



BOOTSTRAP FINANCING APPLIED BY SOUTH AFRICAN ENTREPRENEURS

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ABSTRACT

The purpose of this research was to explore the application of creative techniques utilised by entrepreneurs in a South African context in order to gain access to the financial and other resources required to start up new businesses. These techniques are defined as bootstrap financing techniques. Further to this the research then set out to determine whether the application of the identified techniques differed based on certain predefined characteristics of the business and entrepreneur.

The study was based on the principals of a descriptive research study. Previously identified characteristics of bootstrap financing were combined in a survey in order to conduct quantitative research on the techniques utilised by South African entrepreneurs. The study further more gathered specific information on the characteristics of the businesses as well as the entrepreneurs for the purpose of further evaluation.

The research determined the most important bootstrap financing techniques as perceived by South African entrepreneurs. Furthermore the results indicated that that there were specific bootstrap financing techniques for which the age or size of the business influenced the importance of the application for the technique. Differences in education characteristics of the entrepreneur, was also found to be

related to the differences between associated importances of some of the bootstrap financing techniques identified.

Finally these results were used to construct an operating model for entrepreneurs depending on the characteristics of their business or of themselves, while also considering the overall importance of the techniques evaluated.

DECLARATION

I declare that this research project is my own, unaided work. It is submitted in partial fulfillment of the requirements of the degree of Master of Business Administration for the Gordon Institute of Business Science, University of Pretoria. It has not been submitted before for any degree or examination in any other university.

.....

Date:

Wilhelmus Pretorius

DEDICATION

To my partner Retha, my family and all my friends: I thank you all for your patience support and understanding throughout my MBA. You have all allowed me patiently to pursue my personal ambitions at the expense of many pleasures and social engagements. I sincerely hope the rewards will more than compensate in the future.

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- All my colleagues at Standard Bank who assisted me with the distribution of my questionnaire.
- Family and friends who assisted with the distribution of the questionnaire.
- The entrepreneurs who took the time to complete my questionnaire. The names of the respondents are listed in section 9.6 Appendix F
- My father Gerrit Pretorius for his proofreading and editing.

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CHAPTER 1: INTRODUCTION TO THE RESEARCH

PROBLEM

1.1. Introduction and Definitions

Entrepreneurship theory indicated that entrepreneurs required access to resources and more specifically financial capital in order to participate in new venture activity. Start up businesses faced significant difficulties in raising finance as well as gaining access to other resources, due to the liabilities of newness and uncertainty associated with them. Such characteristics made these businesses less attractive investments for providers of finance. Most start up businesses, of necessity, were thus initially under capitalised facing significant barriers gaining access to resources including finance (Bhide, 2000).

Bhide (2000) further argued that most entrepreneurs were unable to raise outside finance and that they were restricted to whatever they could contribute from their personal savings and raise from family and friends. Similarly Sahlman (1994) argued that finances raised for new ventures through both venture capital institutions (professional institutions that specialise in financing new ventures) and angel financiers (wealthy individuals who finance new ventures) represented by far the minority method explored by entrepreneurs, and that most entrepreneurs had to make use of bootstrapping as a means to finance new initiatives.

Harrison et al. (2004, p. 308) defined bootstrapping as “the use of parsimonious and imaginative strategies for marshalling and gaining control over resources”. Those strategies could take two different forms, the first involved creative ways of acquiring finance without recourse from banks or raising equity from traditional sources, and secondly through strategies which eliminated the need for finance through acquiring resources for little or no cost (Harrison et al., 2004). The definition as described above will be used throughout this study to describe the term Bootstrapping.

Bhide (1992) argued that the biggest challenge for entrepreneurs did not lie in the raising of finance but rather in the doing without. Timmons (1999) suggested that bootstrapping was a way of life for entrepreneurial companies. Many great companies started through the use of bootstrap financing strategies, indicating the effectiveness of imaginative bootstrapping. Little (1987) identified 16 global icon organisations that were founded on bootstrapping methods, Coca-Cola, McDonald's and Xerox all attribute their beginnings to bootstrapping methods implemented by their founders.

This chapter investigated the need for conducting the research, framed against both the global and more specifically the South African context. Subsequent sections would clarify the research problem for investigation as well as the scope.

1.3. Context of Research Problem

The role of entrepreneurs and the development of a vibrant small and medium enterprise sector are important in establishing economic development. A high level of new firm creation significantly contributes to the economic vitality of a region and is a major signal of a dynamic economy (Lee et al., 2004; Muhanna, 2007). This significance is further illustrated by recognising the contribution of small to medium enterprises to the United States economy, where between 40 and 60 percent of the gross national product is related to this sector and about 50 percent of the workforce have been employed in the small to medium enterprise sector (Neubauer and Lank, 1998).

1.3.1. Research Significance within the South African Context

In South Africa small medium and micro enterprises had been identified as a priority in creating jobs (Pretorius et al., 2005). The Global entrepreneurship monitor indicated that South Africa performs poorly in relation to other developing countries selected for the study (Johnston et al., 2004; Orford et al., 2003). South Africa ranked in the bottom quartile of all countries with regards to opportunity and new firm activity, and achieved an overall low rating on survival rates for new entrepreneurial ventures (Orford et al., 2003). Most alarming was the fact that South Africa ranked 20th out of 34 countries in 2004 and in 2005 South Africa only ranked 25th out of 35 countries in the Global Entrepreneurship monitor evaluation (Broembsen, 2005).

Access to finance had been mentioned in many studies as a key inhibitor to entrepreneurship (Harrison et al., 2004; Lee et al., 2004; Bhide, 2000). South Africa was no exception where the 3 most prominent inhibitors to entrepreneurship were identified as government policy (overly complex regulation and taxation), access to finance and poor primary and secondary education (Broembsen, 2005). Orford et al. (2003) argued that financial institutions provided funds to only a small minority of entrepreneurial firms, and that most entrepreneurs had to rely on financial support from informal investments as sources for financing new start ups.

This section indicated how South African entrepreneurs enjoyed relatively low survival rates, while the decline in entrepreneurial activity in comparison to other countries indicated the need for South African entrepreneurs to become more efficient in overcoming barriers to entrepreneurial activity. Understanding how successful entrepreneurs had overcome barriers to entrepreneurial activity and more specifically resource constraints thus became critical in gaining an understanding how entrepreneurial activity and survival rates could be improved in the South African context.

1.4. Definition of the Research Problem

The global entrepreneurship monitor studies distinguished between entrepreneurship of necessity and entrepreneurship of opportunity. Entrepreneurship based on necessity was broadly defined as businesses that were established by the owner based on the premise that the owner had no other means of earning a living, and the business was thus little more than a survival strategy. Entrepreneurship in response to an identified opportunity (a perceived opportunity in the market place, opportunity to live a different lifestyle or earn more money) was referred to as opportunity entrepreneurship (Broembsen, 2005).

The global entrepreneurship monitor identified opportunity entrepreneurial ventures as the ventures most likely to contribute to reducing unemployment and fostering entrepreneurial growth. The study further identified that South Africa had the second lowest opportunity to necessity ratio of all developing countries in the survey, and the lowest survival rate of all the developing countries (Broembsen, 2005).

Access to finance had commonly been sited as a major inhibitor for entrepreneurial activity as indicated in the previous section. Johnston et al. (2004) clearly indicated how the lack of access to finance was incorrectly perceived as the major obstacle and reason for failure of new businesses. Gaining an understanding of how entrepreneurs managed without external

finance was critical in enhancing new firm creation and improving the survival rate of new firms.

Researchers have called for research in the field of informal capital flows and bootstrapping strategies (Bygrave et al., 2003). Mason and Harrison (1999) had further requested the investigation of bootstrapping and informal capital flows in nations not previously studied. Harrison et al. (2004) also noted the lack of research in bootstrapping both in the areas of finance and business development, as a means for business development and new venture development.

The research aim was thus to investigate the use of bootstrap financing techniques identified in previously conducted research in other countries, within the South African context.

1.5. Research Scope

The scope of the research was limited to the investigation of opportunity entrepreneurship ventures as defined in the previous section. The study investigated bootstrapping techniques applied by opportunity entrepreneurs (entrepreneurs who pursued opportunities not as a survival strategy) in South Africa in their pursuit to establish new businesses. The study did not consider businesses where the intent of the entrepreneur was solely day to day survival

but rather businesses where they had managed to go beyond survival and made a more significant economic contribution.

The research was further restricted to businesses formed post 1994 and businesses that had traded for a minimum of 12 months. 42 Months was the accepted benchmark period of time used in the measurement of new firm survival by the global entrepreneurship monitor (Broembsen, 2005). Rather than focus on businesses that had survived for 42 months, it was decided to reduce the 42 months to 12 months based on the assumption that survival for 12 months indicated that there was potential to survive.

Bootstrap financiers avoided relinquishing equity in a pursuit to preserve ownership, and therefore the focus for investigation was limited to businesses where ownership of the business still resided with the original entrepreneur.

1.6. Subsequent chapters of the research report

The subsequent chapters were structured as defined in this section:

Chapter 2 provides a review of the literature pertaining to the concept of bootstrap financing, the theories related to small firm financial access and capital structures and lastly explores some of the characteristics of the business and owner which influenced their success, especially within a South African context.

Chapter 3 outlines the specific research question and hypotheses for investigation.

Chapter 4 describes the methodology employed. The chapter includes the sampling techniques, the methods for data collection as well as the data analysis methodology. The chapter is concluded with a consistency matrix that shows how the theory, research question and hypothesis were linked.

Chapter 5 presents the results as collected through the quantitative research.

Chapter 6 presents an interpretation of the results against the literature review.

Chapter 7 presents the findings and recommendations based on the results achieved through the study.

CHAPTER 2: LITERATURE REVIEW

2.1. Introduction

Chapter two explored the sources of funding to which new firms had access, as well as the theories which impacted small business capital structure decisions and requirements. The theory base was then further expanded to include an investigation of bootstrapping as a means of securing resources. Ultimately the chapter explored some of the characteristics of the business and owner which might have influenced their behaviour with a specific focus on South African entrepreneurs.

2.2. New Business Sources of Capital

Resources are central to entrepreneurship and can be broadly divided into 5 categories. Human capital (the entrepreneur or entrepreneurial team) and organisational resources (organisation relationships and non-founding members) relate to the internal resource base of the firm. The other three forms of resources relate to external resources which have to be acquired or gained access to. They can be described as social capital (actual and potential resources flowing through a relationship network) physical capital (tangible goods like materials and equipment) and lastly financial capital (funds needed to grow the business) (Greene and Brown, 1997). Figure 1 displays the types of resources firms need to take into consideration.

The focus in this section was primarily placed on financial capital although the other forms of capital could not be ignored. The sources of capital were referred to as financial capital in that section.

Figure 1: Sources of firm resources

Resources	Internal Resources Has access to	
	Human Capital	Entrepreneur and Entrepreneurial Team
	Organizational Resources	Organizational Relationships Non- Founding Members
	External Resources Needs to acquire or gain access to	
	Sources	Examples
	Social Capital	Potential resources through relationship networks
	Physical Capital	Tangible goods such as Equipment and Material
	Financial Capital	Funds Required to cover expenses and grow business

There were primarily 3 categories through which new businesses could access finance via. self finance options, network finance options and institutional finance options. Self finance options included sources of finance which the entrepreneur could provide through his personal wealth and personal debt. Network finance options included funding gained through relationships with friends, family, colleagues etc. and institutional finance include banks, venture capitalists (organisations that finance early stage businesses in exchange for equity with the expectation of high potential growth) angel financiers (wealthy individuals with

similar expectations than venture capitalists) and government programs (Orford et al., 2003).

Many studies indicated the significance of informal (self and network financing options) funding for entrepreneurs, and the unlikely chances of securing institutional finance especially in the early stages of the business for entrepreneurs (Berger and Udell, 1998; Bhidé 2000, Orford et al., 2003, Freear et al., 2002). Orford et al. (2003) suggested that only 27% of new start ups in South Africa expected to use institutional finance to fund their new ventures, while 54% of the entrepreneurs expected to use their own income or savings.

2.3. Small Business Growth Cycle Model

Berger and Udell (1998) postulated in their study of the growth cycle of small businesses, that as firms became larger older and more transparent with regards to their information, their financing options became more attractive. The model was summarised in figure 2

Figure 2: Financial Growth Cycle (Berger and Udell, 1998)

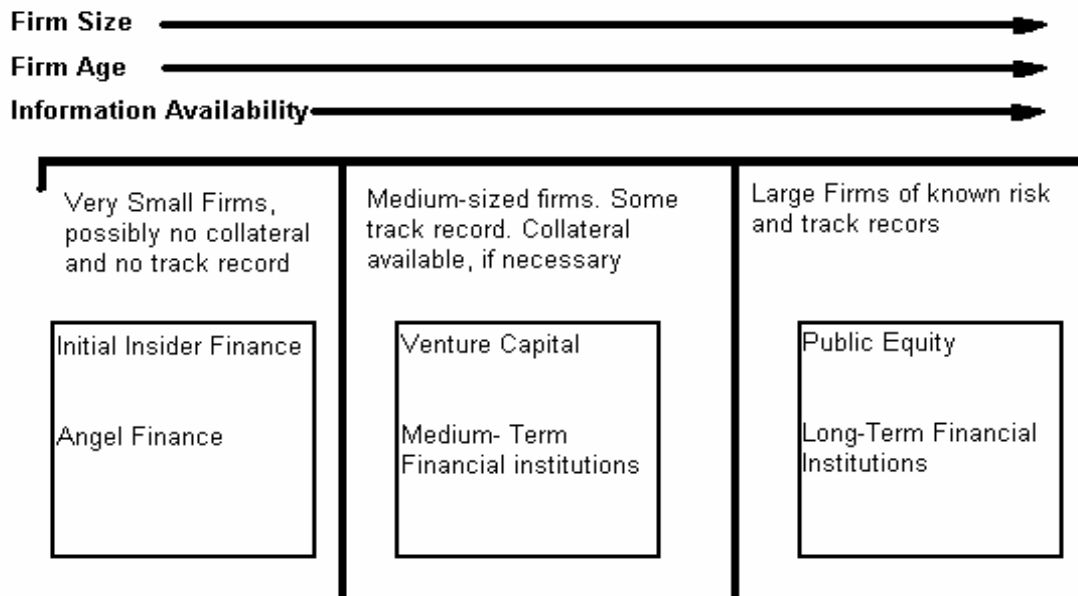


Figure 2 represented a graphical illustration of the financial growth cycle model for firms. The model suggested that the closer a firm lies to the origin of the continuum of size or age or information transparency, the more the firm had to rely on internal financing options. Through growth the firm should be able to move away from the origin of the continuum, as it increased in size, age and information transparency, enabling it to access capital through public equity and long term debt financing (Berger and Udell, 1998).

