographic parameters. Thereafter, the sample is discussed with reference to literature regarding the general profile of South African entrepreneurs, and also the specific profile of South African technology entrepreneurs.

4.3.1 Age and Gender

After profiling the respondents by gender, it was found that the overwhelming majority (86%) of the respondents were males. For both genders, the largest proportion of respondents were from the 25 – 34 age group. The 25 – 34 age group comprises 50% of the total sample. The second largest age group is 35 – 44 years comprising 30% of the total sample. Table 9 and Figure 6 show the breakdown of respondents by gender and age.

| Gender | Frequency | Percentage of Total | Age | Frequency | Percentage of Total |
|--------|-----------|---------------------|---------------|-----------|---------------------|
| Female | 11 | 14% | 18 - 24 years | 1 | 1% |
| | | | 25 - 34 years | 6 | 8% |
| | | | 35 - 44 years | 3 | 4% |
| | | | 55 - 64 years | 1 | 1% |
| Male | 69 | 86% | 18 - 24 years | 9 | 11% |
| | | | 25 - 34 years | 34 | 43% |
| | | | 35 - 44 years | 21 | 26% |
| | | | 45 - 54 years | 2 | 3% |
| | | | 55 - 64 years | 3 | 4% |
| | 80 | | | 80 | |

Table 9: Respondents by Age and Gender

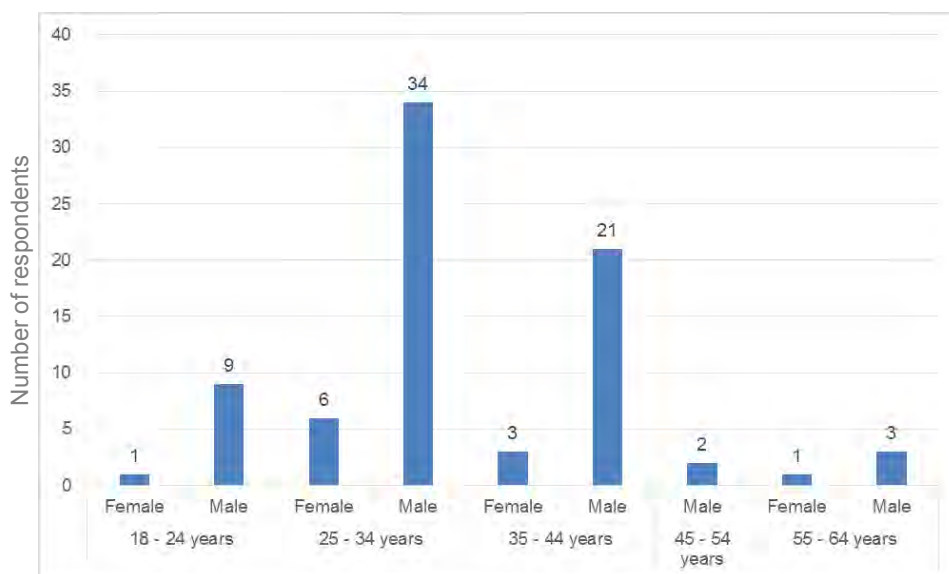


Figure 6: Respondents by Age and Gender

4.3.2 Race and Gender

By race group, Whites accounted for 71% of the sample, with White males accounting for 60% of the sample. By proportion of the total sample, Whites were followed by Blacks (18%), Coloureds (6%), and then Indians (1%). Three respondents (4%) opted against disclosing their race group. Table 10 and Figure 7 provide the breakdown of respondents by race and gender.

| Race | Frequency | Percentage of Total | Gender | Frequency | Percentage of Total |
|-------------------|-----------|---------------------|--------|-----------|---------------------|
| Black | 14 | 18% | Female | 2 | 3% |
| | | | Male | 12 | 15% |
| Coloured | 5 | 6% | Male | 5 | 6% |
| Indian | 1 | 1% | Male | 1 | 1% |
| White | 57 | 71% | Female | 9 | 11% |
| | | | Male | 48 | 60% |
| Prefer not to say | 3 | 4% | Male | 3 | 4% |
| | 80 | | | 80 | |

Table 10: Respondents by Race and Gender

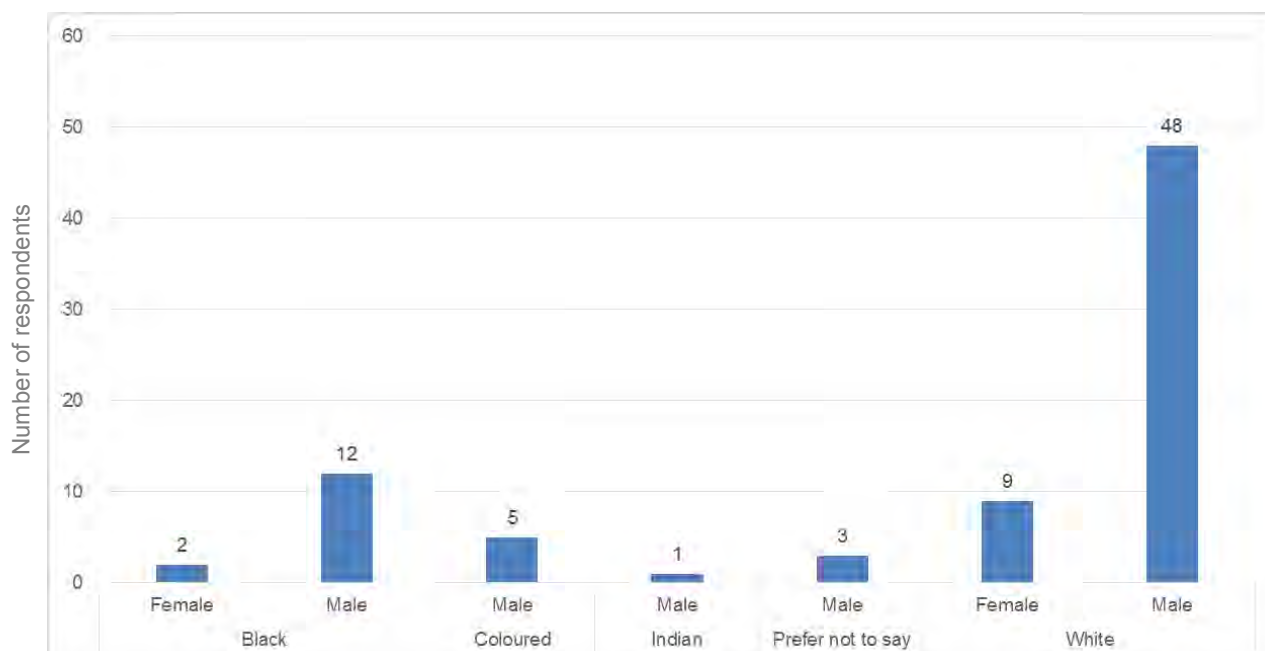


Figure 7: Respondents by Race and Gender

4.3.3 Education and Gender

The sample was fairly widely distributed by highest level of education. Holders of Masters degrees accounted for the largest proportion (24%) of the sample, followed by Honours / PgDip, then undergraduate degrees (21%). A large proportion (84%) of the sample held some form of higher education qualification, indicating a generally high level of education among the sample. Table 11 and Figure 8 describe the sample in terms of highest attained level of education and gender.

| Highest level of completed education | Frequency | Percentage of Total | Gender | Frequency | Percentage of Total |
|--------------------------------------|-----------|---------------------|--------|-----------|---------------------|
| Some schooling | 1 | 1% | Male | 1 | 1% |
| Matric / National Certificate | 12 | 15% | Male | 12 | 15% |
| Diploma / certificate | 12 | 15% | Female | 3 | 4% |
| | | | Male | 9 | 11% |
| Undergraduate degree | 14 | 18% | Female | 1 | 1% |
| | | | Male | 13 | 16% |
| Honours / PgDip | 17 | 21% | Female | 3 | 4% |
| | | | Male | 14 | 18% |
| Masters | 19 | 24% | Female | 4 | 5% |
| | | | Male | 15 | 19% |
| Doctorate | 5 | 6% | Male | 5 | 6% |
| | 80 | | | 80 | |

Table 11: Respondents by Education and Gender

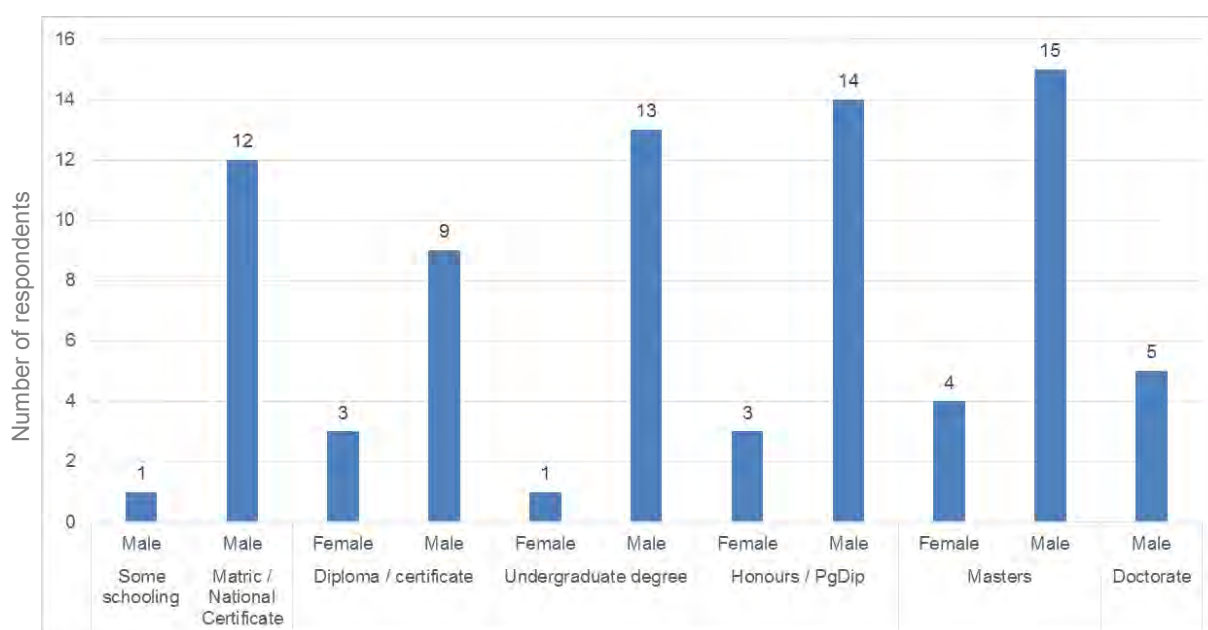


Figure 8: Respondents by Education and Gender

4.3.4 Companies by Technology Sub-category

The sample of respondent firms was fairly widely distributed across information technology industry sub-categories. 'Education, Recruitment and Jobs' accounted for the largest number (13) of respondents, followed by 'Other' (12), 'Ecommerce and Marketplaces' (11), and 'Enterprise Solutions' (8). Figure 9 describes the sample in terms of technology industry sub-category of respondent start-ups.