Gregory et al. (2005) concluded that the financial growth cycle model as proposed above, only partially succeeded in predicting the nature of the firms capital structure decisions. The study indicated that firm size measured in terms of the number of employees served as a valid indicator for capital structure decisions, while the age of a firm yielded contradicting results. They concluded

that the performance of the underlying firm could have led to the model not holding true for firm age, since older firms with low growth expectations would not be able to attract venture capital as easily as younger firms with higher growth expectations.

The theory thus suggested that age, size and extent to which information regarding the firm is available played a significant role in the sources of finance available to the firm. The focus for the purposes of this research resided with the sources available to small firms excluding the option of Angel financiers. The theory further suggested that smaller younger firms had a greater dependence on insider finance due to the lack of institutional finance options.

2.4. Small Business Capital Structure Theories

Small capital structure decisions differed from larger businesses largely because they relied mostly on private markets for financing. Due to small businesses reliance on internal funding during their initial stages it was widely accepted that small business had a different optimal capital structure to larger businesses (Berger and Udell, 1998).

Modigliani and Miller (1958) found that for perfect capital markets financial structure and financial policy for real investment were irrelevant and that the firms financial structure (internal liquidity, debt leverage, dividend payments etc.) did

not affect the market value of the firm, which ultimately indicated that the firm could regard internal and external finance as perfect substitutes. Gretler (1998) however indicated that capital markets were no longer perfect and that factors such as transaction costs, asymmetric information and agency problems could create a financial hierarchy in which internal finance became less costly than debt finance.

Transaction costs for issuing bonds and equity could be significant and related to the costs for compensating underwriters, registration fees and taxes, legal and accounting costs. Asymmetric information could cause a significant disadvantage in raising external finance. That was largely caused by the fact that investors could not distinguish between good and bad investments, and therefore had to price according to their average expected return, which implied that securities issued for good investments were generally undervalued. That undervaluation thus implied that good projects could be financed cheaper internally (Myers and Majluf, 1984).

The presence of agency problems might also have implied a cost premium to using external finance. Assuming asymmetric information the firms' managers might have pursued their own interests at the expense of the firms' stockholders and bondholders. That conflict in interest could also have boosted the cost of obtaining external finance, because stock holders might have attempted to control management behaviour through audits, budget controls and incentive

systems designed to align interests between shareholders and managers (Jensen and Meckling, 1976). Those actions imparted a cost premium on utilizing external finance due to both direct costs of monitoring management and indirect costs due to the reduction in flexibility of management and the associated loss of profit opportunities (Smith and Watts, 1982).

Due to external funding having been more expensive, a pecking order framework was developed (Myers, 1984). This framework suggested that firms financed their needs in a hierarchical manner. That suggested that firms used internal funds while they were available before they incurred debt or looked to equity. Given that capital markets were not perfect and that internal and external financing were not perfect substitutes, firms investment decisions were constrained by the availability of internal funds (Kong-Wing Chow and Ka Yiu Fung, 2000).

Firms, however, were impacted differently by financing constraints. Smaller firms faced even higher costs in accessing external finance. Due to the general lack of public information on smaller firms they experienced higher asymmetry of information. That asymmetry could have excluded smaller firms from bond and share markets (Carpenter et al., 1994). Smaller firms thus had to rely more heavily on bank loans than larger firms. In order to ensure a steady supply of credit those smaller firms needed to cultivate stable relationships with a few banks (Kong-Wing Chow and Ka Yiu Fung, 2000). Those banks then became

virtual monopolies to the small business which implied that they could exercise their market power in lending to the small firm. Borrowing costs for the firm increased as a result (Cowling and Sudgen, 1995). Small firms as a result of those factors became more dependent on internal funds for their investments.

Cassar (2004) proposed that both the entrepreneur and the financiers had the ability to enact methods that would reduce the information asymmetries and agency costs mentioned. New firms however remained restricted in their options since they had no track record to use as a signal of quality, their ability to forecast future earnings was also reduced. Financiers had options in terms of adjusting rates, or requiring collateral, or using signals such as ownership held by the entrepreneur and reputation of the entrepreneur.

Figure 3: Small firm lending information asymmetry model (Lean and Tucker, 2003)

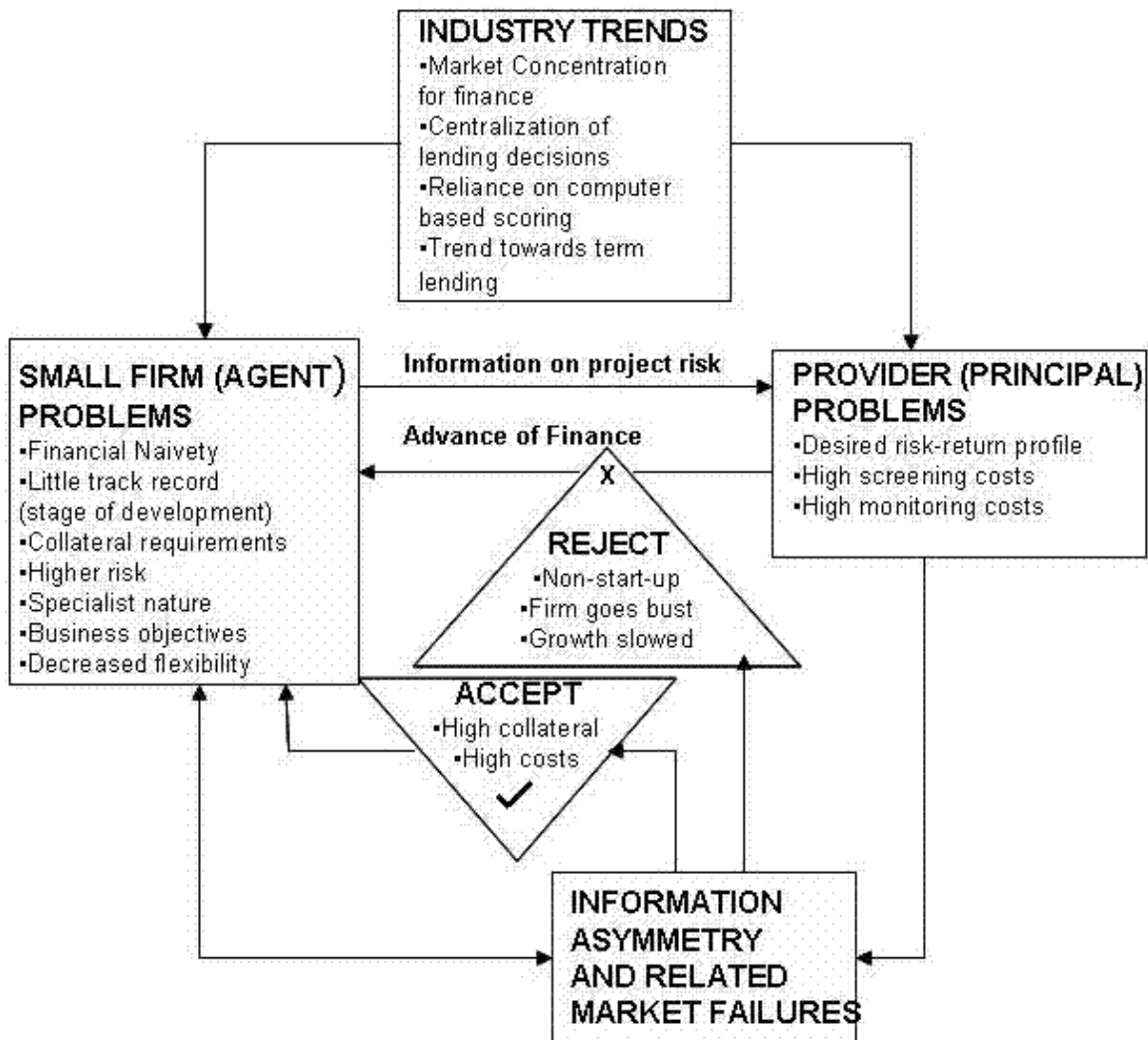


Figure 3 represented a model of the principal agent problems as well as associated costs experienced by smaller firms. The model explained the conflicting interest between the principal (provider) and agent (small firm) with a specific focus on high street bank financiers. As was indicated by the preceding authors that information asymmetry might have resulted in smaller firms

accepting loans but at higher interest rates or it might have resulted in the inclusion of stricter collateral requirements or ultimately the complete rejection of the application. The model secondly identified how industry trends such as centralisation of lending decisions, greater market concentration for finance and a greater reliance on computer credit scoring compounded the problems (Lean and Tucker, 2003).

This section indicated how several factors impacted on the costs of external financing for small firms and how internal funding was the least expensive option for financing if such funds were available to the firm. The inability of formal and public institutions to value small unknown firms efficiently often restricted small businesses to the use of resources internally generated.

2.5. The Concept of Bootstrap Financing

The preceding sections alluded to the factors which influenced small business capital structure as well as the constraints small businesses faced with regards to access of finance.

Starr and MacMillan (1990) introduced the concept of acquiring or exploiting resources through social contracts rather than economic transactions as well as the concept of getting resources at lower costs through social contracts. They did however not refer to those concepts as bootstrap activities.

In the 1990's scholars started using the term bootstrap finance, and identified the combination of some specific methods related to the acquiring of resources as a distinctive realm for investigation (Neeley, 2002). Bhide (1992) defined bootstrapping initially as the launching of new ventures through personal funds and identified the wide usage of specific methods. He further introduced reasoning behind the phenomenon, and identified poor fit of objectives, hidden costs of venture capitalists money, strategic conflicts as well as reduced flexibility as some of the reasons for bootstrap financing methods being applied. He indicated that the above stated reasoning encouraged the use of bootstrap financing for entrepreneurs.

In 1995 the definition was further expanded to include the stages of rapid growth rather than just the initial start up phase, while also broadening the types of resources required beyond that of finance (Freear et al., 1995). They defined bootstrapping as the use of highly creative methods for acquiring resources without borrowing money or raising equity through traditional institutions. Those authors further highlighted the importance of forming strategic alliances as a method for gaining access to resources.

The definition of bootstrap financing had been refined to include the variety of means which assisted with the identification and maximisation of resources and their efficiency, as well as the minimisation of the explicit costs of implementing

those means. The definition included means found within the organisation, obtained through other people or companies or organisations (Bhide, 1992; Freear, et al., 1995; Winborg and Landstrom, 2001).

Numerous techniques had been identified as suitable for use by entrepreneurs who were required to apply bootstrap financing techniques. Freear et al. (1995) identified the usage of certain techniques in the software industry in Massachusetts, while Harrison et al. (2004) replicated this study in Northern Ireland. Their analysis differentiated between techniques applied in pursuit of business development and the techniques utilised to facilitate product development.

Neeley (2002) similarly identified common techniques of bootstrapping applied in the United States based on research conducted by Winborg and Landstrom (2001), as well as his own qualitative research conducted. Chapter 9.1 Appendix A lists those techniques, while also grouping the techniques into logical groups where the techniques share some common characteristics.

2.5.1. Starting a Business through bootstrapping

Timmons (1999) argued that the use of bootstrapping strategies could be a source of competitive advantage in that it created a 'discipline of leanness' where everybody knew that costs matter, while it also facilitated the conservation of equity which resulted in the maximisation of shareholder value. Contrasting to

that view, bootstrapping had also been identified as the ad hoc reduction in the operating cost base which might constrain growth (Winborg, 2000).

Bhide (1992) referred to bootstrapping as a zero inventory, just in time system that revealed problems and forced the company to solve them. They further discussed how companies with more funds tended to burn cash quickly fixing symptoms to problems rather than the causes. Similar to Timmons (1999) they believed that bootstrapping could assist a firm in building their own unique competence.

Bhide (1992) believed that external funding often resulted in the loss of flexibility of small firms. Furthermore those new start ups entering new industries seldom got things right at first and external investors often prevented entrepreneurs from following a strategy of trial and error, which was believed to be required at times for small start ups to flourish. They concluded that entrepreneurs with limited experience in dealing with investors were often better off avoiding them even if it meant foregoing access to capital.

Gianforte (2006) believed that bootstrapped businesses ensured that:

- The legitimacy of the value proposition of the business was ensured.

Bootstrapping entrepreneurs were forced to recognize the importance of the customers' response to the business' value proposition.

- The sales learning curve was accelerated. Not having cash ensured that intentions were directed towards sales, while having too much cash could reduce that emphasis. Bootstrapping necessitated getting orders confirmed.
- Accelerated the time-to-market. Entrepreneurs who pursued external funding often spent lots of time cultivating investors while the funding was not guaranteed. Bootstrapping entrepreneurs started immediately.
- Adaptability of the business was optimised. Bootstrapping entrepreneurs did not become slaves to investors and were free to change direction and respond to unanticipated challenges and opportunities.
- The entrepreneurs ended up owning their businesses.

Bootstrapping requires creativity and imposes several growth constraints upon new start ups. New businesses however often don't have a choice since external funding may not be an option. Furthermore there are benefits to starting a business through bootstrapping such as the benefits identified in the preceding paragraph.

2.6. Entrepreneurial behaviour in South Africa and Bootstrapping

The acquisition of capital was determined broadly by both internal and external factors. Internal factors included for example the characteristics of the owner,

such as his goals and business objectives while external factors included, for example, market conditions (Timmons, 1999).

Muhanna (2007) identified that the primary individual factors influencing entrepreneurial development in South Africa included education, social network effects, as well as individual characteristics such as cognitive ability. Muhanna (2007) recognized that entrepreneurs were generally educated better than non-entrepreneurs and that entrepreneurs tended to come from entrepreneurial families or have friends who were entrepreneurs.

The acquisition of capital was influenced directly by the entrepreneur's knowledge of the sources of capital available to the entrepreneur (Van Auken, 2001). Gibson (1992) believed that the financing theory of small firms needed to be amended to accommodate what he called the 'knowledge gap' or limited awareness of potential sources of capital, as well as the advantages and disadvantages associated with alternative sources.

The global entrepreneurship monitor cited access to finance as one of the major barriers to entrepreneurship identified in South Africa (Broembsen, 2005). Education and entrepreneurial exposure through family and friends were further identified as factors common to most South African entrepreneurs (Muhanna, 2007). The ability to overcome resource constraints together with social networks and education were considered common to entrepreneurs who were successful

within the South African context. Did that imply that well educated entrepreneurs with exposure to other entrepreneurs were better equipped to overcome barriers associated with acquiring resources?

2.7. Literature Review Conclusion

This chapter considered theories regarding the sources of finance available to small firms as well as the factors that impacted on the firms when deciding which sources to pursue. The chapter further considered the factors which impacted upon the optimal capital structure of small firms. The concept of bootstrapping was then evaluated as an alternative to seeking resources through more formal means. Lastly South African entrepreneurs were discussed with a specific focus on factors found more common in entrepreneurs than non entrepreneurs.

The literature review concluded firstly that the sources of finance available to a firm were determined to some extent by the size, age and degree of information transparency of the firm. Furthermore those small firms experienced a unique situation whereby internal funding was cheaper than external funding and that their optimum capital structure differed from that of larger firms. Lastly the chapter concluded through identifying that South African entrepreneurs tended to be better educated than non entrepreneurs and that they generally had friends or family who were entrepreneurs.

Lack of access to resources necessitated the utilisation of bootstrapping by entrepreneurs in order to establish and grow new firms. Several benefits arose from bootstrapping none more significant than the preservation of ownership for the entrepreneur. Given that South African entrepreneurs were, in general, better educated than non entrepreneurs and those entrepreneurs were more likely to have friends and family who were entrepreneurial than non entrepreneurs, this chapter concluded by posing the question whether those factors influenced the entrepreneurs ability to overcome their resource constraints?

The hypothesis formulated in chapter 3 were a direct consequence of the conclusions reached in this chapter.

CHAPTER 3: RESEARCH QUESTION AND HYPOTHESIS

3.1. Introduction

Literature in the field of small business financing and capital structure suggested that small businesses were constrained in their ability to access finance primarily due to 3 categories viz., size of the organisation, age of the organisation and the degree of information transparency (Berger and Udell, 1998).

Chapter 2 provided an overview of the concepts mentioned above as well as an overview on bootstrap financing. The chapter further expanded on factors which influenced bootstrapping and entrepreneurs in a South African context. The subsequent sections of this chapter contained the research question as well as the hypotheses for this research. These Hypotheses formed the summary of intent for the research based on the literature reviewed in chapter 2.

3.2. Research Question 1

Previous research conducted on the utilisation of bootstrapping techniques by entrepreneurs, included analyzing the output from the participants in terms of ranking the techniques with regards to their perceived importance (Neeley, 2002; Harrison et. al., 2004). In order to gain some understanding of the behaviour of

South African entrepreneurs those responses needed to be compared against the aforementioned research conducted.

This research question thus aimed to establish an understanding of the most important bootstrapping techniques based on the perceptions of South African entrepreneurs. The results achieved from this analysis could then also be used to establish differences with regards to the perceived importance of the bootstrapping techniques when comparing South African entrepreneurs against the previous research results. The results achieved in the research conducted by Neeley (2002) formed the basis for comparison, necessitated since the research conducted by Harrison et al. (2004) as well as Freear et al. (1995) were based on the software industry only.

The question resulting was thus:

Which bootstrap financing techniques were perceived most important to South African entrepreneurs and how did the rankings compare to the previous study that had been conducted by Neeley (2002)?

3.3. Hypothesis 1

Harrison et al. (2004) investigated several identified bootstrapping techniques and established that small businesses and large businesses differed with regards

to the perceived importance of those techniques. That study had been conducted in Northern Ireland for the software industry.

Gregory et al. (2005) defined the size of a business based on two criteria, the first being the annual sales generated by the business and the second based on the number of permanent employees employed by the business. The hypothesis hence needed to be analysed, in terms of both definitions, for size of the business.

3.3.1. Hypothesis 1a

This hypothesis related to the size of the business as determined by annual sales and was as stated below:

Null Hypothesis (Ho): There was no significant difference between the mean or median responses relating to the perceived importance of the use of bootstrap financing techniques for businesses of different sizes, where the size of the business was determined by the annual sales turnover of the business.

Alternative Hypothesis (Ha): There was a significant difference between the mean or median responses relating to the perceived importance of the use of bootstrap financing techniques for businesses of different sizes, where the size of the business was determined by the annual sales turnover of the business.

The significance level for hypothesis 1 was defined as 5%. This hypothesis needed to be evaluated twice to incorporate both definitions for the size of the business.

3.3.2. Hypothesis 1b

This hypothesis was related to the size of the business determined by the number of permanent employees and was as stated below:

Null Hypothesis (Ho): There was no significant difference between the mean or median responses relating to the perceived importance of the use of bootstrap financing techniques for businesses of different sizes, where the size of the business was determined by the number of permanent employees.

Alternative Hypothesis (Ha): There was a significant difference between the mean or median responses relating to the perceived importance of the use of bootstrap financing techniques for businesses of different sizes, where the size of the business was determined by the number of permanent employees.

The significance level for hypothesis 1 was defined as 5%. This hypothesis needed to be evaluated twice to incorporate both definitions for the size of the business.

3.4. Hypothesis 2

Harrison et al. (2004) secondly defined three categories related to the age of the businesses under consideration. New firms were defined as businesses in existence for less than 4 years while older businesses were defined as businesses in operation for more than 4 years. They included a last category for business older than 10 years but results indicated that this category was very similar to the category for businesses older than 4 years and newer than 10 years. Thus only two categories accommodated the age of the business: new businesses were defined as being in operation for less than 4 years while all businesses older than 4 years were considered as old.

Null Hypothesis (H₀): There was no significant difference between mean or median values of new and old business with regards to their perceived importance of the bootstrap financing techniques evaluated in South Africa.

Alternative Hypothesis (H_a): There was a significant difference between mean or median values of new and old business with regards to their perceived importance of the bootstrap financing techniques evaluated in South Africa.

The significance level or alpha for hypothesis 2 was defined as 5%.

3.5. Hypothesis 3

The 3 most prominent inhibitors to entrepreneurship in South Africa were government policy (overly complex regulation and taxation), access to finance and poor primary and secondary education (Broembsen, 2005).

Van Auken (2001) argued that the entrepreneurs' ability to acquire capital was directly influenced by the entrepreneurs' knowledge of the sources of capital available to him. Muhanna (2007) further identified education as a critical success factor for South African entrepreneurs. The ability to overcome resource constraints together with social networks and education were considered critical for entrepreneurial success in South African context

This hypothesis aimed to establish if the entrepreneur's education level influenced the importance associated with the bootstrap financing techniques studied. The hypothesis was tested against two different factors, both related to education and the hypothesis was thus split into two hypotheses. The first factor considered the general education level of the entrepreneur, while the second factor considered if the entrepreneur had any prior business or commerce related tertiary education.

3.5.1. Hypothesis 3a

This hypothesis was related to the general education level of the entrepreneur and was as stated below:

Null Hypothesis (Ho): There was no significant difference between the mean or median responses relating to the perceived importance of the use of bootstrap financing techniques for entrepreneurs with different general levels of education in South Africa.

Alternative Hypothesis (Ha): There was a significant difference between the mean or median responses relating to the perceived importance of the use of bootstrap financing techniques for entrepreneurs with different general levels of education in South Africa.

The significance level for hypothesis 3 was defined as 5%.

3.5.2. Hypothesis 3b

This hypothesis was related to whether the entrepreneur had any business or commerce related tertiary education and was as stated below:

Null Hypothesis (Ho): There was no significant difference between the mean or median responses relating to the perceived importance of the use of bootstrap financing techniques for entrepreneurs with different general levels of education in South Africa.

Alternative Hypothesis (Ha): There was a significant difference between the mean or median responses relating to the perceived importance of the use of bootstrap financing techniques for entrepreneurs with different general levels of education in South Africa.

The significance level for hypothesis 3 was defined as 5%.

3.6 Hypothesis 4

Social networks and the influence of entrepreneurial friends and family had been identified as potential sources of informal finance (Berger and Udell, 1998). Muhanna (2007) further identified social networks as an individual determinant of entrepreneurial development. Muhanna (2007) identified further that exposure to other entrepreneurs through friendships and family had a positive correlation to entrepreneurial behaviour.

Hypothesis 4 was divided into two hypotheses in order to evaluate the number of family members engaged in entrepreneurial activity and the frequency level of entrepreneurial interaction separately. Both were related to networking activity but the theories suggested that they might have influenced the results in different ways.

3.6.1. Hypothesis 4a

This hypothesis related to the influence of entrepreneurial interaction and was as stated below:

Null Hypothesis (Ho): There was no significant difference between the mean or median responses relating to the perceived importance of the use of bootstrap financing techniques for entrepreneurs with different frequency levels of interaction with other entrepreneurs in South Africa.

Alternative Hypothesis (Ha): There was a significant difference between the mean or median responses relating to the perceived importance of the use of bootstrap financing techniques for entrepreneurs with different frequency levels of interaction with other entrepreneurs in South Africa.

The significance level for hypothesis 4 was defined as 5%.

3.6.2. Hypothesis 4b

This hypothesis related to the number of family members engaged in entrepreneurial activity and was as stated below:

Null Hypothesis (Ho): There was no significant difference between the mean or median responses relating to the perceived importance of the use of bootstrap

financing techniques for entrepreneurs with different numbers of family members engaged in entrepreneurial activity.

Alternative Hypothesis (H_a): There was a significant difference between the mean or median responses relating to the perceived importance of the use of bootstrap financing techniques for entrepreneurs with different numbers of family members engaged in entrepreneurial activity.

The significance level for hypothesis 4 was defined as 5%.

CHAPTER 4: RESEARCH METHODOLOGY

4.1. Introduction

This chapter introduced the methodology proposed for this research paper. The chapter elaborated on the research design, the population, the sampling methodology, the unit of analysis, the questionnaire design and lastly the analysis of the data.

4.2. Research Design

The method proposed for execution of this research proposal was based on the principals of a descriptive research study. The main purpose behind descriptive research was to describe the characteristics of a population or phenomenon (Zikmund, 2003).

The premise for conducting descriptive research was based on the previously identified characteristics of bootstrapping which would be investigated against a specific target population. The study aimed to describe the use of certain bootstrapping techniques against the characteristics of the population. The study could further be described as a quantitative study since the data gathering technique incorporated the use of a survey in the form of a structured questionnaire (Zikmund, 2003).

This research method was deemed appropriate since it aligned with the methodology used for previously conducted studies on bootstrap financing in both Massachusetts and Northern Ireland respectively (Harrison et al., 2004; Freear et al., 1995). Similar research was also conducted by Neeley (2002) in the United States of America. The previous research referred to above, facilitated the identification of the bootstrap financing techniques being investigated, enabling a significant enough understanding of the problem to proceed with descriptive rather than exploratory research.

4.3. Population of Reference

The population of reference for this study included small businesses in South Africa provided it was formed post 1994. The business had to be managed, at the time of the study, by its original founders, and those founders still had to have majority control of the company.

The population was further restricted to businesses which had operated for a minimum of 12 months. The Global Entrepreneurship Monitor defined 42 Months as the benchmark for measurement of survival of new firms (Broembsen, 2005). A period of 12 months was selected since the study required a focus on businesses which had a fair chance of survival as opposed to actually having survived.

Finally the population of reference was also limited to only include businesses where the annual sales turnover had exceeded R500 000.00 per annum. The minimum turnover was introduced in an attempt to limit the population of reference to entrepreneurial businesses where the intent of the owner was more than just subsistence.

4.4 Unit of Analysis

The unit of analysis for the purposes of the research consisted of the entrepreneur or entrepreneurs who owned the business under consideration. The individual rather than the business was considered the unit of analysis since the analysis included some characteristics of the individual which needed to be considered. It should however be noted that each business was only allocated one response even if the business had more than one founding member.

4.5. Sampling

The sampling proposed for the study included a combination of snowball and convenience sampling (Zikmund, 2003). Participants were primarily contacted by means of electronic mail. These participants were also requested to distribute the questionnaire to other qualifying entrepreneurs if possible. The Initial participants were identified through social networks. The potential initial respondents were contacted a second time by means of an electronic mail, in the event of non-

response from the initial request. This approach significantly increased the response rate.

Some participants could not access the survey and requested to complete a non-electronic version. These requests were accommodated and were by far in the minority.

The survey was distributed to known entrepreneurs, friends, colleagues, family and fellow MBA students, including instructions with regards to the restrictions of research population in question. Those individuals were requested to redistribute the survey on behalf of this study and furthermore to request that the survey be redistributed if at all possible by the candidates they had selected. The research further requested that the parties involved informed the study by means of an electronic email of all the participants the survey was distributed to.

Establishing the exact number of survey recipients were complicated by the uncertainty regarding the accuracy of the information received from participants who had resent the survey to other parties. The response rate was approximated based on the known number of recipients of the survey which equated to 183. 47 qualifying responses were received leading to a response rate of 25.7%.

4.6. Instrument Development

A self completion questionnaire was used as the tool for gathering data. The questionnaire included three sections. The first section gathered data regarding the entrepreneur and the business under their consideration. The second section gathered information regarding the degree to which the respondents interact with other entrepreneurs. The third portion consisted of different bootstrap financing techniques which were identified in previous studies (Neeley, 2002; Harrison et al., 2004). The majority of the techniques were associated with the study performed by Neeley (2002) although some techniques were omitted based on the findings from his study, while some techniques were added based on the findings from the research conducted by Harrison et al. (2004). The adjusted questionnaire, including the techniques discussed, was included in Appendix B.

The evaluation of the first section consisted of numerical categorical data which included information regarding the respondent such as race, education and gender. The second section included a 5 point categorical scale which measured the frequency with which the respondent interacted with other entrepreneurs.

The final section for the evaluation of entrepreneurial bootstrapping techniques implemented a category scale which measured the respondents' attitude with regards to the importance of the listed techniques. The questionnaire was restricted in length in order to reduce the influence of respondent fatigue as well

as to increase the response rate (Zikmund, 2003). The questionnaire is included in section 9.2 Appendix B.