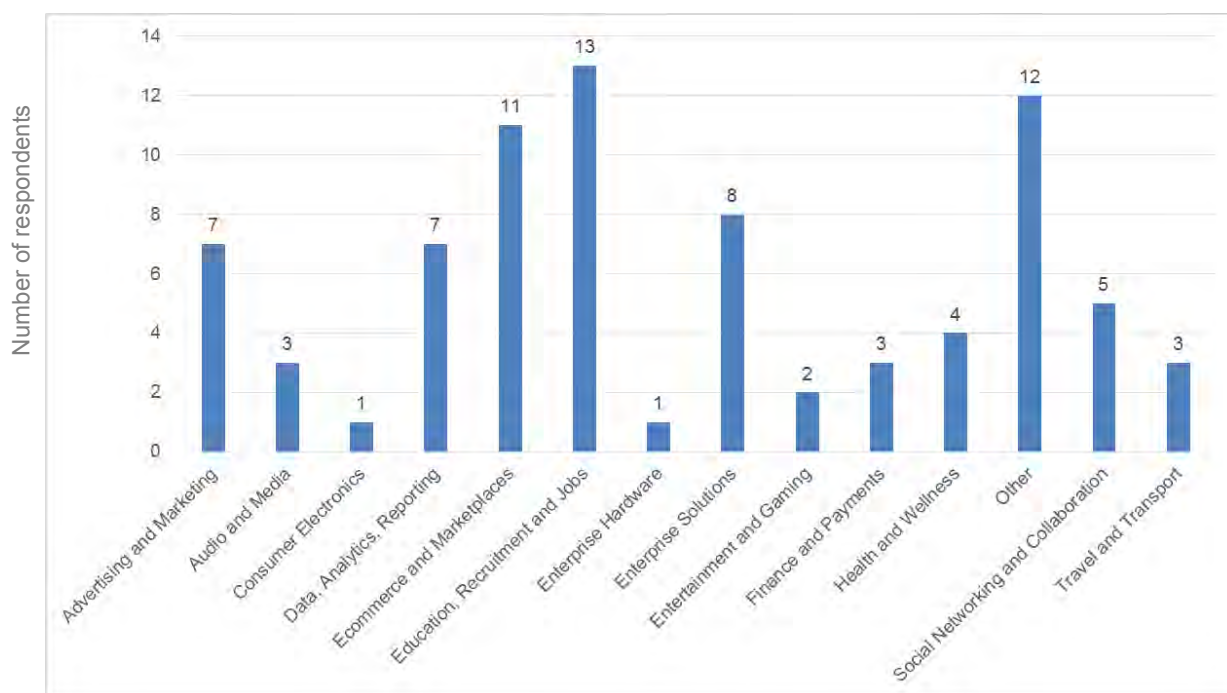


Figure 9: Respondents by Technology Sub-category

4.3.5 Companies by Maturity

Firms were sampled based on meeting the Global Entrepreneurship Monitor's (GEM) definition of either a nascent (i.e. has not paid salaries for more than 3 months) or a new firm (i.e. has paid salaries for more than 3 months, but less than 3.5 years). The sample was exactly divided in terms of 'nascent' versus 'new' organisations. Herrington and Kew (2013) report South Africa's national total entrepreneurial activity (TEA) as comprising 62% nascent entrepreneurs and 38% new businesses. Figure 10 shows the sample in terms of company maturity.

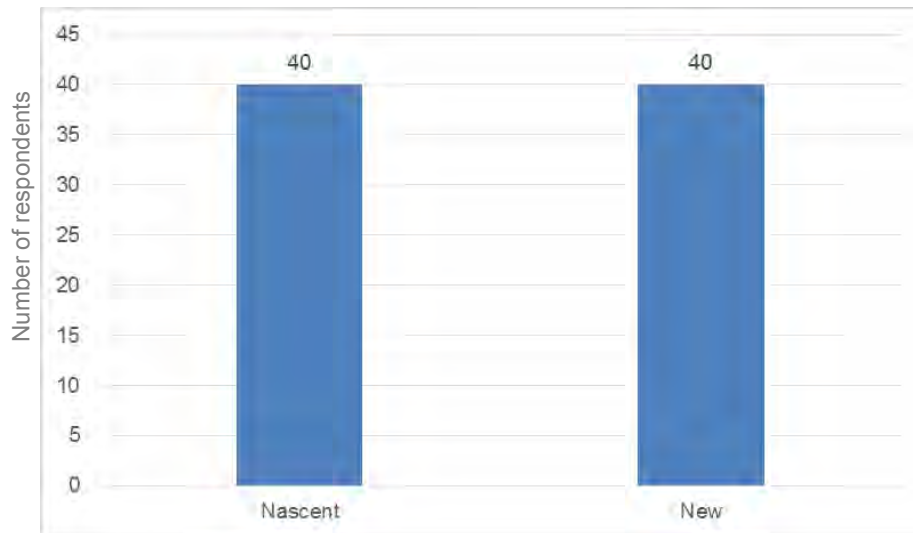


Figure 10: Respondents by Company Maturity

4.3.6 Companies by Province

A significant majority (65%) of the respondent technology companies were based in the Western Cape, followed by Gauteng (26%). Together, those two provinces accounted for 91% of the total sample. Figure 11 describe the sample in terms of company location.

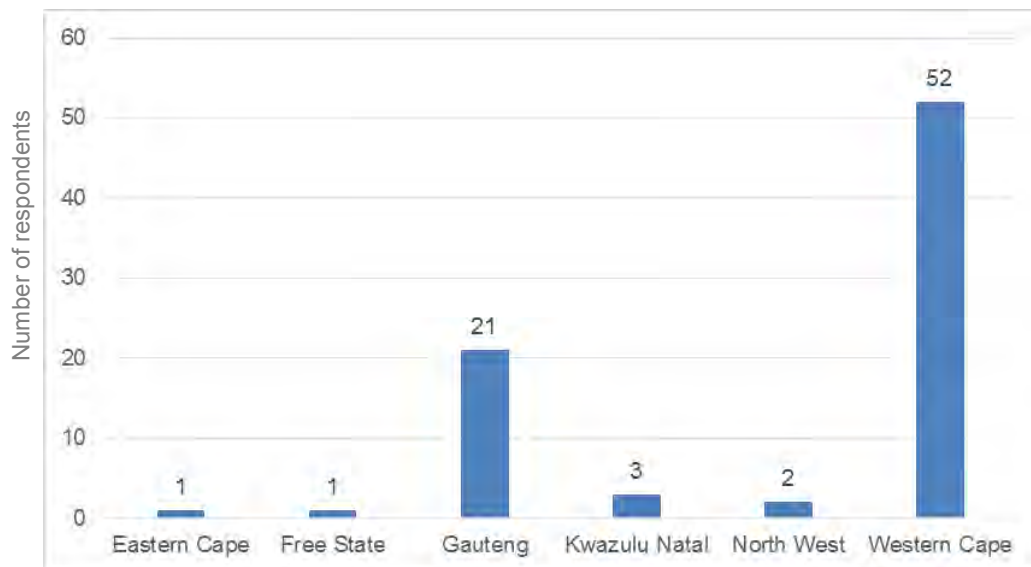


Figure 11: Respondents by Company Location

4.3.7 Analysis

In the sample, it was found that the overwhelming majority (86%) of the respondents were males. The general bias towards males is consistent with other South African studies (Brijlal, 2011; Herrington & Kew, 2013) showing higher entrepreneurial activity and intention among males than females. The extent of the bias towards males is consistent with literature that reports the underrepresentation of females in technology fields to be a worldwide phenomenon (Hampton, McGowan, & Cooper, 2011).

Considered by age, males between the age of 18 and 34 accounted for 54% of the total sample. Males between the age of 18 and 44 cumulatively comprised 80% of the sample. This indicates a strong representation in the sample of males below the age of 44. This skew towards a younger age profile is consistent with larger entrepreneurship studies conducted in South Africa (Herrington & Kelley, 2012).

By race, the sample was overwhelmingly white (71%). Combined with the age and gender demographic, the sample skewed strongly towards white males below the age of 44. Geographically, the majority of respondents (52%) were from the Western Cape.

In terms of education, the sample skewed towards holding a post-graduate qualification (51%), indicating a generally high level of education among South African technology entrepreneurs. A sizeable representation of tertiary education holders (84%) was an important factor in this study, as H3 seeks to test the presence of normative institutional forces as a consequence of the founder receiving a business education at the higher education level.

A non-probabilistic sampling method was used in this study. Therefore, it is prudent to consider the profile of this study's sample with respect to other research in the same population. This provides an insight as to the extent to which the sample may be considered representative of the population. Table 12 contrasts this study's sample with a recent industry report (Ventureburn, 2015) conducted among South African technology entrepreneurs.

| | This Sample | Comparative Sample |
|--------------|-------------|--------------------|
| n | 80 | 197 |
| White | 71% | 66% |
| Black | 18% | 17% |
| Coloured | 6% | 6% |
| Aged 25 – 35 | 51% | 47% |
| Western Cape | 52% | 59% |
| Gauteng | 21% | 29% |

Table 12: Sample Comparison

Direct gender-level comparisons are not possible given that the comparative study reported founder gender at the firm-level, not individual respondent level. However, the 86% male representation in this study is within the 68% to 95% range noted in the other study.