4.7. Consistency Matrix

Table 1: Consistency Matrix

Research Questions	Literature Review	Data Collection Tool- Question Number	Analysis
Which bootstrap financing techniques were perceived most important by South African entrepreneurs and how did the rankings compare to the study conducted by Neeley (2002)?	Neeley, 2002 Harrison et al., 2004 Freear et al.,1995	3a to 3ag	Frequency Analysis
Hypothesis			
There was no significant difference between the mean or median responses relating to the perceived importance of the use of bootstrap financing techniques for businesses of different sizes, where the size of the business was determined by the annual sales turnover of the business	Harrison et al., 2004 Freear et al.,1995 Udell and Berger, 1998 Neeley, 2002 Gregory et al.,2005	1f and 3a to 3ag	Analysis of variance
There was no significant difference between the mean or median responses relating to the perceived importance of the use of bootstrap financing techniques for businesses of different sizes, where the size of the business was	Harrison et al., 2004 Freear et al.,1995 Udell and Berger, 1998 Neeley, 2002 Gregory et al.,2005	1f and 3a to 3ag	Analysis of variance



determined by the number of permanent employees.			
There was no significant difference between mean or median values of new and old business with regards to their perceived importance of the bootstrap financing techniques evaluated in South Africa.	Harrison et al., 2004 Freear et al.,1995 Udell and Berger, 1998 Neeley, 2002	1g and 3a to 3ag	Analysis of variance
There was no significant difference between the mean or median responses relating to the perceived importance of the use of bootstrap financing techniques for entrepreneurs with different general levels of education in South Africa.	Harrison et al., 2004 Freear et al.,1995 Udell and Berger, 1998 Neeley, 2002 Von Auken,2001 Muhanna, 2007 Broembsen, 2005	1d and 3a to 3ag	Analysis of variance
There was no significant difference between the mean or median responses relating to the perceived importance of the use of bootstrap financing techniques for entrepreneurs with different general levels of education in South Africa.	Harrison et al., 2004 Freear et al.,1995 Udell and Berger, 1998 Neeley, 2002 Von Auken,2001 Muhanna, 2007 Broembsen, 2005	1d and 3a to 3ag	Analysis of variance
There was no significant difference between the mean or median responses relating to the perceived importance of the use of bootstrap financing techniques for entrepreneurs with different frequency levels of interaction with other entrepreneurs in South Africa.	Harrison et al., 2004 Freear et al.,1995 Udell and Berger, 1998 Neeley, 2002 Von Auken,2001 Muhanna, 2007 Broembsen, 2005	2a and 2b and 3a to 3ag	Analysis of variance
There was no significant difference between the	Harrison et al., 2004 Freear et al.,1995	2a and 2b and 3a to 3ag	Analysis of variance



mean or median responses relating to the perceived importance of the use of bootstrap financing techniques for entrepreneurs with different numbers of family members engaged in entrepreneurial activity.	Udell and Berger, 1998 Neeley, 2002 Von Auken, 2001 Muhanna, 2007		
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4.8. Data Analysis

4.8.1. Data editing and coding

The data analysis commenced subsequent to the data collection, which comprised of data contained in both paper and electronic surveys. The first step towards data analysis was to ensure that the data was ready for coding and transfer to data storage. This involved the checking and adjusting of the received responses for omission, legibility and consistency. This process is called editing (Zikmund, 2003). The majority of the responses qualified immediately for further analysis. In the cases where data was omitted a follow up email was sent to the respondent requesting the data, in all cases a response was received and the omission was corrected.

After the data editing was completed, all the responses were consolidated in to a single database. The database chosen for the purposes of the analysis was Microsoft Excel. Subsequent to the data being consolidated the data had to be classified for the purposes of further analysis. Zikmund (2003) defines the

identification and classification by means of the assignment of either numerical or character symbols of all data answers received as coding. Coding the data enabled further analysis through computer tools, more specifically Microsoft Excel and NCSS. That process also involved the identification of fields required for the data analysis, which in specific circumstances required additional computing based on existing fields in order to generate data in a coded format. An example of such an incident was for the classification for the number of permanent employees of the business. The ranges for the categories had to be defined in such a manner that the categories all contributed more or less equally to the sample.

4.8.2. Descriptive Analysis

The editing and coding phase prepared the data for an analysis but not yet for interpretation. The next step was to complete descriptive analysis on the data. Descriptive analysis is the transformation of data into a form which is easily interpretable (Zikmund, 2003).

The data was analysed in terms of the averages, and medians, frequency distributions as well as the standard deviation per response received. The above mentioned measures were only applied where logically applicable. The categorised data was also used to describe the sample population in terms of graphs, for example the percentage males and females of the sample. The

results from the descriptive analysis were documented in chapter 5.1 and 5.2. Microsoft Excel was used to conduct the descriptive analysis.

4.8.2. Univariate Analysis

In order to complete hypothesis testing, based on the hypotheses defined in chapter three, univariate tests of significance was required on each of the defined bootstrap financing techniques, based on various categories. The NCSS toolset was used to complete the hypothesis tests.

In order to conduct the hypothesis tests, appropriate tests first needed to be selected. The results for the hypothesis tests conducted throughout chapter 5 displays the results probability values recorded for each individual test based on the appropriate test conducted which was also listed in the corresponding row. In the cases where the probability listed was less than the alpha level established for the listed hypothesis, the hypothesis was rejected. The appropriate tests for each hypothesis test conducted was chosen based on 4 different criteria, the number responses per factor (classification e.g. male or female), the number of factors, the appropriateness of normality assumptions and the appropriateness of equal variance assumptions.

Finally box plots were generated for all the hypothesis tests where the hypothesis was rejected. The box plots assisted with describing the differences between the

categories for the corresponding hypothesis test. The box plots are attached in section 9.5. Appendix E

4.9. Research Limitations

The research was limited respondents that were willing to participate. That could have imposed some level of self selection bias on the results (Zikmund, 2003). The sample was secondly limited by the network employed in order to get access to the entrepreneurs. This network was limited to personal colleagues, friends, family, known entrepreneurs and fellow MBA students. This factor was evident in the demographics of the sample discussed given in chapter 5.2. The majorities of the respondents were based in the Gauteng region, were contained in the age category 25 to 50 and were of white ethnicity. Those factors could limit the degree to which the findings could be generalised for the population defined because of the influence of the sample bias (Zikmund, 2003).

Secondly the research ignored the potential influences of differences in industries since certain bootstrap financing techniques might be more applicable to some industries than others.

Finally the research was limited due to the nature of the distribution channel utilised in the form of electronic mail or printed questionnaire. Businesses which were not reachable through direct delivery or electronic mail were thus excluded from the sample population.

Lastly the research was influenced by survivorship bias, since only businesses that were operating at the time and businesses that had survived for more than 12 months were considered for the sample population.

CHAPTER 5: QUANTITATIVE RESULTS

5.1. Introduction

This chapter presented the results obtained from the quantitative study. The first section from this chapter considered the sample demographics and reliability. Subsequent sections evaluated the sample against the research question and hypotheses as per their definitions in chapter 3. The interpretation of these results was discussed in chapter 6.

5.2. Sample Demographics and Reliability

The survey was sent to 183 small business owners with an additional request for the survey to be passed on to any other known entrepreneurs matching the criteria as defined in chapter 2. Due to a lack of information regarding the quantity of surveys being resent by the initial 183 recipients, the true response rate is impossible to determine. Assuming that the contribution resulting from the passing on of questionnaires by the initial recipients was relatively small, an approximation of the response rate was determined using the initial 183 recipients, ultimately yielding 25.7%. A total of 47 qualifying responses were received.

The reliability of the survey responses was evaluated by means of determining the Cronbach's Alpha of the qualifying responses. A Cronbach's Alpha of 0.88 was achieved which is greater than 0.8 indicating adequate internal reliability.

The demographics of the participating entrepreneurs and other general sample characteristics were presented in table 2 and table 3 respectively.

Table 2: Gender, Age and Race of Respondents

Demographics					
Gender	%	Age	%	Race	%
Male	68	>25	2	African	0
Female	32	25 -50	87	Indian	4
		51 -75	11	Coloured	2
		75+	0	White	94
				Other	0

Table 3: Small Business Characteristics

Small Business Characteristics			
Legal Entity	%	Years in operation	%
Other (Sole Trader)	4	Less than 4 years	36
Partnership	0	More than 4 years	64
Closed Corporation	55		
Private Company	36		
Public Company	4		
Annual Turnover	%	Number of Employees	%
0 to 1m	19	0 to 3	15
1m to 5m	36	3 to 5	21
5m to 10m	19	5 to 10	17
More than 10m	26	10 to 30	21
		More than 30	26

5.3. Descriptive Statistics and Percentage Responses

The mean, median and standard deviation for each of the 31 evaluated bootstrapping techniques as well as the percentage responses for each of the 5 categories of the Likert scale were determined. The values were sorted in a declining order starting with the highest mean values down to the lowest. The percentage responses in bold represented the category with the highest number of responses associated with the corresponding technique in question. Table 4 below displayed the above mentioned results.

Table 4: Descriptive statistics and percentage responses

Technique	Average	Median	Standard Deviation	Very Important	Fairly Important	Neutral	Not so Important	Not at all important
Invoice clients promptly	3.72	4	0.77	83%	13%	0%	2%	2%
Stop services to late payers	2.87	3	0.88	28%	36%	32%	4%	0%
Give up personal salary	2.52	3	1.41	30%	36%	9%	11%	15%
Pay early to get discounts	2.50	3	1.28	26%	32%	17%	17%	9%
Minimize inventory	2.39	3	1.53	34%	19%	21%	4%	21%
Require down payments from customers or clients	2.22	2	1.51	30%	17%	13%	23%	17%
Have temporary employees	2.17	2	1.53	26%	21%	17%	13%	23%
Offer discounts for cash	2.11	2	1.29	17%	21%	26%	23%	13%
Be included in clients promotional materials	2.07	2	1.49	21%	26%	11%	21%	21%
Receive free consulting	1.93	2	1.49	19%	21%	23%	9%	28%
Buy used equipment	1.78	2	1.40	11%	28%	19%	15%	28%
Change interest on overdue accounts	1.70	2	1.25	6%	23%	28%	19%	23%

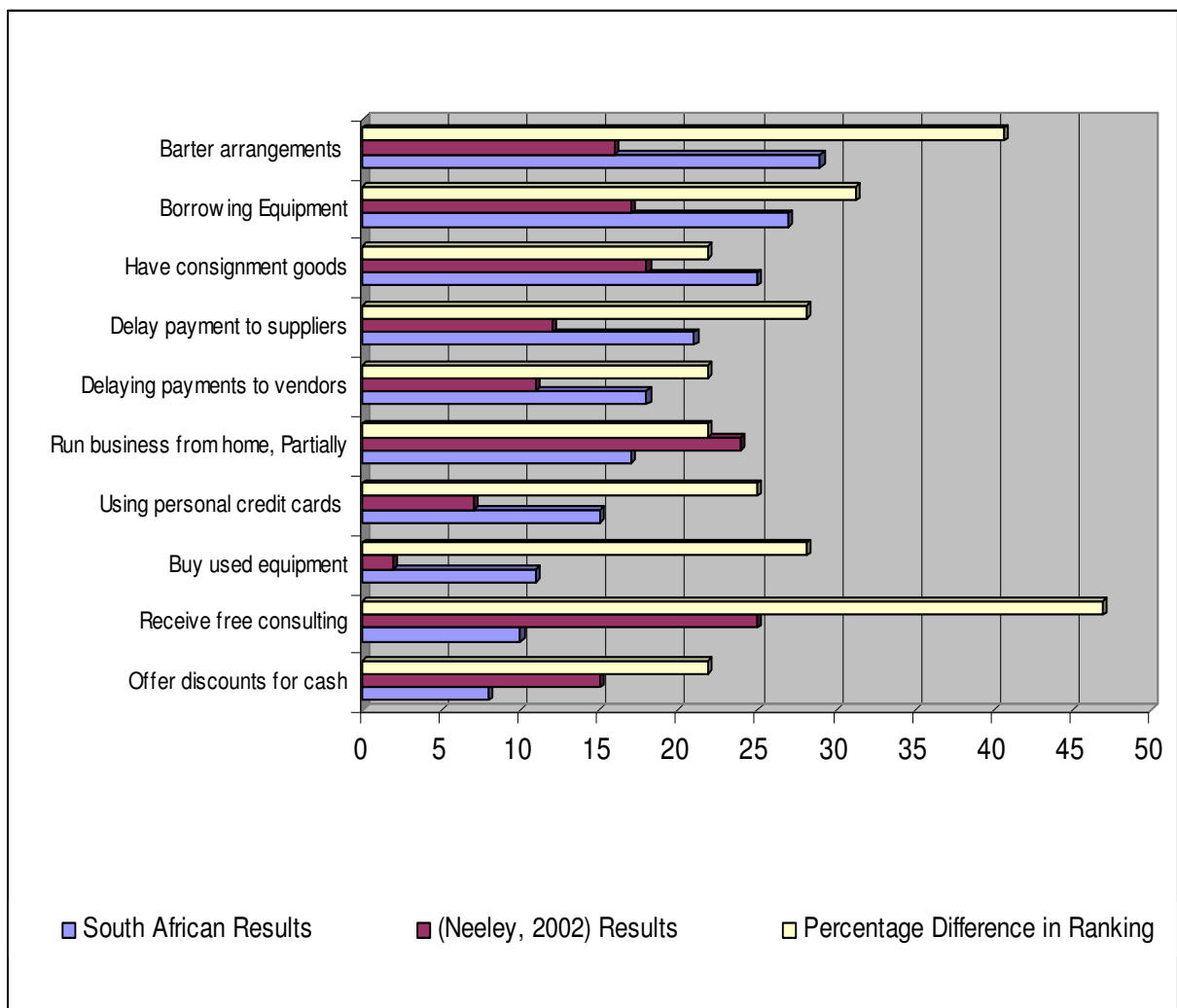


Using personal home loan	1.65	1	1.58		17%	19%	13%	11%	40%
Lease equipment	1.63	2	1.41		9%	23%	23%	9%	36%
Using personal credit cards	1.59	2	1.51		13%	23%	15%	11%	38%
Loans from relatives or friends	1.59	1	1.56		13%	26%	9%	11%	43%
Run business from home, Partially	1.57	2	1.57		15%	17%	21%	0%	47%
Delaying payments to vendors	1.54	2	1.21		4%	21%	28%	21%	26%
Share space with other companies	1.48	1	1.46		9%	23%	15%	11%	43%
Run Business from home, Completely	1.46	1	1.61		19%	11%	19%	4%	47%
Delay payment to suppliers	1.43	1	1.21		4%	17%	28%	21%	30%
Clients pay for product development costs	1.39	1	1.41		6%	23%	17%	11%	43%
Share equipment with other companies	1.28	1	1.46		9%	19%	15%	9%	49%
Share Employees with other companies	1.24	1	1.21		0%	19%	28%	9%	45%
Have consignment goods	1.24	1	1.35		4%	19%	19%	9%	49%
Use a salary from another (second) job	1.13	1	1.22		6%	4%	30%	17%	43%
Borrowing Equipment	1.04	1	1.16		0%	17%	17%	19%	47%
Hire relations at low or no wages	0.98	0	1.20		2%	13%	17%	15%	53%
Barter arrangements (service or goods exchanges instead of using cash)	0.93	0	1.26		6%	6%	19%	15%	53%
Acquire government grants	0.93	0	1.10		0%	11%	23%	13%	53%
Delay pay day to Employees	0.89	0	1.23		6%	4%	17%	15%	57%
Arrange corporate grants	0.89	0	1.03		0%	6%	28%	13%	53%

The rankings assigned to the different techniques displayed in Table 4, were compared against the results from the study conducted by Neeley (2002) in Illinois. This comparison could be found in Appendix C, and the techniques with

differences greater than 20% were graphically displayed in figure 4. It should be noted here that techniques of higher importance should have smaller graphical representations within this chart, since the techniques were ranked from 1 to 32 in order of their perceived importance.

Figure 4: Differences in ranking of bootstrap financing technique importance between this South African study and the study of Neeley (2002)



Neeley (2002) grouped the techniques of his study into logical groups. A second comparison was conducted grouping the findings from this study into similar logical groups. The results from these groupings together with the resulting rankings from both studies could be found in Appendix D. These rankings were then used to rank the logical groups in terms of importance. The average ranking (contains the average ranking of the techniques included in each logical group) ranging from 1, being the most important, to 32, being the least important, in terms of these logical groups were displayed in table 5.

Table 5: Ranking comparison of logical Bootstrap financing logical groups

Ranking	Bootstrapping Group	South African Study Average Ranking	Neeley (2002) Average Ranking
1	Outsourcing	8.5	15.5
2	Cash Or Asset Management	11.3	10.1
3	Customer or Client Financing	12.3	12.3
4	Leases	14	8
5	Owner's Resources or Borrowing	16.2	17.8
6	Relationship Resources	22	20.5
7	Cooperation Resources	23.6	22.4
8	Barter	29	16
9	Subsidies and Incentives	31	30.5

5.4. Hypothesis 1: The size of the business

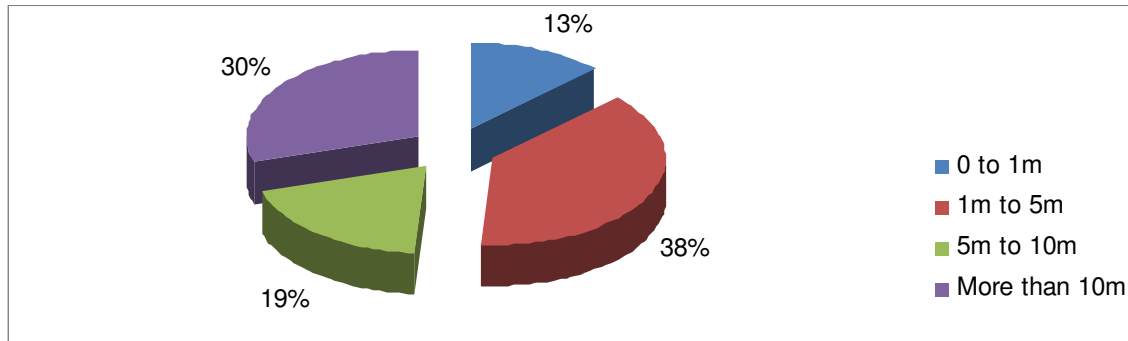
Hypothesis testing related to the size of the business and the utilisation of bootstrap financing techniques was divided into two sections as per the hypotheses defined in Chapter 3.3. The first considered the annual turnover of the organisation as indicator of size, while the second section used the number of

permanent employees employed. The significance level or alpha for the tests was set to 5% for both sections.

5.4.1. Hypothesis 1a: Size of organisation as per annual turnover

Analysis of variance was conducted on the sample with the annual turnover being categorized in 4 groups as indicated in the figure 5.

Figure 5: Annual turnover category statistics



The results achieved from the conducted hypothesis tests are listed in Table 6.

The techniques where the hypothesis was rejected are highlighted in yellow.

Table 6: Hypothesis Results based on size of the business as per their annual turnover

Technique	F Ratio	Prob	Decision	Test Applied	Mean/median
Delaying payments to vendors	2.57	0.066	Fail to Reject Ho	ANOVA	Mean
Barter arrangements (service or goods exchanges instead of using cash)	2.53	0.1	Fail to Reject Ho	Kruskal-Wallis	Median
Using personal credit cards	2.15	0.15	Fail to Reject Ho	Kruskal-Wallis	Median
Using personal home loan	0.12	0.94	Fail to Reject Ho	Kruskal-Wallis	Median
Give up personal salary	1.29	0.29	Fail to Reject Ho	ANOVA	Mean
Use a salary from another	1.01	0.4	Fail to Reject Ho	ANOVA	Mean

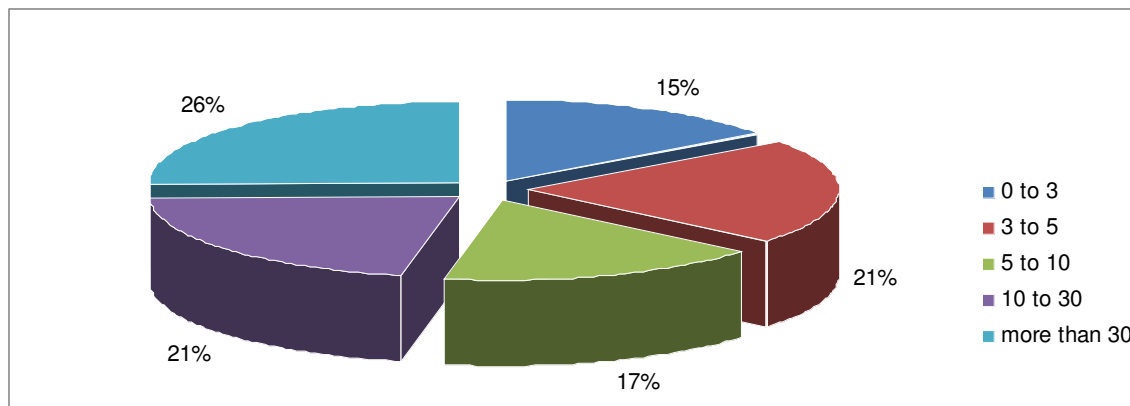


(second) job					
Run business from home, Partially	0.22	0.9	Fail to Reject Ho	Kruskal-Wallis	Median
Run Business from home, Completely	2.38	0.08	Fail to Reject Ho	ANOVA	Mean
Loans from relatives or friends	0.56	0.71	Fail to Reject Ho	Kruskal-Wallis	Median
Hire relations at low or no wages	0.48	0.76	Fail to Reject Ho	Kruskal-Wallis	Median
Borrowing Equipment	0.23	0.87	Fail to Reject Ho	Kruskal-Wallis	Median
Have consignment goods	0.51	0.75	Fail to Reject Ho	Kruskal-Wallis	Median
Share space with other companies	0.22	0.88	Fail to Reject Ho	Kruskal-Wallis	Median
Share equipment with other companies	0.43	0.82	Fail to Reject Ho	Kruskal-Wallis	Median
Share Employees with other companies	1.18	0.38	Fail to Reject Ho	Kruskal-Wallis	Median
Require down payments from customers or clients	2.83	0.047	Reject Ho	Kruskal-Wallis	Median
Be included in clients promotional materials	2.08	0.12	Fail to Reject Ho	Kruskal-Wallis	Median
Clients pay for product development costs	2.18	0.09	Fail to Reject Ho	Kruskal-Wallis	Median
Invoice clients promptly	0.77	0.46	Fail to Reject Ho	Kruskal-Wallis	Median
Buy used equipment	2.09	0.12	Fail to Reject Ho	Kruskal-Wallis	Median
Minimize inventory	1.78	0.26	Fail to Reject Ho	Kruskal-Wallis	Median
Stop services to late payers	5.95	0.002	Reject Ho	ANOVA	Mean
Delay payment to suppliers	1.26	0.32	Fail to Reject Ho	Kruskal-Wallis	Median
Pay early to get discounts	2.45	0.076	Fail to Reject Ho	ANOVA	Mean
Change interest on overdue accounts	4.31	0.022	Reject Ho	Kruskal-Wallis	Median
Offer discounts for cash	2.39	0.08	Fail to Reject Ho	ANOVA	Mean
Delay pay day to Employees	1.49	0.29	Fail to Reject Ho	Kruskal-Wallis	Median
Lease equipment	0.67	0.51	Fail to Reject Ho	Kruskal-Wallis	Median
Have temporary employees	1.81	0.17	Fail to Reject Ho	Kruskal-Wallis	Median
Receive free consulting	0.16	0.94	Fail to Reject Ho	Kruskal-Wallis	Median
Acquire government grants	1.27	0.23	Fail to Reject Ho	Kruskal-Wallis	Median
Arrange corporate grants	0.96	0.38	Fail to Reject Ho	Kruskal-Wallis	Median

5.4.2. Hypothesis 1b: Size of organisation as per number of employees

Analysis of variance was conducted on the sample with the number of permanent employees being categorized in 5 groups as indicated in the figure 6.

Figure 6: Number of permanent employees category statistics



The results achieved from the conducted hypothesis tests are listed in Table 7.

The techniques where the hypothesis was rejected are highlighted in yellow.

Table 7: Hypothesis results based on size of the business as per their number of employees

Technique	F Ratio	Prob	Decision	Test Applied	Mean/median
Delaying payments to vendors	0.97	0.43	Fail to Reject Ho	ANOVA	Mean
Barter arrangements (service or goods exchanges instead of using cash)	3.02	0.036	Reject Ho	Kruskal-Wallis	Median
Using personal credit cards	3.02	0.028	Reject Ho	ANOVA	Mean
Using personal home loan	0.64	0.71	Fail to Reject Ho	Kruskal-Wallis	Median
Give up personal salary	1.67	0.17	Fail to Reject Ho	ANOVA	Mean
Use a salary from another (second) job	2.69	0.032	Reject Ho	Kruskal-Wallis	Median
Run business from home, Partially	0.52	0.72	Fail to Reject Ho	Kruskal-Wallis	Median
Run Business from home, Completely	4.45	0.004	Reject Ho	ANOVA	Mean
Loans from relatives or friends	1.5	0.36	Fail to Reject Ho	Kruskal-Wallis	Median
Hire relations at low or no wages	0.65	0.76	Fail to Reject Ho	Kruskal-Wallis	Median
Borrowing Equipment	0.47	0.78	Fail to Reject Ho	Kruskal-Wallis	Median
Have consignment goods	0.26	0.9	Fail to Reject Ho	Kruskal-Wallis	Median



Share space with other companies	1.15	0.4	Fail to Reject Ho	Kruskal-Wallis	Median
Share equipment with other companies	2.73	0.042	Reject Ho	ANOVA	Mean
Share Employees with other companies	2.67	0.045	Reject Ho	ANOVA	Mean
Require down payments from customers or clients	0.39	0.82	Fail to Reject Ho	Kruskal-Wallis	Median
Be included in clients promotional materials	0.83	0.49	Fail to Reject Ho	Kruskal-Wallis	Median
Clients pay for product development costs	0.51	0.78	Fail to Reject Ho	Kruskal-Wallis	Median
Invoice clients promptly	0.23	0.95	Fail to Reject Ho	Kruskal-Wallis	Median
Buy used equipment	1.55	0.23	Fail to Reject Ho	Kruskal-Wallis	Median
Minimize inventory	1.41	0.29	Fail to Reject Ho	Kruskal-Wallis	Median
Stop services to late payers	2.21	0.13	Fail to Reject Ho	Kruskal-Wallis	Median
Delay payment to suppliers	1.31	0.28	Fail to Reject Ho	ANOVA	Mean
Pay early to get discounts	2.53	0.05	Reject Ho	ANOVA	Mean
Change interest on overdue accounts	1.46	0.23	Fail to Reject Ho	ANOVA	Mean
Offer discounts for cash	2.03	0.11	Fail to Reject Ho	ANOVA	Mean
Delay pay day to Employees	0.17	0.93	Fail to Reject Ho	Kruskal-Wallis	Median
Lease equipment	2.15	0.09	Fail to Reject Ho	ANOVA	Mean
Have temporary employees	0.91	0.48	Fail to Reject Ho	Kruskal-Wallis	Median
Receive free consulting	2.16	0.12	Fail to Reject Ho	Kruskal-Wallis	Median
Acquire government grants	0.97	0.46	Fail to Reject Ho	Kruskal-Wallis	Median
Arrange corporate grants	2.62	0.049	Reject Ho	ANOVA	Mean

5.5. Hypothesis 2: The age of the business

Hypothesis testing related to the age of the business and the utilisation of bootstrap financing techniques was conducted. The significance level or alpha applied was set to 5%. The relative age of the business was divided into two categories, the first relating to business younger than four years and then for businesses older than four years. The distribution of the sample relating to these

categories was displayed in figure 7. Table 8 represented the results from the hypothesis testing conducted.