Across most demographic categories, similar proportionality was observed between this sample and the larger comparative study. This suggested that the non-probabilistic sampling method utilised in this study yielded a sample that had reasonable congruence with other studies in the target population.

4.4 Exploratory and Descriptive Statistics

4.4.1 *Dependent Variable*

This study examines the factors that lead South African technology start-ups to develop a formal business plan. Consistent with Honig and Karlsson’s (2004) study, a dichotomous variable was used to measure the dependent variable based on the existence and formality of a business plan. Respondents who indicated that a business plan was either not prepared or only informally prepared (Level 1 and Level 2) were coded as having ‘No Formal Business Plan’. Respondents who indicated that a written business plan had been prepared for external audiences (Level 3) were coded as having a ‘Formal Business Plan’.

Table 7 shows the frequency distribution of the dependent variable across the total sample.

| | Frequency | Percentage of Total |
|-------------------------|-----------|---------------------|
| No Formal Business Plan | 55 | 68.75% |
| Formal Business Plan | 25 | 31.25% |
| | 80 | |

Table 7: Frequencies of Dichotomous Dependent Variable

Analysis

In this sample of South African technology start-ups, less than one third (31.25%) of entrepreneurs indicated that their technology start-up had developed a formal business plan. This seemingly low level of usage of formal business plan is interesting given the centrally important role ascribed to the formal business plan in entrepreneurship literature and

education.

The observed level of business plan usage is difficult to contextualise given both the absence of prior research in this particular industry and geography, and the wide methodological variations that exist between start-up sampling criteria and taxonomies for studying business plans. This vastly diminishes the value of inter-study comparisons, though a few are briefly considered.

This study adopted the same business plan classification method as Honig and Karlsson's (2004) study in which 22% of Swedish nascent entrepreneurs were found to have written a formal business plan. In a separate Swedish study using a different methodology, 34% of entrepreneurs were found to have developed a formal business plan (Honig & Samuelsson, 2012).

A South African study (Chimucheka, 2012) conducted in the Eastern Cape reported that 28% of SMMEs had developed business plans. A US study (Bewayo, 2010) reported that 50% of study participants had developed a formal business plan, though suggested that business plan development could potentially range as low as 5%. A US study (Bartlett, 2002) of Inc 500 companies reported that only 40% of Inc 500 founders had written a formal business plan when their companies were launched. Bhide (as cited in Lange et al., 2007) reported that only one third of Harvard Business School alum wrote detailed business plans when starting their businesses.

As noted, inter-study comparisons must be interpreted with caution, though this study's finding related to the actual level (31%) of business plan creation among a sample of new firms appears of similar general magnitude to those reported in other studies.

4.4.2 Correlation Analysis

Spearman correlation coefficients were calculated and are presented as a matrix in Table 13.

Variables numbered 1 through 12 represent the study's control variables, while variables 13 through 16 represent the study's hypothesis variables related to isomorphic pressures. The 17th variable is the dependent variable, namely, the technology start-up's decision to develop a formal business plan. Correlation coefficients larger than 0.5 are indicated in bold.

The Race control variable is unordered and is thus excluded from the correlation matrix (i.e. would yield an invalid Spearman correlation coefficient). The association between the Race variable and the dependent variable is considered in the next section of this chapter.

In Table 13, strong correlations are observed between the Age variable and logically related constructs such as Marital Status, Has Children, Highest Completed Education, Years of Work Experience, and Years of Management Experience.

In terms of the dependent variable ('Developed a Formal Business Plan'), the strongest correlation is reported with H1. Weakly positive correlations are observed between the dependent variable and H2a and H2b, with an extremely weak negative correlation to H3.

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|--|--------------|--------|--------------|--------|--------|--------------|--------|--------|--------|--------|-------|--------|--------|-------|--------|--------|
| 1 Age | | | | | | | | | | | | | | | | |
| 2 Gender | 0,035 | | | | | | | | | | | | | | | |
| 3 Marital Status | 0,514 | 0,056 | | | | | | | | | | | | | | |
| 4 Has Children | 0,490 | 0,034 | 0,627 | | | | | | | | | | | | | |
| 5 Highest Completed Education | 0,336 | 0,087 | 0,197 | 0,166 | | | | | | | | | | | | |
| 6 Years of Work Experience | 0,890 | 0,052 | 0,531 | 0,467 | 0,131 | | | | | | | | | | | |
| 7 Years of Management Experience | 0,701 | 0,015 | 0,353 | 0,330 | 0,157 | 0,818 | | | | | | | | | | |
| 8 Parents Business Owners | -0,017 | -0,099 | -0,227 | -0,258 | -0,034 | -0,042 | -0,034 | | | | | | | | | |
| 9 Many Entrepreneur Friends/Relatives | 0,233 | -0,066 | -0,039 | -0,085 | 0,110 | 0,139 | 0,154 | 0,291 | | | | | | | | |
| 10 Member of Business Networks | 0,222 | 0,092 | 0,172 | 0,308 | 0,070 | 0,251 | 0,288 | -0,127 | -0,007 | | | | | | | |
| 11 Entrepreneur's First Business | -0,090 | 0,270 | 0,109 | 0,104 | 0,116 | -0,138 | -0,264 | -0,173 | -0,196 | 0,111 | | | | | | |
| 12 Encouraged by Friends/Family | -0,025 | 0,132 | 0,044 | 0,061 | -0,162 | -0,031 | -0,008 | -0,097 | 0,157 | -0,055 | 0,028 | | | | | |
| 13 H1: Sought Institutional Finance | -0,225 | 0,113 | -0,169 | -0,312 | -0,109 | -0,229 | -0,198 | -0,098 | -0,021 | -0,149 | 0,130 | 0,032 | | | | |
| 14 H2a: Perceived Adoption of BPs by Competitors | 0,000 | 0,025 | -0,059 | 0,152 | -0,050 | 0,000 | 0,011 | -0,042 | 0,025 | 0,020 | 0,154 | 0,003 | -0,013 | | | |
| 15 H2b: Perceived Link Between BPs and Success | 0,177 | -0,001 | 0,100 | 0,177 | 0,088 | 0,152 | 0,162 | -0,016 | -0,040 | 0,006 | 0,163 | 0,033 | -0,027 | 0,371 | | |
| 16 H3: Tertiary Ed Included Business Courses | -0,069 | -0,004 | -0,045 | -0,110 | 0,386 | -0,120 | -0,033 | 0,028 | 0,130 | -0,031 | 0,036 | -0,327 | -0,176 | 0,094 | -0,024 | |
| 17 Developed Formal Business Plan | 0,048 | -0,191 | 0,007 | 0,092 | 0,057 | 0,011 | 0,052 | -0,118 | -0,035 | 0,027 | 0,034 | 0,025 | 0,280 | 0,199 | 0,216 | -0,041 |

Table 13: Spearman Rank Coefficient Correlation Matrix

4.4.3 Control Variables

The study's controls includes both categorical and numeric variables. Descriptive statistics for control variables are presented separately, followed by a combined analysis considering all control variables.

Categorical Variables

Descriptive statistics for categorical variables are presented in Table 14 as a contingency table indicating the frequency distribution of independent variables with respect to the dependent variable. Row percentages are also indicated. For each variable, the bivariate test result (p-value) is noted as calculated using the outlined inferential testing method (see section 3.9).

| Control Variable | Dependent Variable | | p value |
|---|-------------------------|----------------------|--------------------|
| | No Formal Business Plan | Formal Business Plan | |
| Gender | | | 0.159 ^a |
| Male | 45 (65%) | 24 (35%) | |
| Female | 10 (91%) | 1 (9%) | |
| Age | | | 0.466 ^a |
| 18 - 24 years | 9 (90%) | 1 (10%) | |
| 25 - 34 years | 25 (63%) | 15 (37%) | |
| 35 - 44 years | 17(71%) | 7 (29%) | |
| 45 - 54 years | 1 (50%) | 1 (50%) | |
| 55 - 64 years | 3 (75%) | 1 (25%) | |
| Race | | | 0.491 ^a |
| Black | 7 (50%) | 7 (50%) | |
| White | 41 (72%) | 16 (28%) | |
| Indian | 1 (100%) | 0 (0%) | |
| Coloured | 4 (80%) | 1 (20%) | |
| Unspecified | 2 (67%) | 1 (33%) | |
| Marital Status | | | 0.952 ^b |
| Not Married | 29 (69%) | 13 (31%) | |
| Married | 26 (68%) | 12 32%) | |
| Has Children | | | 0.408 ^b |
| No | 34 (72%) | 13 (28%) | |
| Yes | 21 (64%) | 12 (36%) | |
| Highest Completed Education | | | 0.065 ^a |
| Some schooling | 1 (100%) | 0 (0%) | |
| Matric / National Certificate | 8 (67%) | 4 (33%) | |
| Diploma / certificate | 9 (75%) | 3 (25%) | |
| Undergraduate degree | 7 (50%) | 7 (50%) | |
| Honours / PgDip | 15 (88%) | 2 (12%) | |
| Masters | 14 (74%) | 5 (26%) | |
| Doctorate | 1 (20%) | 4 (80%) | |
| Parents Business Owners | | | 0.291 ^b |
| No | 26 (63%) | 15 (37%) | |
| Yes | 29 (74%) | 10 (26%) | |
| Many Entrepreneur Friends/Relatives | | | 0.755 ^b |
| No | 20 (67%) | 10 (33%) | |
| Yes | 35 (70%) | 15 (30%) | |
| Member of Business Networks | | | 0.810 ^b |
| No | 41 (69%) | 18 (31%) | |
| Yes | 14 (67%) | 7 (33%) | |
| Entrepreneur's First Business | | | 0.760 ^b |
| No | 24 (71%) | 10 (29%) | |
| Yes | 31 (67%) | 15 (33%) | |
| Encouraged by Friends/Family | | | 0.823 ^b |
| No | 19 (70%) | 8 (30%) | |
| Yes | 36 (68%) | 17 (32%) | |
| ^a : p value calculated using Fisher's exact test ^b : p value calculated using Pearson chi squared test | | | |

Table 14: Categorical Control Variables

Numeric Variables

Table 15 contains descriptive statistics for the two numeric control variables and bivariate test results with respect to the dependent variable.