Figure 7: Sample distribution of the business age categories

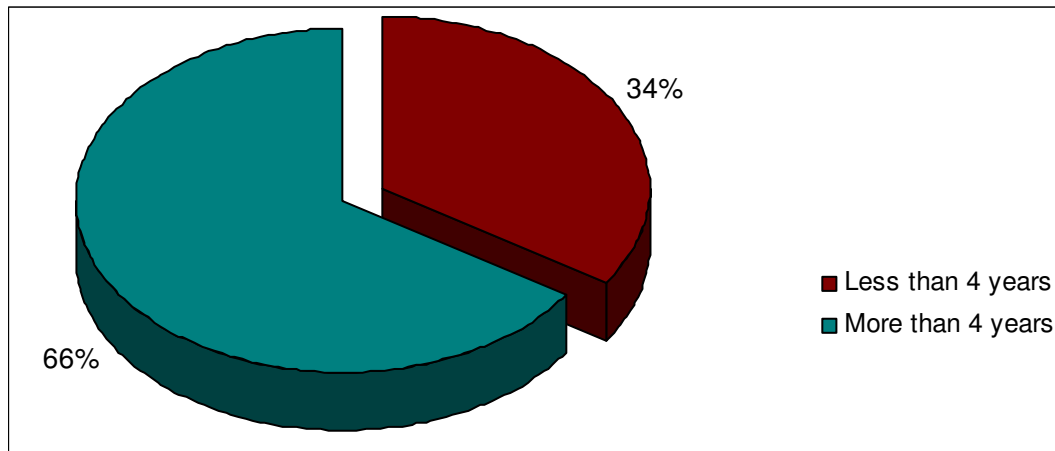


Table 8: Hypothesis test results based on the age of the business

Technique	St. Dev	Prob	Decision	Test Applied	Mean/median
Delaying payments to vendors	1.22	0.58	Fail to Reject Ho	Kolmogorov-Smirnov	Median
Barter arrangements (service or goods exchanges instead of using cash)	1.79	0.57	Fail to Reject Ho	Mann-Whitney U	Median
Using personal credit cards	1.47	0.03	Reject Ho	T-Test	Mean
Using personal home loan	0.69	0.84	Fail to Reject Ho	Mann-Whitney U	Median
Give up personal salary	1.44	0.58	Fail to Reject Ho	T-Test	Mean
Use a salary from another (second) job	1.11	0.002	Reject Ho	Mann-Whitney U	Median
Run business from home, Partially	1.58	0.85	Fail to Reject Ho	Mann-Whitney U	Median
Run Business from home, Completely	1.58	0.07	Fail to Reject Ho	Mann-Whitney U	Median
Loans from relatives or friends	1.53	0.15	Fail to Reject Ho	Kolmogorov-Smirnov	Median
Hire relations at low or no wages	1.21	0.85	Fail to Reject Ho	Mann-Whitney U	Median
Borrowing Equipment	1.16	0.39	Fail to Reject	T-Test	Mean



			Ho		
Have consignment goods	1.35	0.3	Fail to Reject Ho	Mann-Whitney U	Median
Share space with other companies	1.47	0.93	Fail to Reject Ho	Mann-Whitney U	Median
Share equipment with other companies	1.45	0.22	Fail to Reject Ho	Mann-Whitney U	Median
Share Employees with other companies	1.2	0.18	Fail to Reject Ho	Mann-Whitney U	Median
Require down payments from customers or clients	1.52	0.53	Fail to Reject Ho	Mann-Whitney U	Median
Be included in clients promotional materials	1.49	0.61	Fail to Reject Ho	Mann-Whitney U	Median
Clients pay for product development costs	1.38	0.1	Fail to Reject Ho	Mann-Whitney U	Median
Invoice clients promptly	0.77 9	0.99	Fail to Reject Ho	Kolmogorov-Smirnov	Median
Buy used equipment	1.41	0.75	Fail to Reject Ho	Mann-Whitney U	Median
Minimize inventory	1.54	0.85	Fail to Reject Ho	Mann-Whitney U	Median
Stop services to late payers	0.88	0.79	Fail to Reject Ho	Mann-Whitney U	Median
Delay payment to suppliers	1.22	0.99	Fail to Reject Ho	Mann-Whitney U	Median
Pay early to get discounts	1.29	0.74	Fail to Reject Ho	T-Test	Mean
Change interest on overdue accounts	1.25	0.46	Fail to Reject Ho	Mann-Whitney U	Median
Offer discounts for cash	1.24	0.031	Reject Ho	T-Test	Mean
Delay pay day to Employees	1.24	0.57	Fail to Reject Ho	Mann-Whitney U	Median
Lease equipment	1.42	0.85	Fail to Reject Ho	Mann-Whitney U	Median
Have temporary employees	1.49	0.071	Fail to Reject Ho	Mann-Whitney U	Median
Receive free consulting	1.42	0.034	Reject Ho	Mann-Whitney U	Median
Acquire government grants	1.09	0.15	Fail to Reject Ho	Mann-Whitney U	Median
Arrange corporate grants	0.97	0.021	Reject Ho	Mann-Whitney U	Median

5.6. Hypothesis 3: The influence of education

Hypothesis testing related to the education associated with the entrepreneurs and their utilisation of bootstrap financing techniques was divided into two sections as per the hypothesis defined in Chapter 3.5. The first section considered education at a general level (figure 8 supplies the categories used), while the second simply distinguished between entrepreneurs with business or commerce related tertiary education and those without. The significance level or alpha for both sections was set at 5%.

5.6.1. Hypothesis 3a: General education level of entrepreneurs

One way analysis of variance was conducted on the sample with the general education level of the entrepreneur being categorised in 4 groups as illustrated in figure 8. Table 9 showed the results achieved from the hypothesis testing.

Figure 8: Distribution of the general education level categories of the entrepreneurs

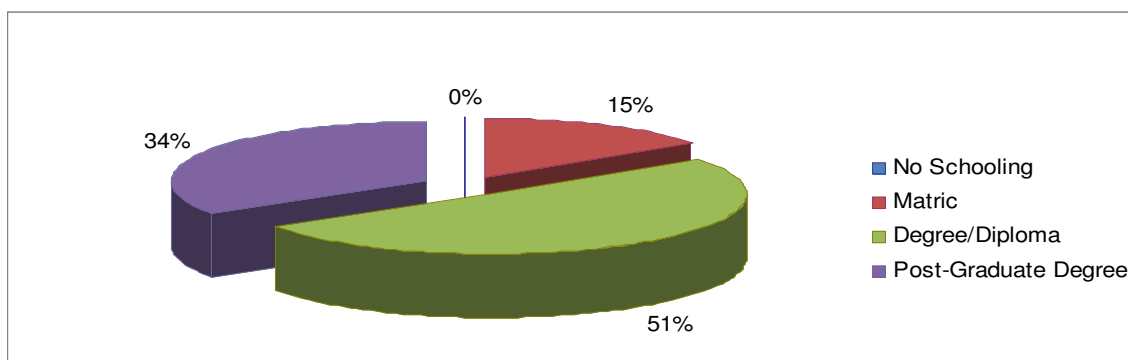




Table 9: Hypothesis testing based on the general education level of the entrepreneurs

Technique	F Ratio	Prob	Decision	Test Applied	Mean/median
Delaying payments to vendors	0.69	0.51	Fail to Reject Ho	Kruskal-Wallis	Median
Barter arrangements (service or goods exchanges instead of using cash)	0.09	0.917	Fail to Reject Ho	Kruskal-Wallis	Median
Using personal credit cards	0.1	0.908	Fail to Reject Ho	Kruskal-Wallis	Median
Using personal home loan	0.71	0.5	Fail to Reject Ho	Kruskal-Wallis	Median
Give up personal salary	1.01	0.35	Fail to Reject Ho	Kruskal-Wallis	Median
Use a salary from another (second) job	0.15	0.89	Fail to Reject Ho	Kruskal-Wallis	Median
Run business from home, Partially	0.05	0.95	Fail to Reject Ho	Kruskal-Wallis	Median
Run Business from home, Completely	0.81	0.45	Fail to Reject Ho	Kruskal-Wallis	Median
Loans from relatives or friends	0.22	0.8	Fail to Reject Ho	Kruskal-Wallis	Median
Hire relations at low or no wages	1.11	0.34	Fail to Reject Ho	Kruskal-Wallis	Median
Borrowing Equipment	1.16	0.322	Fail to Reject Ho	Kruskal-Wallis	Median
Have consignment goods	1.74	0.18	Fail to Reject Ho	Kruskal-Wallis	Median
Share space with other companies	0.4	0.68	Fail to Reject Ho	Kruskal-Wallis	Median
Share equipment with other companies	0.15	0.86	Fail to Reject Ho	Kruskal-Wallis	Median
Share Employees with other companies	1.82	0.17	Fail to Reject Ho	Kruskal-Wallis	Median
Require down payments from customers or clients	0.6	0.55	Fail to Reject Ho	Kruskal-Wallis	Median
Be included in clients promotional materials	2.02	0.14	Fail to Reject Ho	Kruskal-Wallis	Median
Clients pay for product development costs	0.23	0.79	Fail to Reject Ho	Kruskal-Wallis	Median
Invoice clients promptly	0.63	0.54	Fail to Reject Ho	Kruskal-Wallis	Median
Buy used equipment	0.28	0.75	Fail to Reject Ho	Kruskal-Wallis	Median
Minimize inventory	0.33	0.72	Fail to Reject Ho	Kruskal-Wallis	Median
Stop services to late payers	3.63	0.034	Reject Ho	ANOVA	Mean
Delay payment to suppliers	0.18	0.84	Fail to Reject Ho	ANOVA	Mean
Pay early to get discounts	0.41	0.66	Fail to Reject Ho	ANOVA	Mean
Change interest on overdue accounts	0.25	0.09	Fail to Reject Ho	Kruskal-Wallis	Median
Offer discounts for cash	0.35	0.76	Fail to Reject Ho	Kruskal-Wallis	Median
Delay pay day to Employees	0.04	0.87	Fail to Reject Ho	Kruskal-Wallis	Median
Lease equipment	0.22	0.77	Fail to Reject Ho	Kruskal-Wallis	Median
Have temporary employees	1.03	0.39	Fail to Reject Ho	Kruskal-Wallis	Median
Receive free consulting	0.51	0.6	Fail to Reject Ho	Kruskal-Wallis	Median
Acquire government grants	2.39	0.19	Fail to Reject Ho	Kruskal-Wallis	Median
Arrange corporate grants	0.7	0.52	Fail to Reject Ho	Kruskal-Wallis	Median

5.6.2. Hypothesis 3b: Business or Commerce related tertiary qualification

Hypothesis testing was conducted on the sample with the factor variable being whether the entrepreneur had any business or commerce related tertiary education. The distribution of entrepreneurs with and without a business or commerce related tertiary education was illustrated in figure 9. Table 10 represented the results achieved from the hypothesis tests conducted.

Figure 9: Distribution of entrepreneurs with and without business on commerce tertiary education

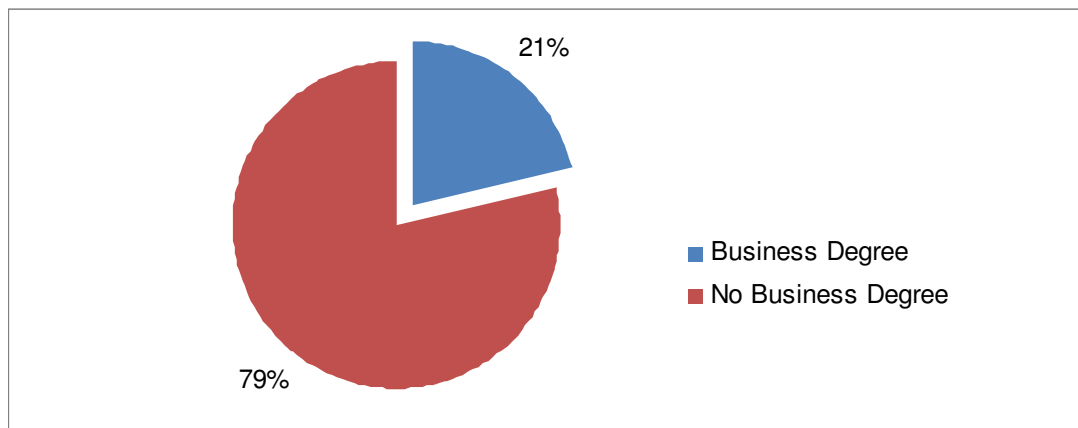


Table 10: Hypothesis tests based on entrepreneurs with and without a business related tertiary qualification

Technique	St. Dev	Prob	Decision	Test Applied	Mean/median
Delaying payments to vendors	1.54	0.72	Fail to Reject Ho	T-Test	Mean
Barter arrangements (service or goods exchanges instead of using cash)	1.08	0.13	Fail to Reject Ho	Mann-Whitney U	Median
Using personal credit cards	1.49	0.21	Fail to Reject Ho	Mann-Whitney U	Median
Using personal home loan	1.49	0.24	Fail to Reject Ho	Mann-Whitney U	Median
Give up personal salary	1.42	0.7	Fail to Reject Ho	T-Test	Mean



Use a salary from another (second) job	1.19	0.1	Fail to Reject Ho	Mann-Whitney U	Median
Run business from home, Partially	1.78	0.35	Fail to Reject Ho	Mann-Whitney U	Median
Run Business from home, Completely	1.54	0.023	Reject Ho	Kolmogorov-Smirnov	Median
Loans from relatives or friends	1.55	0.37	Fail to Reject Ho	Mann-Whitney U	Median
Hire relations at low or no wages	9	0.27	Fail to Reject Ho	Mann-Whitney U	Median
Borrowing Equipment	1.14	0.09	Fail to Reject Ho	Mann-Whitney U	Median
Have consignment goods	0.13	0.45	Fail to Reject Ho	Kolmogorov-Smirnov	Median
Share space with other companies	1.44	0.18	Fail to Reject Ho	Mann-Whitney U	Median
Share equipment with other companies	1.43	0.15	Fail to Reject Ho	Mann-Whitney U	Median
Share Employees with other companies	1.16	0.037	Reject Ho	Mann-Whitney U	Median
Require down payments from customers or clients	1.513	0.004	Reject Ho	Mann-Whitney U	Median
Be included in clients promotional materials	1.47	0.14	Fail to Reject Ho	Mann-Whitney U	Median
Clients pay for product development costs	1.399	0.2	Fail to Reject Ho	Mann-Whitney U	Median
Invoice clients promptly	0.77	0.99	Fail to Reject Ho	Kolmogorov-Smirnov	Median
Buy used equipment	1.41	0.67	Fail to Reject Ho	Mann-Whitney U	Median
Minimize inventory	1.54	0.6	Fail to Reject Ho	Mann-Whitney U	Median
Stop services to late payers	0.88	0.91	Fail to Reject Ho	T-Test	Mean
Delay payment to suppliers	1.22	0.67	Fail to Reject Ho	T-Test	Mean
Pay early to get discounts	1.3	0.76	Fail to Reject Ho	T-Test	Mean
Change interest on overdue accounts	1.23	0.15	Fail to Reject Ho	T-Test	Mean
Offer discounts for cash	1.3	0.71	Fail to Reject Ho	Mann-Whitney U	Median
Delay pay day to Employees	1.118	0.22	Fail to Reject Ho	Kolmogorov-Smirnov	Median
Lease equipment	1.42	0.51	Fail to Reject Ho	Mann-Whitney U	Median
Have temporary employees	1.51	0.16	Fail to Reject Ho	Mann-Whitney U	Median
Receive free consulting	1.43	0.05	Reject Ho	Mann-Whitney U	Median
Acquire government grants	1.101	0.27	Fail to Reject Ho	Mann-Whitney U	Median
Arrange corporate grants	1	0.046	Reject Ho	Mann-Whitney U	Median

5.7 Hypothesis 4: The influence of relationships and networking

Hypothesis testing related to interaction between entrepreneurs, considering both friends and family, and the utilisation of bootstrap financing techniques was divided into two sections as per the hypothesis defined in Chapter 3.6. The first section evaluated the utilisation of bootstrap financing techniques against the entrepreneurs' opinions with regards to their frequency of interaction with other entrepreneurs. The second section evaluated the use of bootstrap financing techniques against the number of family members the entrepreneurs had, who was also engaged in entrepreneurial activity. The significance level or alpha for both sections was set at 5%.