Shapiro Wilk tests for normality were conducted on the two numerical variables. Both were found to have non-normal distributions, thus the Wilcoxon-Mann-Whitney test was used to conduct inferential testing for both variables (see section 3.9).

| Control Variable | Mean | SD | Dependent Variable | | p value |
|--------------------------------|-------|-----|-------------------------|----------------------|---------------------|
| | | | No Formal Business Plan | Formal Business Plan | |
| | | | Median (IQR) | Median (IQR) | |
| Years of Work Experience | 10.86 | 8.9 | 10 (4 - 15) | 10 (5 - 14) | 0.7627 ^a |
| Years of Management Experience | 5.92 | 6.7 | 3 (0 - 9) | 5 (1 - 8) | 0.5862 ^a |

^a: p value calculated using Wilcoxon Mann-Whitney test

Table 15: Numeric Control Variables

Analysis

The literature review identified a number of founder-level factors that should be controlled for their potential influence on the start-up's planning behaviour. By controlling for these factors, the study sought to isolate the effects of the hypothesised institutional pressures.

Demographic Controls

Inferential testing did not reveal any significant associations between a founder's demographic profile and the technology start-up's decision to write a business plan.

Age was not found to associate significantly with writing a formal business plan, which contrasts with Honig and Karlssons' (2004) study that reported a significant, positive association between the entrepreneur's age and the likelihood of writing a formal business plan.

Across all age groups, there was a larger proportion of respondents that did not write a formal business plan. The smallest proportion of formal business plan writers (10%) was observed in the youngest age category (18 – 24 years). Though the small base size must be considered, this may suggest that the emerging generation of technology entrepreneurs is

tending away from the tradition of developing formal business plans.

In terms of gender, the skew in the sample towards males limits the robustness of gender-level observations. However, analysis of the frequencies is indicative of certain trends. Though a smaller proportion of both males (35%) and females (9%) were inclined to develop a formal business plan, the difference in proportionality is much larger in the case of females. Brijlal (2011) reported a difference between the levels of knowledge of entrepreneurship between South African males and females. It may be that this difference in entrepreneurship knowledge effects propensity to write a business plan, though a larger sample would be required to confirm gender-level differences.

Hofstede and Hofstede (2005) posit that different cultures approach uncertainty differently. If the written business plan is appreciated by entrepreneurs as a mechanism with which to reduce uncertainty, the researcher may reasonably expect to observe differences between race groups. In this study, the Race variable was not found to associate significantly with the developing of a business plan. However, the Black race group was found to have the highest percentage (50%) of formal business plan writers among race groups.

Human Capital Controls

This study controlled for human capital in terms of highest completed education, years of work experience, years of management experience and prior start-up experience. Education and experience are considered foundational to an entrepreneur's managerial competence (Fatoki, 2014). There was no statistically significant association between the four human capital controls and the dependent variable, however highest completed education approached significance ($p=0.065$).

In terms of highest completed education, similar proportionality was observed across education levels. Two exceptions are the Undergraduate level where the proportions are equal and the Doctorate level, where a larger proportion (80%) of respondents prepared formal business plans. In the distribution of responses, the findings indicate a non-linear association between the founder's highest level of attained education and the start-up's propensity to write a business plan.

Honig and Karlsson (2004) posited that older entrepreneurs will have experienced a higher degree of exposure to institutional forces through their work experience than younger entrepreneurs. In their study (Honig & Karlsson, 2004), strong correlations were found between the writing of a formal business plan and previous entrepreneurial experience, work experience (significant) and management experience (significant). Though weakly positive

correlations were found between writing a formal business plan and previous entrepreneurial experience, work experience and management experience, the study did not report significant associations between any of these controls and the writing of a formal business plan.

Social Capital Controls

Coleman (1990) proposed that an actor's access to social networks has an enhancing effect on factors of human capital. In the correlation analysis, limited evidence of interactions between variables representing human capital and social capital was observed (excluding logically expected correlates e.g. marital status and work experience). A moderate correlation was observed between being a parent and being a member of a business network.

Inferential testing revealed no significant relationships between the dependent variable and the social capital control variables.

Proportionality was almost equal between the married (32%) and unmarried (31%) groups, with parents (36%) found to be slightly more likely to write a formal business plan than non-parents (28%). Non-significant relationships and weak correlations were observed between writing a formal business plan and having entrepreneur friends/relatives, being a member of business networks, and having entrepreneur parents. These findings are all consistent with Honig and Karlsson's (2004) study.

Notably, Honig and Karlsson (2004) reported a significant association between an entrepreneur receiving encouragement from friends and relatives with the decision to write a formal plan. This encouragement effect was found to increase the likelihood of writing a business plan by almost three times (odds ratio: 2.91). In this study, only a marginally positive correlation was found between writing a formal plan having received encouragement from friends and relatives. The relationship was further confirmed to be non-significant ($p=0.823$) in bivariate testing.

4.5 Hypothesis Testing: H1

4.5.1 Test Results

The findings with respect to the H1 variable are shown as a contingency table in Table 16. The table indicates the frequency distribution of responses with respect to the dependent variable, as well as indicating row percentages. The contingency table also includes the results of the hypothesis testing of the H1 variable representing coercive pressures exerted by institutional providers of finance.

| Hypothesis Variable | Dependent Variable | | p value |
|--|-------------------------|----------------------|---------------------|
| | No Formal Business Plan | Formal Business Plan | |
| H1: Sought Institutional Finance | | | 0.012* ^a |
| No | 22 (88%) | 3 (12%) | |
| Yes | 33 (60%) | 22 (40%) | |
| ^a : p value calculated using Pearson chi squared test ^b : p value calculated using Fishers exact test | | | |

Table 16: Hypothesis Test – Coercive Pressures (H1)

A significant relationship ($p=0.012$) is observed between H1, which represents coercive pressure, and the dependent variable at the 5% level.

4.5.2 Analysis

The ability to engage prospective providers of finance is one of the most widely advanced arguments by proponents of the written business plan (Bhide, 2000; Bewayo, 2010). This study hypothesised that coercive pressures arising from these external providers of finance would be observed to increase the propensity of the technology start-up to prepare a formal business plan. In the findings, an association ($p=0.012$) is observed that is significant at the 5% level between seeking external finance and the development of a formal business plan.

This finding is consistent with Bewayo (2010) who observed that the 'key reason' entrepreneurs prepare a business plan is to secure financing. In a study of technology-based start-ups, Pleschak and Werner (as cited in Schulte, 2009, p4) also reported that seeking external financing initiates the development of a formal business plan. This finding is contrary to other studies (Borges, Hashimoto, & Limongi, 2013; Karlsson & Honig, 2009) that have suggested that the coercive pressure exerted by providers of finance on entrepreneurs

tends to be overemphasised, and that banks and funding agencies rely more on their own assessment tools and methods than they do on the entrepreneur's business plan.

An interesting observation of this study is that 31% of South African technology entrepreneurs indicated that they had not sought external financial support. Chimucheka reported (2012) that only 17% of South African entrepreneur's had sufficient internal equity to fund the starting and operation of their business. This may indicate that South African technology entrepreneurs are less constrained in terms of personal start-up capital than entrepreneurs in other sectors. It may also indicate that South African technology entrepreneurs have greater access to non-institutional finance through their personal networks, such as family and friends. It may also reflect the different capital profile that is necessary for starting a technology-based venture as compared to more capital-intensive sectors.

In South Africa, only 3.8% of total venture capital funding is allocated to small businesses (Fatoki & Odeyemi, 2010). This leaves entrepreneurs highly exposed to the lending criteria imposed by the country's major commercial banks. Chimucheka (2012) established that commercial banks in South Africa will not grant credit to a small business that does not present a formal business plan. These contextual factors logically support the discovery of strong coercive pressures from institutional providers of finance.

Hypothesis 1a is accepted.

4.6 Hypothesis Testing: H2

4.6.1 Test Results

The findings with respect to the two H2 variables are shown as a contingency table in Table 17. The table indicates the frequency distribution of responses with respect to the dependent variable, as well as indicating row percentages. The contingency table also includes the results of the hypothesis testing of the H2 variable representing mimetic forces exerted by the South African technology start-up's competitors.

| Hypothesis Variable | Dependent Variable | | p value |
|--|-------------------------|----------------------|--------------------|
| | No Formal Business Plan | Formal Business Plan | |
| H2a: Perceived Adoption of BPs by Competitors | | | 0.442 ^b |
| Strongly Agree | 6 (60%) | 4 (40%) | |
| Agree | 15 (58%) | 11 (42%) | |
| Neutral | 17 (74%) | 6 (26%) | |
| Disagree | 16 (80%) | 4 (20%) | |
| Strongly Disagree | 1 (100%) | 0 (0%) | |
| H2b: Perceived Link Between BPs and Success | | | 0.320 ^b |
| Strongly Agree | 7 (54%) | 6 (46%) | |
| Agree | 13 (62%) | 8 (38%) | |
| Neutral | 20 (74%) | 7 (26%) | |
| Disagree | 9 (69%) | 4 (31%) | |
| Strongly Disagree | 6 (100%) | 0 (0%) | |
| ^a : p value calculated using Pearson chi squared test ^b : p value calculated using Fishers exact test | | | |

Table 17: Hypothesis Test – Mimetic Pressures (H2)

Non-significant relationships were observed between H2a and H2b, which represent two forms of mimetic pressure, and the dependent variable at the 5% level. The findings did not indicate that mimetic force, as it was measured, is a significant factor in the technology start-up's decision to write a formal business plan.

4.6.2 Analysis

Mimetic pressures are understood to lead an organisation to adopt a practice despite limited evidence for the value thereof. Organisations model themselves after competing organisations in order to acquire status-conferring legitimacy within the environment where the organisation exists (Ravichandran, Han, & Hasan, 2009). This study hypothesised that mimetic pressures arising from competitors would be observed to increase the propensity of the technology start-up to prepare a formal business plan.

The study operationalised two constructs as proposed by Teo et al. (2003) to test for mimetic forces in the case of the South African technology entrepreneur's decision to prepare a formal business plan. Mimetic pressure was measured in terms of extent of perceived use of business plans by competitors, and also the perceived linkage between business plans and competitor's success. Both hypotheses were rejected, indicating a low level of mimetic pressure.