5.7.1. Hypothesis 4a: Frequency of interaction with other entrepreneurs

Hypothesis testing was conducted on the sample with the level of networking being identified through a 5 point Likert scale ranging from never to very often. The distribution of the various levels of networking for the participants was graphically displayed in figure 10 below. Table 11 illustrated the results achieved from the hypothesis testing.

Figure 10: Distribution of the levels of networking the entrepreneurs engaged in with other entrepreneurs

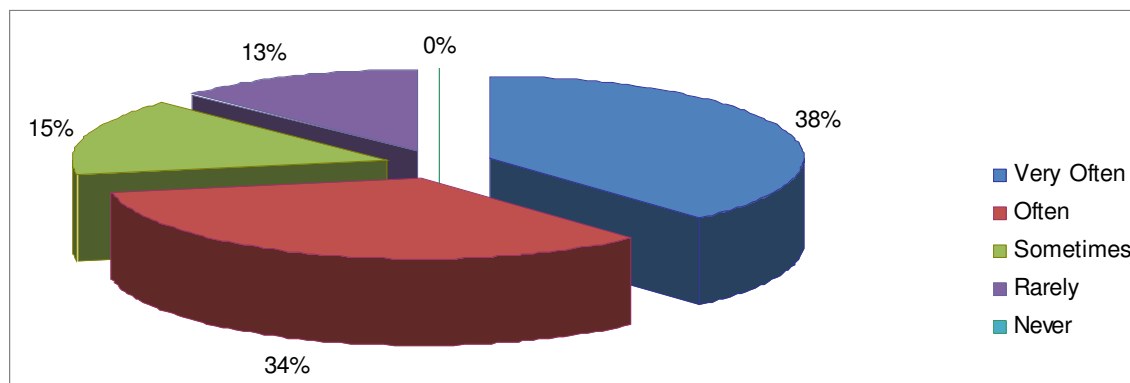


Table 11: Hypothesis tests based the level of interaction with other entrepreneurs

Technique	F Ratio	Prob	Decision	Test Applied	Mean/median
Delaying payments to vendors	1.41	0.25	Fail to Reject Ho	ANOVA	Mean
Barter arrangements (service or goods exchanges instead of using cash)	1	0.45	Fail to Reject Ho	Kruskal-Wallis	Median
Using personal credit cards	1.62	0.22	Fail to Reject Ho	Kruskal-Wallis	Median
Using personal home loan	0.91	0.48	Fail to Reject Ho	Kruskal-Wallis	Median
Give up personal salary	0.2	0.8	Fail to Reject Ho	Kruskal-Wallis	Median
Use a salary from another (second) job	0.35	0.78	Fail to Reject Ho	Kruskal-Wallis	Median
Run business from home, Partially	1.57	0.21	Fail to Reject Ho	ANOVA	Mean
Run Business from home, Completely	0.03	0.99	Fail to Reject Ho	Kruskal-Wallis	Median
Loans from relatives or friends	1.21	0.31	Fail to Reject Ho	Kruskal-Wallis	Median
Hire relations at low or no wages	0.46	0.7	Fail to Reject Ho	Kruskal-Wallis	Median
Borrowing Equipment	1.3	0.29	Fail to Reject Ho	Kruskal-Wallis	Median
Have consignment goods	0.23	0.91	Fail to Reject Ho	Kruskal-Wallis	Median
Share space with other companies	1.52	0.21	Fail to Reject Ho	Kruskal-Wallis	Median
Share equipment with other companies	0.39	0.8	Fail to Reject Ho	Kruskal-Wallis	Median
Share Employees with other companies	0.39	0.74	Fail to Reject Ho	Kruskal-Wallis	Median
Require down payments from customers or clients	0.5	0.7	Fail to Reject Ho	Kruskal-Wallis	Median



Be included in clients promotional materials	1.44	0.22	Fail to Reject Ho	Kruskal-Wallis	Median
Clients pay for product development costs	2.28	0.13	Fail to Reject Ho	Kruskal-Wallis	Median
Invoice clients promptly	0.9	0.91	Fail to Reject Ho	Kruskal-Wallis	Median
Buy used equipment	0.95	0.42	Fail to Reject Ho	Kruskal-Wallis	Median
Minimize inventory	0.43	0.79	Fail to Reject Ho	Kruskal-Wallis	Median
Stop services to late payers	0.31	0.82	Fail to Reject Ho	ANOVA	Mean
Delay payment to suppliers	0.96	0.42	Fail to Reject Ho	ANOVA	Mean
Pay early to get discounts	0.18	0.91	Fail to Reject Ho	ANOVA	Mean
Change interest on overdue accounts	0.22	0.9	Fail to Reject Ho	Kruskal-Wallis	Median
Offer discounts for cash	0.52	0.68	Fail to Reject Ho	Kruskal-Wallis	Median
Delay pay day to Employees	0.21	0.8	Fail to Reject Ho	Kruskal-Wallis	Median
Lease equipment	1.8	0.18	Fail to Reject Ho	Kruskal-Wallis	Median
Have temporary employees	0.69	0.47	Fail to Reject Ho	Kruskal-Wallis	Median
Receive free consulting	0.12	0.95	Fail to Reject Ho	Kruskal-Wallis	Median
Acquire government grants	0.53	0.73	Fail to Reject Ho	Kruskal-Wallis	Median
Arrange corporate grants	1.7	0.18	Fail to Reject Ho	ANOVA	Mean

5.7.2. Hypothesis 4b: Family members engaged in entrepreneurial activity

Hypothesis testing was conducted on the sample, using the number of family members engaged in entrepreneurial activity as the factor variable. Figure 11 illustrates the distribution of the number of family members engaged in entrepreneurial activity, based on the categories defined for the purposes of this analysis. Table 11 illustrated the results achieved from the hypothesis testing.

Figure 11: Distribution of family members engaged in entrepreneurial activity

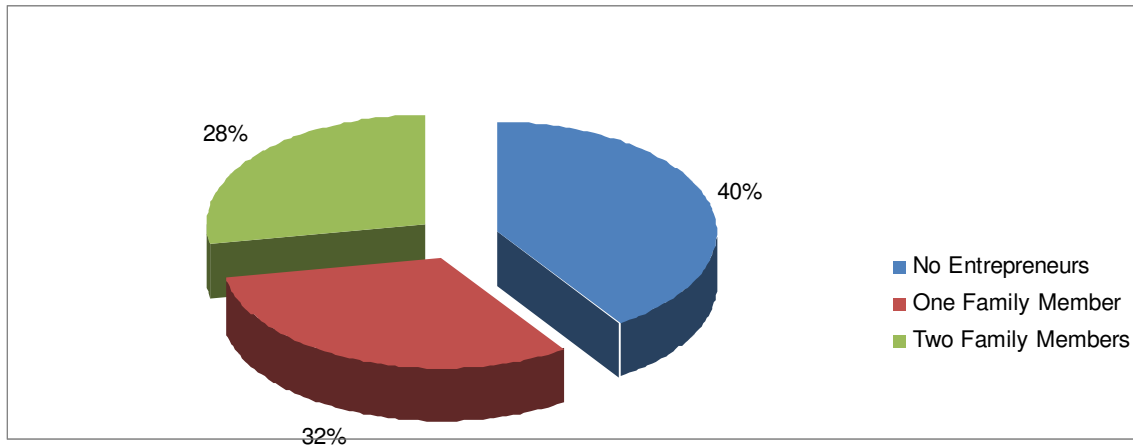


Table 12: One- way analysis of variance hypothesis tests performed on bootstrapping techniques and the level of networking with other entrepreneurs

Technique	F Ratio	Prob	Decision	Test Applied	Mean/ median
Delaying payments to vendors	1.31	0.29	Fail to Reject Ho	Kruskal-Wallis	Median
Barter arrangements (service or goods exchanges instead of using cash)	0.02	0.98	Fail to Reject Ho	Kruskal-Wallis	Median
Using personal credit cards	2.2	0.13	Fail to Reject Ho	Kruskal-Wallis	Median
Using personal home loan	2.67	0.08	Fail to Reject Ho	Kruskal-Wallis	Median
Give up personal salary	0.62	0.54	Fail to Reject Ho	Kruskal-Wallis	Median
Use a salary from another (second) job	2.47	0.08	Fail to Reject Ho	Kruskal-Wallis	Median
Run business from home, Partially	1.19	0.31	Fail to Reject Ho	Kruskal-Wallis	Median
Run Business from home, Completely	2.84	0.07	Fail to Reject Ho	ANOVA	Mean
Loans from relatives or friends	6.68	0.006	Reject Ho	Kruskal-Wallis	Median
Hire relations at low or no wages	0.74	0.78	Fail to Reject Ho	Kruskal-Wallis	Median
Borrowing Equipment	0.5	0.59	Fail to Reject Ho	Kruskal-Wallis	Median
Have consignment goods	1.02	0.47	Fail to Reject Ho	Kruskal-Wallis	Median
Share space with other companies	0	0.99	Fail to Reject Ho	Kruskal-Wallis	Median
Share equipment with other companies	0.28	0.85	Fail to Reject Ho	Kruskal-Wallis	Median



Share Employees with other companies	0.92	0.41	Fail to Reject Ho	Kruskal-Wallis	Median
Require down payments from customers or clients	0	0.56	Fail to Reject Ho	Kruskal-Wallis	Median
Be included in clients promotional materials	0.42	0.38	Fail to Reject Ho	Kruskal-Wallis	Median
Clients pay for product development costs	1.04	0.92	Fail to Reject Ho	Kruskal-Wallis	Median
Invoice clients promptly	0.67	0.52	Fail to Reject Ho	Kruskal-Wallis	Median
Buy used equipment	1.04	0.39	Fail to Reject Ho	Kruskal-Wallis	Median
Minimize inventory	1.23	0.33	Fail to Reject Ho	Kruskal-Wallis	Median
Stop services to late payers	0.26	0.77	Fail to Reject Ho	ANOVA	Mean
Delay payment to suppliers	2.57	0.09	Fail to Reject Ho	ANOVA	Mean
Pay early to get discounts	1.46	0.24	Fail to Reject Ho	ANOVA	Mean
Change interest on overdue accounts	0.38	0.8	Fail to Reject Ho	Kruskal-Wallis	Median
Offer discounts for cash	0.34	0.63	Fail to Reject Ho	Kruskal-Wallis	Median
Delay pay day to Employees	1.02	0.46	Fail to Reject Ho	Kruskal-Wallis	Median
Lease equipment	1.87	0.19	Fail to Reject Ho	Kruskal-Wallis	Median
Have temporary employees	0.48	0.69	Fail to Reject Ho	Kruskal-Wallis	Median
Receive free consulting	1.3	0.27	Fail to Reject Ho	Kruskal-Wallis	Median
Acquire government grants	1.44	0.22	Fail to Reject Ho	Kruskal-Wallis	Median
Arrange corporate grants	0.82	0.22	Fail to Reject Ho	Kruskal-Wallis	Median

CHAPTER 6: QUANTITATIVE ANALYSIS

6.1 Introduction

This chapter consists of the interpretation of the results in Chapter 5. The interpretation is the result of reviewing the results achieved through this study against the theoretical overview obtained from Chapter 2. The Chapter discusses the results in order of the research question and hypotheses presented in Chapter 3.

6.2 Research Question 1: Which bootstrap financing techniques are perceived most important and how does the results compare with the study conducted by Neeley (2002)?

The research question sought to rank the studied techniques in order of perceived importance. These results aims to identify the techniques which South African entrepreneurs need to employ in order to survive with limited access to resources especially finances.

The second portion of this analysis aims to compare these results against those achieved in previous research conducted by Neeley (2002) in the United States of America. Any significant differences indicate either differences emanating from the cultures of the countries, the business environments of the countries or inconsistencies between the two studies.

The bootstrap financing techniques displayed in table 4 of chapter 5.3 indicate the techniques in order of perceived importance. The table secondly indicates descriptive statistics regarding these techniques as well as the percentage responses within each category of the likert scale. The standard deviations indicate the level of consistency between the responses of the various participants. Section 9.3 Appendix C illustrates how these results compare against the findings of Neeley (2002).

Figure 4 in chapter 5.3 illustrates the most significant differences between the findings of Neeley (2002) and this study. Understanding these differences could form the basis for future research, alternatively the areas of major difference indicate areas where South African entrepreneurs either over or under emphasise certain bootstrap financing techniques. The techniques of major difference may also be indicative of environmental or cultural differences between the South African context and that of the United States of America.

The results further indicate that none of the techniques identified were deemed unimportant by all of the respondents, and that some level of implementation of all of the techniques identified are taking place in South Africa. 9 Techniques were identified for which the average score was higher than a 2 indicating that the majority of the respondents deemed these techniques to be important in growing and establishing their businesses. Most interestingly 7 of these 9 techniques also formed part of the 9 most popular techniques identified by

Neeley (2002), illustrating some consistency between the findings. This comparison is given in section 9.3 Appendix C.

Appendix D as discussed in chapter 5.3 displays the results as per the logical groupings proposed by Neeley (2002). The comparison reveals that there are some differences between the two studies worth noting. The first difference resides in the perceived importance of techniques residing in the outsourcing group. The results from this study indicate that this is perceived as the most important of the groups whilst outsourcing ranked 4th in the results from Neeley (2002).

Another interesting finding relates to the importance associated with barter arrangements. South Africans deemed bartering as far less important with a ranking of 29th whilst Neeley (2002) found this group to be ranked at 16th. South African entrepreneurs also seemed far less willing to lease equipment than the participants from the United States.

The other 7 groups aligned well with the findings from the research conducted by Neeley (2002). The results prove useful in that they reveal the bootstrapping techniques used by relatively successful South African entrepreneurs, while also illustrating the techniques which are less favored. Finally the differences in behaviour between the two study groups further legitimise Mason and Harrison (1999) requests for additional research in different countries.