Rationale for this outcome is sought in research that evaluates the relative effects of mimetic forces in different industry settings. Castrogiovanni (1996) observes that in mature industries, the founder of a new firm has access to extensive precedent in terms of industry trends and successful operating practices. Fields that are stable and have broadly acknowledged centres and status orders will be more homogeneous (DiMaggio & Powell, 1983). As an industry matures, the 'rules of the game' become increasingly established as that industrial sector's cultural norms. Thus, the entrepreneur entering a mature industry has means to select from an established set of mimetic strategies. This theorised difference in the strength of mimetic forces across industries of different maturity was empirically shown by Honig and Karlsson (2004).

The South African IT industry can reasonably be described as immature, as compared with industry verticals in which empirical studies have shown strong mimetic forces e.g. automotive industry, manufacturing industry, higher education (Honig & Karlsson, 2004). It is possible that cultural norms are still emergent rather than entrenched in the South African technology industry, which has a constraining effect on mimetic behaviour. This cannot be confirmed given the absence of comparative studies testing mimetic pressures as they influence this phenomenon in other South African industries.

Another factor shown to constrain mimetic action is the degree to which potential adopters of a practice perceive themselves to be fundamentally similar to competitors (Strang & Meyer, 1993). That is, the degree of mimicry is correlated with the extent to which the actor considers their individual situation to be similar to others. In this research, mimetic behaviour was measured at the level of industry competitors i.e. other South African technology start-ups. At an industry-level, there is significant diversity between information technology companies in terms of markets, products, services, and business models. Figure 9 shows the extent to which this sample was distributed over different sub-categories of technology business. It is possible that the degree of heterogeneity among start-ups in the sample had a moderating effect on mimetic forces as measured at an industry-level. Further research would be necessary to test whether intra-industry mimetic forces are stronger when measured within narrower sub-populations of technology industry companies (e.g. enterprise software companies, consumer software companies, mobile software companies, consumer hardware companies etc.).

Hypothesis 2a is rejected.

Hypothesis 2b is rejected.

4.7 Hypothesis Testing: H3

4.7.1 Test Results

The findings with respect to the H3 variable are shown as a contingency table in Table 18. The table indicates the frequency distribution of responses with respect to the dependent variable, as well as indicating row percentages. The contingency table also includes the results of the hypothesis testing of the H3 variable representing normative forces exerted by universities in the form of business education.

| Hypothesis Variable | Dependent Variable | | p value |
|--|-------------------------|----------------------|--------------------|
| | No Formal Business Plan | Formal Business Plan | |
| H3: Tertiary Education Included Business Courses | | | 0.716 ^a |
| No | 24 (67%) | 12 (33%) | |
| Yes | 31 (70%) | 13 (30%) | |
| ^a : p value calculated using Pearson chi squared test ^b : p value calculated using Fishers exact test | | | |

Table 18: Hypothesis Test – Normative Pressures (H3)

A non-significant relationship is observed between H3, which represents normative institutional pressure, and the dependent variable at the 5% level. That is, exposure to business education at the tertiary level did not significantly influence the likelihood of an entrepreneur developing a formal business plan.

4.7.2 Analysis

Universities are described as an important source of normative pressure (Tingling & Parent, 2002). Through the widespread teaching of the business plan in business courses, the activity is expected to be adopted by students as a professional method (Honig & Karlsson, 2004). This study hypothesised that technology start-ups whose founders obtained business education at the tertiary level would have a higher propensity to prepare a formal business plan.

In the results, a non-significant association ($p=0.716$) is observed between business education at the tertiary level and the development of a formal business plan. Slightly more than half of respondents (55%) indicated that their tertiary education included courses in

business or management. Interestingly, among entrepreneurs with exposure to business education at the tertiary level, 70% decided against the development of a formal business plan for their business.

This finding contrasts with Karlsson and Honig (2009, p. 28) who reported entrepreneurs to be subject to “significant normative pressure to write business plans, primarily applied by universities and by university-educated actors”. However, it is consistent with the results reported by Honig and Karlsson (2004, p. 43) who commented that “entrepreneurs seem to disregard the normative advice provided them in business classes”.

Whereas entrepreneurship is central to the courses and programmes of business schools in other countries (Bhide, 2000; Zimmerman, 2012), South African universities potentially lag behind their international counterparts in this regard. Brijlal (2011, p. 819) notes that ‘big business’ in South Africa is well served by the graduates of tertiary institutions, but that South Africa’s entrepreneurial culture is “not adequately boosted in tertiary institutions that churn out would-be bureaucrats rather than calculated risk takers.” This has been described elsewhere as the ‘preoccupation’ of universities with management in large organisations (Honig & Karlsson, 2004).

In South Africa, Brijlal (2011) tested and compared the entrepreneurial knowledge of final-year students across different university faculties. The total mean score for business school students exceeded the score of students from other faculties by only between 5% and 9%. In certain entrepreneurial knowledge areas (e.g. job creation, start-up capital, business survival), the mean score of business school students was below that of students from other faculties. This may indicate the different extent to which entrepreneurship education is emphasised in the business curricula of South African tertiary education institutes, as compared to other countries in the world.

One possible, though perhaps unlikely, rationale for this outcome is that educators in South African tertiary institutions are advocating progressive approaches to entrepreneurial planning that do not center on the written business plan, thus moderating – or even reversing - the expected normative effect of universities. This may point to an encouraging decrease in the divergence of perspectives observed between entrepreneurship researchers and entrepreneurship educators (Zimmerman, 2012).

Hypothesis 3a is rejected.

4.8 Regression Analysis

4.8.1 Equations

The approach to multivariate regression analysis was consistent with the methodology used by Honig and Karlsson (2004). Hierarchical regression was used to generate two models. The purpose of the hierarchical regression technique is to assess the contribution of additional blocks of predictor variables on the dependent variable as compared to the model without the additional predictors (Cohen, Cohen, West, & Aiken, 2002). A key advantage of hierarchical regression is that it allows comparison between two nested models to determine whether the introduction of the additional variables improved the predictive ability of the model.

A first model was generated comprising only the study's control variables. Thereafter, a second model was generated in which the variables representing the study's hypotheses (i.e. mimetic pressure, coercive pressure, and normative pressure) were entered as a block into the model.

Certain ordinal variables that were originally stratified into groups of five or more caused data to be spread too sparsely resulting in low cell counts, which can cause instability of estimates in logistic regression modelling (Cohen, Cohen, West, & Aiken, 2002). Thus, these variables were collapsed into dichotomous variables to improve parsimony and predictive power (Cohen, Cohen, West, & Aiken, 2002). Firstly, the Age control variable (ordinal) was collapsed into a dichotomous indicator of age as below 35 years of age, or older than 35 years of age. The boundary of 35 years was selected for alignment with the South African government's definition of 'youth' (Government Gazette, 2015).

Secondly, the Race control variable (unordered categorical) was collapsed into a dichotomous variable of white and non-white. Three respondents who opted to not specify a race (n=3) were excluded from the regression analysis. Finally, education was collapsed into a dichotomous variable indicating whether the respondent had attained a tertiary qualification.

Regression estimates were calculated in the form of Odds Ratios (rounded to two decimal places) rather than in terms of coefficients scales in log odds. Models 1 and 2 are presented as Table 19 and Table 20 respectively.

| <i>Independent Variable</i> | <i>Odds Ratio</i> | <i>Std Error</i> | <i>p value</i> | <i>95% Conf</i> | |
|-------------------------------------|-------------------|------------------|----------------|-----------------|------|
| Age | 0,42 | 0,36 | 0,31 | 0,08 | 2,25 |
| Gender (f=1) | 0,14 | 0,16 | 0,09 | 0,01 | 1,36 |
| Race (w=1) | 0,63 | 0,43 | 0,50 | 0,16 | 2,43 |
| Marital Status | 0,76 | 0,64 | 0,74 | 0,15 | 3,96 |
| Has Children | 1,77 | 1,46 | 0,49 | 0,35 | 8,88 |
| Has Tertiary Education | 1,50 | 1,16 | 0,60 | 0,33 | 6,80 |
| Years of Work Experience | 0,96 | 0,08 | 0,60 | 0,82 | 1,12 |
| Years of Management Experience | 1,14 | 0,11 | 0,18 | 0,94 | 1,39 |
| Parents Business Owners | 0,72 | 0,44 | 0,60 | 0,22 | 2,41 |
| Many Entrepreneur Friends/Relatives | 1,00 | 0,60 | 1,00 | 0,31 | 3,26 |
| Member of Business Networks | 0,83 | 0,55 | 0,78 | 0,23 | 3,07 |
| Entrepreneur's First Business | 1,70 | 1,01 | 0,37 | 0,53 | 5,42 |
| Encouraged by Friends/Family | 1,01 | 0,63 | 0,99 | 0,30 | 3,40 |
| | | | | | |
| Number of obs | 77 | | | | |
| LR chi ² | 9,58 | | | | |
| Prob > chi ² | 0,7277 | | | | |
| Log likelihood | -42,983444 | | | | |
| Pseudo R ² | 0,1003 | | | | |

Table 19: Model 1 – Control Variables Only

| <i>Independent Variable</i> | <i>Odds Ratio</i> | <i>Std Error</i> | <i>p value</i> | <i>95% Conf</i> | |
|--|-------------------|------------------|----------------|-----------------|--------|
| Age | 0,39 | 0,38 | 0,33 | 0,06 | 2,64 |
| Gender (f=1) | 0,06 | 0,07 | 0,02 * | 0,00 | 0,67 |
| Race (w=1) | 0,55 | 0,46 | 0,47 | 0,11 | 2,81 |
| Marital Status | 0,93 | 0,87 | 0,94 | 0,15 | 5,82 |
| Has Children | 3,71 | 3,60 | 0,18 | 0,55 | 24,93 |
| Has Tertiary Education | 2,29 | 2,28 | 0,40 | 0,33 | 16,05 |
| Years of Work Experience | 0,94 | 0,10 | 0,60 | 0,76 | 1,17 |
| Years of Management Experience | 1,19 | 0,17 | 0,22 | 0,90 | 1,57 |
| Parents Business Owners | 1,18 | 0,85 | 0,82 | 0,29 | 4,81 |
| Many Entrepreneur Friends/Relatives | 0,57 | 0,41 | 0,44 | 0,14 | 2,37 |
| Member of Business Networks | 1,15 | 0,91 | 0,86 | 0,25 | 5,38 |
| Entrepreneur's First Business | 0,93 | 0,67 | 0,92 | 0,23 | 3,81 |
| Encouraged by Friends/Family | 1,06 | 0,82 | 0,94 | 0,23 | 4,83 |
| H1: Sought Institutional Finance | 17,33 | 18,12 | 0,01 ** | 2,23 | 134,48 |
| H2a: Perceived Adoption of BPs by Competitors | 1,34 | 0,49 | 0,43 | 0,65 | 2,74 |
| H2b: Perceived Link Between BPs and Success | 1,55 | 0,53 | 0,20 | 0,79 | 3,05 |
| H3: Tertiary Education Included Business Courses | 1,14 | 0,91 | 0,87 | 0,24 | 5,41 |
| | | | | | |
| Number of obs | 77 | | | | |
| LR chi ² | 25.62 | | | | |
| Prob > chi ² | 0.0816 | | | | |
| Log likelihood | -34.963132 | | | | |
| Pseudo R ² | 0.2682 | | | | |

Table 20: Model 2 - Control and Hypothesis Variables

4.8.2 Goodness of Fit Test

Hosmer and Lemeshow's (1989) goodness-of-fit test was used in each model to assess whether the predicted frequency and observed frequency are closely aligned i.e. the closer the alignment, the better the fit of the model. There are continuous predictors in the model which increases the contingency table extensively, therefore patterns of predictor variables were created in groups of ten to form a 2 by 10 table (Stata Corp, 2016). A p-value below 0.05 would indicate that the model is not a good fit and hence the model would be rejected.

The results of the Hosmer and Lemeshow tests for goodness-of-fit for Model 1 and Model 2 are shown in Table 21.

| | <i>Model 1</i> | <i>Model 2</i> |
|----------------------------------|----------------|----------------|
| Number of Observations | 77 | 77 |
| Number of Groups | 10 | 10 |
| Hosmer-Lemeshow chi ² | 7.29 | 5.24 |
| p-value | 0.5058 | 0.7320 |

Table 21: Hosmer and Lemeshow Goodness-of-fit Test Result

The results of the goodness-of-fit test indicate that Model 1 is a good fit and so is not rejected (p=0.506). The results of the goodness-of-fit test also indicate that Model 2 is a good fit and is also not rejected (p=0.732).

4.8.3 Likelihood Ratio Test

The likelihood ratio test was used to statistically compare the goodness-of-fit of Model 1 (null model) with Model 2 (alternative model).

| | <i>Model 1</i> | <i>Model 2</i> |
|------------------------|----------------|----------------|
| Number of Observations | 77 | 77 |
| ll (null) | -47.77425 | -47.77425 |
| ll (model) | -42.98344 | -34.96313 |
| df | 14 | 18 |
| AIF | 113.9669 | 105.9263 |
| BIC | 146.7802 | 148.1148 |
| LR chi ² | 16.04 | |
| p-value | 0.003 | |

Table 22: Likelihood Ratio Test Result

The results show that adding the hypothesis variables (H1, H2a, H2b and H3) to Model 1 provided an improvement in the fit of model (p=0.003) that is significant at the 1% level.

4.8.4 Analysis

This research seeks to test a model derived from the theory of institutionalisation as a method of predicting the South African technology start-up's decision to write a formal business plan. Hypotheses were developed and tested for each of the three institutional forces. Using hierarchical logistic regression, two models were developed. An initial model containing only control variables (Model 1), and a second model that incorporated the hypothesis variables (Model 2).

In presenting regression estimates as odds ratios (exponentiation of coefficients), it is possible to observe how much more likely a South African technology start-up is to develop a formal business plan given a change in the predictor variable. The odds ratio indicates the odds of the outcome (i.e. writing a business plan) given a one unit increase in the predictor variable, holding the other predictor variables constant (A'Court, Stevens, & Heneghan, 2012). In this study, a one unit increase in a predictor with an odds ratio larger than 1 is considered to increase the likelihood of the technology start-up developing a business plan. Conversely, a one unit increase in a predictor with an odds ratio less than 1 is considered to decrease the likelihood of the technology start-up developing a business plan. In the results, confidence intervals (CI) at the 95% level are also presented to convey the precision of the estimate.

Logistic regression substitutes a Pseudo R-squared measure for the conventional R-squared 'percentage explained' measure found in OLS (ordinary least squares) regression models (UCLA: Statistical Consulting Group, 2011). In this study, McFadden's Pseudo R-squared measure was calculated to determine how well the respective models fit the data. A model with a higher McFadden's Pseudo R-squared value better predicts the outcome (UCLA: Statistical Consulting Group, 2011). Contrasted with OLS R-squared measures, Lee (2013, p. 2029) notes that a McFadden Pseudo R-squared value "between 0.2 and 0.4 should be taken to represent a very good fit of the model".

In Table 19, it is observed that none of the predictor variables in Model 1 have Odds Ratios that are significant at the 5% level. This is reasonably expected in the absence of any significant associations in the inferential testing of the control variables. The confidence interval for all variables reported in Model 1 contains 1, thus it is not possible to infer any distinctly positive or negative associations. The Pseudo R-squared measure (0.1003) is outside the 0.2 – 0.4 'rule of thumb' range for good fit (Lee, 2013). Additionally, the p-value (0.7) of Model 1 indicates that the model is not significant at the 5% level. It can be

reasonably inferred that, in the case of South African technology start-ups, the adopted set of control variables poorly predicts the decision to write a formal business plan.

Model 2, shown in Table 20, is the result of hierarchical regression in which the block of hypotheses variables, representing the three institutional forces, were added to the equation developed in Model 1. The Pseudo R-squared measure (0.2682) for Model 2 is within the 0.2 – 0.4 'rule of thumb' range for good model fit (Lee D. , 2013).

In Model 2, the Gender variable ($p = 0.02$) is significant at the 5% level. In this model, a female technology entrepreneur is 94% (Odds Ratio = 0.06) less likely to develop a formal business plan than a male. It is also found that H1, the hypothesis variable representing coercive pressures, is significant ($p=0.01$) at the 1% level. In this model, an entrepreneur who has sought external financial support is 17 times more likely (Odds Ratio = 17.33) to develop a formal business plan. However, this statistic must be treated with caution given the estimate's wide confidence interval (2.23 – 134.48). The p-value of Model 2 ($p=0.08$) indicates that the whole model is not significant at the 5% level, though is approaching significance.

Comparing Model 1 with Model 2, it is observed that the Pseudo R-Squared value increased from 0.10 (Model 1) to 0.27 (Model 2). This indicates that there is an improvement in the fit of the model. The observed improvement in the fit of Model 2 compared to Model 1 was found to be significant ($p=0.003$) at the 5% level by means of the likelihood ratio test. In conclusion, the variables representing constructs from the theory of institutionalisation generated a significant improvement in the ability to model the outcome, though the total predictive model (Model 2) was not found to be significant at the 5% level.

4.9 Summary of Results

Table 23 summarises the findings of the research according to the hypotheses that were developed and tested. Overall, this study found only coercive pressures to have a significant effect on South African technology start-ups likelihood of developing a formal business plan.

| Hypothesis | Description | Result |
|------------|---|----------|
| H1 | <i>Greater coercive pressure will lead to a higher propensity to prepare a formal business plan.</i> | |
| H1a | <i>South African technology start-ups whose founders seek external institutional financing are more likely to produce formal business plans than those that do not.</i> | Accepted |
| H2 | <i>Greater mimetic pressure will lead to a higher propensity to prepare a formal business plan.</i> | |
| H2a | <i>South African technology start-ups whose founders perceive competitors to use business plans are more likely to produce formal business plans than those that do not.</i> | Rejected |
| H2b | <i>South African technology start-ups whose founders attribute the success of competitors to written business plans are more likely to produce formal business plans than those that do not.</i> | Rejected |
| H3 | <i>Greater normative pressure will lead to a higher propensity to prepare a formal business plan.</i> | |
| H3a | <i>South African technology start-ups whose founder's tertiary education included business or management courses are more likely to produce formal business plans than those whose founders did not</i> | Rejected |

Table 23: Summarised Hypothesis Results

The research question that guides this study is:

In the absence of empirical evidence for the economic rationale, to what extent does the theory of institutionalisation explain the South African information technology start-up's decision to write a business plan?

Multivariate regression analysis was used to develop an explanatory model in which variables representing the three isomorphic pressures were used to predict a South African technology start-ups propensity to develop a formal business plan. Compared to a null

model of controls, the constructs derived from the theory of institutionalisation led to a statistically significant improvement in the ability to explain the decision to write a formal business plan. However, only the H1 construct representing coercive forces was found to be a significant (<5%) predictor of the phenomenon in the multivariate regression model. Furthermore, the overall significance of the model was not significant at the 5% level.

5. CHAPTER 5: CONCLUSION

5.1 Research Summary

This study used the theory of institutionalisation as a lens to investigate the factors that lead South African technology start-ups to develop a formal business plan. The aim of this research study was to develop and test a model of institutional pressures that predicts a technology start-up's behaviour in this regard.

To achieve this aim, the research had the following objectives:

First, to conduct a systematic literature review to determine the present state of empirical literature that tests the economic rationale for business planning in the entrepreneurial context. Having established that the empirical body in support of economic rationality remains fragmented and contradictory, a valid basis was established for the research agenda to test an alternative rationale. A research model was developed hypothesising the effects of the three pressures proposed by institutional theory. The research model was further developed to incorporate appropriate entrepreneurship domain controls across demographics, human capital, and social capital.

Second, the constructs developed in the research model were operationalised to develop a questionnaire instrument, and data gathering was undertaken using a survey methodology. A snowball sampling process was used to gather respondents. A total of 247 South African technology entrepreneurs were approached directly to request their participation. In addition, 22 organisations associated with technology entrepreneurs were approached to effect snowballing among their respective networks of technology entrepreneurs. The questionnaire was self-administered by respondents online. A total of 80 valid responses were received, with representation from six of the country's nine provinces.

The interrelationships between variables were initially explored using correlation analysis. Statistical tests were conducted to evaluate the associations between the dependent variable and control variables and hypothesis variables. Analysis concluded with multivariate regression testing to understand how the relative effects of the independent variables in predicting the likelihood of a South African technology start-up preparing a business plan.

It was discovered slightly less than one third of South African technology start-ups have developed a formal business plan. Hypothesis testing only found support for the coercive isomorphic force. The hypotheses for mimetic and normative isomorphic forces were both rejected. Hierarchical regression analysis was conducted to generate two models: an initial

model comprising only control variables, and a second model that included the study's hypothesis variables. Though neither model could be accepted as significant at the 5% level, model 2 further highlighted coercive forces as increasing the likelihood of a South African technology entrepreneur developing a formal business plan. Further testing (Likelihood Ratio Test) confirmed that the addition of the hypothesis variables had resulted in a statistically significant improvement from model 1 to model 2.

The limitations of the study and potential future research directions, as well as the implications for practice and research will be discussed in the next sections.

5.2 Limitations and Future Research Directions

The following limitations to the study are noted.

This research study was conducted in South Africa and focused exclusively on IT start-ups. The findings may not be generalisable to IT start-ups in other industries or other geographies. Further research would be necessary to establish the generalisability of these findings in other settings.

The data collection method was cross-sectional, so the study cannot present claims of causality. Future research may benefit from considering longitudinal designs to develop an understanding of how institutional pressures influence the entrepreneur's planning decision over time.

The findings are based on self-reported questionnaire data. The researcher is unable to verify the accuracy of participant responses.

This research considered predictive factors in line with entrepreneurship convention of "first and foremost, the entrepreneur" (Fernandez-Guerrero, Revuelto-Taboada, & Simon-Moya, 2012, p. 2402). Further research controlling for company-level dimensions (e.g. number of founders, number of employees, nature of market/product/service, internal capital, financial break-even etc.) may yield further insights.

Despite the use of two simultaneous approaches to sourcing participants, a final sample of only 80 respondents was obtained. The skew towards tertiary-educated white males, though plausibly an accurate representation of the population, limited the ability to draw robust conclusions regarding the phenomenon in the case of lesser represented demographic groups (e.g. female, non-white, lesser education). Also, a larger sample size may have

yielded regression equations significant at the 5% level. Future research may benefit from defining a more specific sample frame of technology start-ups in which response rates may be higher e.g. members of a local start-up business network, tenants of a technology innovation hub or incubator facility, start-ups funded by a single venture capital fund etc.

This study used a non-probabilistic sampling method which may have introduced bias into the findings and limits the ability to generalise these findings to the population. Though practical challenges exist in implementing probabilistic sampling in this specific population, future research would be strengthened by randomised sampling.

Consistent with Honig and Karlsson's (2004) study, dichotomous variables were used for the H1 variable, H3 variable, and the dependent variable. Dichotomous measures provide a relatively crude measure of the underlying construct. Future research should consider the use of more fine-grained measures in operationalising key constructs. A more granular measure for H1 would provide insight into the relative coercive pressure exerted by the different types of finance providers. A more granular measure for the nature and extent of entrepreneurship education at the tertiary level (H3) would strengthen findings related to normative pressure. In terms of the dependent variable, the literature contains numerous approaches and taxonomies for classifying business plans. A more granular measure of the dependent variable may reveal further insight regarding institutional pressures as they relate to informal planning processes.

In the literature review, only Honig and Karlsson's (2004) study was identified as using the theory of institutionalisation as a lens to quantitatively predict the likelihood of developing a formal business plan. Consequently, the present study is challenged to contrast its findings in the absence of similarly constructed studies. Also, this study primarily derived measures that have not yet been widely tested. Future research in this area should explore alternative constructs that can be derived from the theory of institutionalisation, as well as innovation in terms of approaches to operationalisation.

Dencker et al. (2009) cautioned that planning measures may act as proxies for the difficulty or complexity of the venture. Founders creating businesses that are relatively more risky or more complex may show an increased propensity to engage in formal planning. This study was conducted in a single-industry setting which provides some control for relative complexity and risk, though future research may wish to consider controlling for relative complexity or risk at the individual firm level.

As Gruber notes (2007, p. 784), "planning processes are extremely rich, multifaceted

phenomena”. Further qualitative research in this field may provide valuable insights into underlying behaviours, motivations, and opinions that are not evident in quantitative analysis.

Finally, this study only considered antecedents to the formal business plan. As shown in the systematic review, the outcomes of business planning remain controversial and, given the importance of business planning in the entrepreneurship field, further study is encouraged.

5.3 Implications for Research

The implications of this study are considered in terms of the application of the theoretical model, the study’s contribution to institutional theory, and the use of institutional theory in IS/IT research settings. Recommendations are noted in line with the identified implication.

Tingling and Parent (2002) describe the processes of isomorphism as complex, intertwined, and difficult to separate. In this study, constructs representing isomorphic pressures led to a significant improvement in the researcher’s ability to predict the phenomenon of interest (i.e. the writing of a business plan). However, it was also apparent from the multivariate regression analysis that institutionalisation as a standalone model did not comprehensively account for the phenomenon in this specific context. Consequentially, future model development in this field may wish to explore composite research models in which institutional theory is tested in conjunction with a complimentary theoretical model that also accounts for practice diffusion. Potentially suitable theoretical frameworks might include the theory of diffusion of innovations, positive deviance theory, and the theory of legitimation.

This study did not find evidence of mimetic behaviour between new entrants to an industry. Institutional theorists posit that new firms are subject to a ‘liability of newness’ which is expected to increase the extent to which they are subject to mimetic forces. In this research, even though actors believed competitor success to be linked to a certain practice, they did not show a tendency to mimic the practice themselves. Two explanations were suggested for this finding. Firstly, that industry maturity moderated the mimetic effect between actors. Secondly, that intra-industry variation moderated the mimetic effect between actors. An implication for future research using the theory of institutionalisation is the importance of controlling for both industry maturity, as well as intra-industry variation.

Finally, this research has sought to extend the empirical scope of institutional theory to entrepreneurship research in the South African IT industry setting. The research contributes

to the growing body (Teo, Wei, & Benbasat, 2003; Liang, Saraf, Hu, & Xue, 2007; Ravichandran, Han, & Hasan, 2009) of IS/IT domain research in which the theory of institutionalisation is used to explore phenomena of interest. There is wide potential for interesting deployments of institutional theory in many areas of the IS/IT domain (Bjorck, 2004). This study has sought to operationalise institutional theory in a novel way in the South African information technology setting, and hopes to provide a strengthened foundation for derivative IS/IT research in this line.

5.4 Implications for Practice

The entrepreneurship discussion that frames this research is the true value of business plans. Is the primary value of a business plan to provide strategic direction to the new firm, or simply an unavoidable speedbump on the road to finance? In the case of South African technology entrepreneurs, this research was not able to link conventional measures of an entrepreneur's competence (experience, education etc.) to the decision to write a business plan. Nor was the decision to write a business plan found to be related to increased business education or perceived usage by competitors. Across all variables tested, the only significant influence toward writing a business plan was the need for external finance. Though the two perspectives on the value of business plans are not mutually exclusive, this study's findings lend support to the latter perspective. The implications for practice are discussed below.

The survival and sustainability of emerging organisations is essential for increased entrepreneurial activity to deliver on the promises of economic growth, job creation, poverty alleviation, and income redistribution. In terms of planning and business plans, the empirical literature continues to report inconsistent findings on the association with new firm performance. Herrington and Kew (2013, p. 39) described one South African government agency as evaluating itself "on the number of business plans that have been accepted and funded, but not on the number of people the business has employed and whether it is sustainable or not". Public sector, private sector, and educational stakeholders involved in technology entrepreneurship are alerted to the present equivocality of evidence that positively links formal business plans with enhanced new enterprise performance. Particularly insofar as these various stakeholders engage with entrepreneurs and exert influence on entrepreneurial practice.

For South African technology entrepreneurs seeking institutional finance, the creation of a formal business plan seems largely unavoidable. If the technology entrepreneur's principal

purpose in developing a business plan is to secure access to finance, then he is advised to develop such a plan with close consideration to the exact requirements and expectations of the respective finance provider. Lange et al. (2007) describe this as 'customising' the plan to the requirements of the external funder. Furthermore, the entrepreneur is also cautioned to the collateral requirements that are typically prescribed by commercial lenders in South Africa (Leroy, 2012). Whilst the development of a formal business plan is likely to be a minimum requirement, financial support will typically be contingent on a wider set of factors. However, if the entrepreneur's intention is to construct a business plan that has inherent value as a strategic and management tool, he is urged to approach the development of the plan cognizant of the multiple factors that are known to moderate the relationship between planning and performance in the start-up context. This recommendation is in line with Karlsson and Honig (2009, p. 42) who suggest that entrepreneurs "should remain sceptical, particularly when accepting the translation of a century-old model designed for the management of governments and large mining companies."

For institutional providers of finance, Allred and Addams (2006, p. 17) ask whether the business plan is "like the ticket that allows the holder to enter the sports arena, but the ticket is then stuffed in a pocket or thrown away". This study did not find the writing of a business plan to be associated with factors that are generally presumed to indicate higher levels of entrepreneurial ability (e.g. level of education, prior work experience, prior entrepreneurial experience etc.). From the finance provider's perspective, the business plan should be treated carefully as a proxy measure for entrepreneurial competence. In this study, the development of a formal business plan was only found to associate with the seeking of institutional finance. Caution is drawn to industry settings where business plans appear to be developed primarily for symbolic purposes to satisfy a need to appear structured and well-planned to an external party. Under such circumstances, Karlsson and Honig (2009) suggest that entrepreneurs will 'decouple' their actual strategy from the documented business plan. At an individual firm level, risk arises in that the finance provider's assessment of risk and compliance is based on a business plan that is unreliable as the discrepancy between the evaluated plan and actual strategy widens. If the 'loose coupling' behaviour is endemic at an industry level, providers of finance are cautioned to an elevated risk profile that may characterise investments in South African technology ventures.

Given the desirable economic outcomes associated with higher levels of entrepreneurial activity, South African universities are called to meaningfully increase the supply of entrepreneurs by placing greater emphasis on entrepreneurship education. The value of such initiatives will be judged on the 'fit' of these programmes to the actual needs of

practicing entrepreneurs. The business plan, as an educational device, is frequently used for teaching entrepreneurship concepts and principles, and has been shown to be an effective methodology in this regard (Zimmerman, 2012). This study, and others, have emphasised the role of formal business plans insofar as they influence the entrepreneur's access to finance. Given that the inability to secure financing is regarded as a principal cause of new business failure in South Africa (Fatoki & Odeyemi, 2010), equipping students with the skills and knowledge to create business plans that satisfy the requirements of funders is essential. However, educators are warned that normative advice presenting business plans as an essential management and planning tool for new enterprises may be misplaced, disconnected from practice, and even untrustworthy. Brinckman et al. (2010) argue for a concomitant and dynamic approach to entrepreneurial strategy that integrates planning, learning, and doing. From an educational perspective, perhaps this entrepreneurship paradigm is more realistic, and more helpful to the aspirant entrepreneur.

Finally, the skewed demographic profile of technology entrepreneurs revealed in this study further reflects the opportunity inequality that characterises post-apartheid South Africa. The potential for ICT innovation and entrepreneurship to catalyse economic growth and inclusive social development is widely acknowledged. However, this potential will not be realised without an education system that equips all of South Africa's population groups with the gateway technology skills for meaningful participation in the digital economy. In the United States, President Obama commented that "learning these skills isn't just important for your future, it's important for our country's future" (Finley, 2013, para 3). Similarly, if ICT entrepreneurship is to be a meaningful driver of socio-economic development in South Africa, technology skills education needs to be democratised and embedded into the curricula of schools and universities that serve all of its citizens.

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7. APPENDICES

7.1 Appendix A: Research Instrument



Dear Entrepreneur,

I would like to invite you to participate in an academic research survey on factors affecting the decision of South African information technology (IT) entrepreneurs to prepare a written business plan when starting a new venture. This research contributes towards a Masters dissertation at the University of Cape Town and has been approved by the Commerce Faculty Ethics in Research Committee.

The aim of this study is to gain insight into the reasons influencing South African information technology entrepreneurs' decision to write a business plan. Entrepreneurs who are currently starting a technology company (or multiple technology companies) are invited to participate by completing the following brief questionnaire.

This questionnaire is for research purposes only and your participation is voluntary. All information will be treated in a confidential manner and used exclusively for the purpose of this study. Due to the nature of the study, you will be asked to provide some form of identifiable information however, all responses will be confidential and used for the purposes of this research only. All results will be reported at aggregate level and no personally identifiable information will be included in the findings. You can choose to withdraw from the research at any time for whatever reason.

If you consent to participate, this questionnaire will take approximately 10 minutes to complete. There are no right or wrong answers.

Should you have any questions regarding this research, please feel free to contact the researcher on 082 395 9371 or email: richardheslop@gmail.com.

Thank you for your time and participation.

Richard Heslop
Masters student
Department of Information Systems
University of Cape Town

| # | Question | Response Options |
|--|---|---|
| 1. | Do you agree to participate in this research? | <ul style="list-style-type: none"> • Yes • No [terminate] |
| 2. | Are you currently the founder of an information technology (IT) business? | <ul style="list-style-type: none"> • Yes • No [terminate] |
| 3. | Is this business based in South Africa? | <ul style="list-style-type: none"> • Yes • No [terminate] |
| Section 1 | | |
| This section contains questions related to your demographic profile. | | |
| 4. | Full Name: | |
| 5. | Age: | <ul style="list-style-type: none"> • 18 – 24 years • 25 – 34 years • 35 – 44 years • 45 – 54 years • 55 – 64 years • 64 years and older |
| 6. | Gender: | <ul style="list-style-type: none"> • Male • Female |
| 7. | Race | <ul style="list-style-type: none"> • Black • White • Indian • Coloured • Other • Prefer Not to Answer |
| 8. | Are you currently married? | <ul style="list-style-type: none"> • Yes • No |
| 9. | Do you have children? | <ul style="list-style-type: none"> • Yes • No |
| 10. | What is your highest level of completed education? | <ul style="list-style-type: none"> • Some schooling • Matric / National Certificate • Diploma / certificate • Undergraduate degree • Honours degree • Masters degree • Doctoral degree |
| 11. | [If prior question indicated tertiary education:] Did your tertiary education include any courses in business or management? | <ul style="list-style-type: none"> • Yes • No |
| 12. | How many total years of work experience do you have? | <ul style="list-style-type: none"> • [Specify] |
| 13. | How many years of work experience do you have in a managerial capacity? | <ul style="list-style-type: none"> • [Specify] |
| 14. | Are (or were) your parents business owners? | <ul style="list-style-type: none"> • Yes • No |
| 15. | Do you have many friends or relatives who have founded their own businesses? | <ul style="list-style-type: none"> • Yes • No |
| 16. | Are you a member of any trade associations, chambers of commerce, or service clubs (e.g. Lions, Rotary)? | <ul style="list-style-type: none"> • Yes • No |

Section 2

All the questions in this section relate to the information technology business of which you are the founder.

If you are presently the founder of more than one technology business, consider the most recently started business.

| | | |
|-----|---|--|
| 17. | What is the name of the company? [Leave blank if company is currently unnamed] | <ul style="list-style-type: none"> • [Specify] |
| 18. | Which category best describes the technology business? | <ul style="list-style-type: none"> • Advertising and Marketing • Audio and Media • Consumer Electronics • Data, Analytics, Reporting • Ecommerce and Marketplaces • Education, Recruitment and Jobs • Enterprise Hardware • Enterprise Solutions • Entertainment and Gaming • Finance and Payments • Health and Wellness • Social Networking and Collaboration • Travel and Transport • Other [Please specify] |
| 19. | Where is the business based? | <ul style="list-style-type: none"> • Gauteng • Western Cape • Kwazulu Natal • Eastern Cape • Free State • Northern Cape • North West • Mpumalanga |
| 20. | Is this the first company that you have founded or co-founded? | <ul style="list-style-type: none"> • Yes • No |
| 21. | Has the business you are starting paid salaries (yours or others) for more than 3 months? | <ul style="list-style-type: none"> • Yes • No |
| 22. | [If yes to previous question, then] Has the business you are starting paid salaries (yours or others) for more than 3.5 years? | <ul style="list-style-type: none"> • Yes • No |
| 23. | Did you receive strong encouragement from family and friends to start the business? | <ul style="list-style-type: none"> • Yes • No |
| 24. | Does your technology business have a business plan? | <ul style="list-style-type: none"> • Yes • No |
| 25. | [If yes to previous question, then] Which option best describes the form of that business plan? | <ul style="list-style-type: none"> • Unwritten (in your head) • Informally written for internal use • Formally written for external use |
| 26. | Has your technology business applied for funding through a bank, venture capitalist or government agency? | <ul style="list-style-type: none"> • Yes • No |

Section 3

This section contains two statements regarding business plans and IT start-ups.

When answering these questions, consider written business plans as “documents that are suitable for external audiences” (e.g. investors, financiers, partners, customers).

| | | |
|-----|---|---|
| 27. | Consider the following statement: “Most South African technology start-ups prepare a written business plan.” | <ul style="list-style-type: none">• Strongly Agree• Agree• Neutral• Disagree• Strongly Disagree |
| 28. | Consider the following statement: “South African technology start-ups that develop a business plan are more likely to be successful than those that do not.” | <ul style="list-style-type: none">• Strongly Agree• Agree• Neutral• Disagree• Strongly Disagree |

7.2 Appendix B: Organisations

1. Shanduka / Black Umbrellas
2. Bandwidth Barn
3. RaizCorp
4. RLabs
5. JoziHub
6. Awethu Project
7. Seed Engine
8. Entrepreneur Incubator
9. mLab
10. New Ventures Studio
11. Tech in Braam
12. Launch Lab
13. Smartxchange
14. The Innovation Hub
15. Seda Nelson Mandela Bay ICT Incubator (SNII)
16. Eastern Cape Information Technology Initiative (ECITI)
17. Softstart BTI
18. Invotech (Durban University of Technology)
19. Johannesburg Centre for Software Engineering (JCSE)
20. Institute of Information Technology Professionals of South Africa (IITPSA)
21. Technology Innovation Agency (TIA)

7.3 Appendix C: Sample Business Plan Formats

| Shirey (2007) |
|---|
| 1. Cover Page |
| 2. Executive Summary |
| 3. Table of Contents |
| 4. The Business Concept |
| 5. The Management Team |
| 6. The Market Analysis |
| 7. Process Analysis |
| 8. Organisation Plan |
| 9. Marketing Plan |
| 10. Financial Plan |
| 11. Growth Plan |
| 12. Appendices and supporting documents |

| Ernst & Young LLP (1997) |
|-------------------------------------|
| 1. Executive Summary |
| 2. Market Analysis |
| 3. Company Description |
| 4. Marketing and Sales Activities |
| 5. Products and Services |
| 6. Operations |
| 7. Management and Ownership |
| 8. Funds Required and Their Uses |
| 9. Financial Data |
| 10. Appendices or Exhibits |

Nieman and Nieuwenhuizen (as cited in Chimucheka, 2012)

1. Cover Sheet
2. Table of Contents
3. Executive Summary
4. Products or/and service plan
5. Marketing plan
6. Operations plan
7. Management plan
8. Financial plan
9. Appendices

Barrow, Barrow, and Brown (2008)

1. Executive Summary
2. The Business and Its Management
3. The Products or Services
4. Competitive Business Strategy
5. Selling
6. Manufacturing
7. Forecasts and Financial Data
8. Financing Requirements
9. Business Controls

Timmons and Spinelli (as cited by Allred & Addams, 2006, p20)

1. Executive Summary
2. Industry/Company/Products or Services
3. Market Research and Analysis
4. Economics of the Business
5. Marketing Plan
6. Design and Development Plans
7. Manufacturing and Operations Plan
8. Management Team
9. Overall Schedule
10. Critical Risks
11. Problems
12. Assumptions
13. Financial Plan
14. Proposed Company Offering