6.2. Research Hypothesis 1: The size of the business

Chapter 2 revealed that the size of the business has a significant role in determining the degree to which a business is able to gain access to capital (Berger and Udell, 1998).

The purpose of this hypothesis is to establish which bootstrap financing techniques are favored by smaller businesses compared to larger more established businesses. The implication of the results resides in the identification of the most relevant techniques with regards to the size of the business.

Chapter 5.4 divided this hypothesis into two hypotheses according to the definition used to quantify the size of the business. Gregory et al. (2005) defined the size of the business based on either the number of permanent employees or the value of the sales realised.

6.2.1. Hypothesis 1a: Size based on the annual sales

The responses yielded 4 categories for the size of the business based on the annual sales of the business. The responses over the four categories were distributed relatively equally with contributions of 13%, 38%, 19% and 30% as per the illustration in figure 5 of chapter 5.4.1. Most of the respondents recorded sales between R1m and R5m.

The results from the hypothesis testing conducted is summarised in Chapter 5.4.1 table 6. Most of the techniques did not indicate any significant differences associated with the size of the business. There was however some exceptions where the hypothesis testing indicated a significant difference between the importance's associated with particular bootstrap financing techniques with regards to the relative size of the business as defined by the annual sales generated by the business. These exceptions are listed in table 13, while their corresponding box plots are given in Appendix E section 9.5.1.

Table 13: Techniques for which there is a significant difference between the mean or median of importance for businesses with different magnitudes in sales turnover

Bootstrapping Technique	F Ratio	Prob	Result	Test Applied	Mean/ Median
Require down payments from customers or clients	2.83	0.047	Reject Ho	Kruskal-Wallis	Median
Stop services to late payers	5.95	0.002	Reject Ho	ANOVA	Mean
Change interest on overdue accounts	4.31	0.022	Reject Ho	Kruskal-Wallis	Median

Gregory et al. (2005) concluded that the size of a business, measured by the volume of annual sales generated, did not explain the small businesses financial growth cycle model proposed by Berger and Udell (1998). The primary focus of their study was however related to the access of finance, while this study included other bootstrapping techniques related to the optimisation of resources. The authors suggested that sales could not explain the small business growth cycle model proposed by Berger and Udell (1998) since both small and large

businesses have different growth intentions, and thus different capital requirements.

The findings from this research support the findings from Gregory et al. (2005) with regards to gaining access to capital, but suggest that annual turnover is a factor with regards to the perceived importance of some other specific bootstrap financing techniques.

Neeley (2002) classified all three of the rejected techniques as forming part of the broader group of cash or asset management, as illustrated in section 9.1 Appendix A. The box plots for the three techniques listed in table 13 are displayed in Appendix E section 9.5.1 and suggests that firms with smaller turnovers are more likely to find these techniques (listed in table 13) important than firms with bigger sales turnover.

The results indicate that businesses with smaller annual turnovers focus on techniques which facilitate the optimisation of cash or asset management, although the results are not conclusive with regards to all cash or asset management techniques.

6.2.2. Hypothesis 2b: Size based on the number of permanent employees

Chapter 5.4.2 supplies the results to this section. The distribution of the responses for the different categories identified is shown in figure 6. The different categories have relatively equal contributions of 15%, 21%, 17%, 21% and 26%. The analysis was based on the categories, less than 3, between 3 and 5, between 5 and 10, between 10 and 30 and more than 30 employees. The study performed by Harrison et al. (2004) used only two categories, less than 10 and more than 10, whilst Gregory et al. (2005) defined smaller firms as having less than 500 employees. The comparison of the results is thus cumbersome.

The results from the hypothesis testing conducted are summarised in chapter 5.4.2 table 7. As in the case for the annual turnover, most of the techniques failed to reject the hypothesis that the size of the organisation defined by the number of permanent employees makes no significant difference in the mean or median value of the perceived importance for the different bootstrap financing techniques defined. The exceptions where the null hypothesis was rejected are listed in table 14. These specific techniques indicate that firms of different sizes, perceived these techniques at different levels of importance. The corresponding box plots for the techniques in table 14 are listed in Appendix E section 9.5.2.

Table 14: Techniques for which there is a significant difference between the mean or median of importance for businesses with different magnitudes of permanent employees

Bootstrapping Technique	F Ratio	Prob	Result	Test Applied	Mean/ Median
Barter arrangements (service or goods exchanges instead of using cash)	3.02	0.036	Reject Ho	Kruskal-Wallis	Median
Using personal credit cards	3.02	0.028	Reject Ho	ANOVA	Mean
Use a salary from another (second) job	2.69	0.032	Reject Ho	Kruskal-Wallis	Median
Run Business from home, Completely	4.45	0.004	Reject Ho	ANOVA	Mean
Share equipment with other companies	2.73	0.042	Reject Ho	ANOVA	Mean
Share Employees with other companies	2.67	0.045	Reject Ho	ANOVA	Mean
Pay early to get discounts	2.53	0.05	Reject Ho	ANOVA	Mean
Arrange corporate grants	2.62	0.049	Reject Ho	ANOVA	Mean

Gregory et al. (2005) concluded that the size of a business measured by the number of employees, supported the small business financial growth cycle model proposed by Berger and Udell (1998). The evidence from this study partially supports these findings since not all of the techniques related to the owners' resources or borrowings were rejected. There is however support in that the techniques, of using your own credit card, having a second job and running the business from home all relate to internally sourced capital. The difference in findings may be explained in the definition used for small and large firms. Gregory et al. (2005) defined large as 500 employees or more, while this study investigated much smaller businesses.

Harrison et al. (2004) similarly concluded that the size of the business defined by the number of permanent employees, made a significant difference in the how

the business perceived the importance of the bootstrap financing techniques applied. They suggested that smaller businesses place a greater importance on the application of bootstrapping techniques than larger businesses. Their research found this to be true for almost all the techniques identified for their study.

The results from this study partially supports these findings since all of the 8 techniques in table 14 suggest that smaller business (in terms of the number of employees) scored these techniques higher in terms of importance than larger businesses did. This conclusion is established through the evaluation of the box plots from Appendix E 9.5.2 which shows higher mean or median values associated with the smaller business categories. Drawing a direct comparison however is difficult since the focus for the study conducted by Harrison et al. (2004) was on the software industry in Northern Ireland, and included several techniques specific to the software industry, whilst excluding some of the techniques included in this study. They're definition of a small and large business also differed from the definition used in this study.

The findings suggest that the size of the organisation in terms of the number of permanent employees makes a significant difference with regards to the importance of the bootstrap financing techniques listed in table 14. Furthermore the results indicate that at these techniques were perceived to be more important for the smaller businesses than for the larger businesses. The results with

regards to the other techniques excluded from table 14 proved inconclusive and failed to reject the null hypothesis.

6.3. Research Hypothesis 2: The age of the business

The literature from chapter 2.3 suggests that the relative age of the business determines the ease with which the business can access capital. This theory base leads to the second hypothesis defined in chapter 4.4. The hypothesis suggests that smaller firms should regard bootstrap financing techniques to be more important than larger firms.

The sample was compares two categories, businesses younger than 4 years, and businesses older than 4 years, which contributes 34% and 66% of the sample respectively. This definition for young and old firms is based on the definition used in the study conducted by Harrison et al. (2004), but it excludes the category for businesses older than 10 years. This definition secondly almost aligns with the definition of the global entrepreneurship monitor for new firm survival, which is 42 months (Broembsen, 2005).

Chapter 5.5 table 8 displays the results from the hypothesis tests conducted. The null hypothesis is accepted for the majority of the techniques under investigation. There are however some techniques for which the null hypothesis are rejected.

These exceptions are listed in table 15, while the box plots for these rejected techniques are supplied in Appendix E section 9.5.3.

Table 15: Techniques for which there is a significant difference between the mean or median of importance, for old and new businesses

Technique	St. Dev	Prob	Decision	Test Applied	Mean/ median
Using personal credit cards	1.47	0.03	Reject Ho	T-Test	Mean
Use a salary from another (second) job	1.11	0.002	Reject Ho	Mann-Whitney U	Median
Offer discounts for cash	1.24	0.031	Reject Ho	T-Test	Mean
Receive free consulting	1.42	0.034	Reject Ho	Mann-Whitney U	Median
Arrange corporate grants	0.97	0.021	Reject Ho	Mann-Whitney U	Median

The box plots in Appendix E section 9.5.3 indicate that younger firms perceive the techniques to be more important than older firms. The only exception is associated with the case of offering discounts for cash, which contradict the expectation that younger firms should offer more discounts for cash than older firms.

The hypothesis investigates the small firm growth cycle model, which suggests that older better known firms are more likely to use formal sources of capital such as long term debt and funding from the sale of equity (Berger and Udell, 1998). This model suggests that most new firms have restricted access to resources especially financial capital, and thus need to rely on internal sources of finance to support their business needs (Berger and Udell, 1998).

The theory suggest that the lack of access to resources due to the newness of the firm, necessitate the application of bootstrap financing techniques in order to overcome resource constraints and to survive (Berger and Udell, 1998; Bhide 2000, Orford et al.,2003, Freear et al.,2002).

Harrison et.al (2004) concluded that newer firms in the software industry in Northern Ireland perceived the importance of bootstrap financing techniques to be more important than older more established firms did.

The results relating to the techniques where the hypothesis are rejected (listed in table 15, box plots in Appendix E section 9.5.3) with the exception of the technique of offering discounts for cash which contradicts the theory, supports the theory that newer firms perceive the bootstrap financing techniques to be more important than older firms. The majority of the techniques however failed to reject the null hypothesis and thus also fails to support the theory.

The research conducted by Harrison et al. (2004) suggests much stronger support for the underlying theory, that newer firms must perceive bootstrap financing techniques to be more important than older more established firms. This fundamental difference between the two studies may be associated with the fact that the study conducted by Harrison et al. (2004) was constrained to the software industry, or may suggest a difference between the entrepreneurs in Northern Ireland and South Africa.

6.4. Research Hypothesis 3: The Education of the Entrepreneur

The global entrepreneurship monitor identified that the 3 most prominent inhibitors to entrepreneurship in South Africa were, government policy (overly complex regulation and taxation), access to finance and poor primary and secondary education (Broembsen, 2005).

Van Auken (2001) argues that the entrepreneurs' ability to acquire capital is directly influenced by the entrepreneurs' knowledge of the sources of capital available to him. Muhanna (2007) further identifies education as a critical success factor for South African entrepreneurs. The ability to overcome resource constraints together with social networks and education are considered common to entrepreneurs who are successful within the South African context

The purpose of this hypothesis is to establish if there is a significant difference between the importances associated with the bootstrapping techniques studied, when considering the education associated with the entrepreneur. The hypothesis is tested against two different factors as per the discussion in chapter 5.6. The first factor consider the general education level of the entrepreneur, while the second factor considers if the entrepreneur has, or does not have a tertiary education related to business or commerce.

The implication of the results resides in defining the influence of education on the application of the identified bootstrap financing techniques.

6.4.1. Hypothesis 3a: General Education level

Chapter 5.6.1 figure 8 illustrates the contributions within the various categories of general education level investigated. The chart shows that none of the entrepreneurs investigated had any prior education, while 15% achieved matric, 51% had achieved a degree or diploma and 34% of the entrepreneurs had a post-graduate education. The bias towards higher levels of education may be explained due to the use of convenience sampling through networks. Muhanna (2007) however suggests that entrepreneurs are generally better educated than non-entrepreneurs which may also explain the properties of the sample.

The hypothesis is defined in chapter 3.5.1 and aims to establish if there is any significant difference between the mean or medians of entrepreneurs of different general levels of education and their use of bootstrap financing techniques in South Africa.

The results achieved from these hypothesis tested against a significance level of 5% are listed in Chapter 5.6.1 table 9. The technique for which the hypothesis is rejected is listed in table 16. The box plot associated with this technique is given in Appendix E section 9.5.4.

Table 16: Technique for which there is a significant difference between the mean or median value of importance for entrepreneurs with different general levels of education

Technique	F Ratio	Prob	Decision	Test Applied	Mean/median
Stop services to late payers	3.63	0.034	Reject Ho	ANOVA	Mean

The results indicate that there is little evidence to support the theory that entrepreneurs with higher levels of education perceive the identified techniques as more important than the lesser educated entrepreneurs. The only technique suggesting a difference between the perceptions relating to the importance of the techniques is the stoppage of services to late payers. In the case of this specific technique the box plot indicate that entrepreneurs with higher levels of education regarded this technique as less important than the lesser educated entrepreneurs, contradicting expectations even further.

The literature from chapter 2.6 relating to South African entrepreneurs, suggests that education is one of the primary reasons for small business failure (Broemsen,2005; Muhanna,2007). The results do not support the theory that lower general levels of education reduce the entrepreneurs' perceptions of importance of bootstrapping techniques.

Van Auken (2001) suggests that the entrepreneurs' ability to acquire capital is directly influenced by the entrepreneurs' knowledge of the sources of capital available to him. The research do not consider potential entrepreneurs who did not pursue opportunities because of lack of access to capital, and hence does

not fully evaluate if education levels makes any difference with regards to identification and acquiring of capital.

6.4.2. Hypothesis 3b: Business or Commerce related tertiary qualification

Chapter 5.6.2 figure 9 illustrates the contributions for entrepreneurs with and without a business or commerce related tertiary education. The chart shows that only 21% of the entrepreneurs investigated had a business or commerce related tertiary education while 79% did not. The sample thus contains a strong bias towards entrepreneurs who did not have any prior business or commerce related tertiary education.

The hypothesis is defined in chapter 3.5.2 and investigates if a business or commerce related education makes a difference in the way entrepreneurs perceived the importance of the identified bootstrap financing techniques.

The results achieved from the hypothesis tests are listed in chapter 5.6.2 table 10. The techniques for which the hypothesis is rejected are listed in table 17. The box plots associated with these techniques are given in Appendix E section 9.5.5.

Table 17: Techniques for which there is a significant difference between the mean or median value of importance, for entrepreneurs with and without a business or commerce related tertiary education

Technique	St. Dev	Prob	Decision	Test Applied	Mean/median
Run Business from home, Completely	1.54	0.023	Reject Ho	Kolmogorov-Smirnov	Median
Share Employees with other companies	1.16	0.037	Reject Ho	Mann-Whitney U	Median
Require down payments from customers or clients	1.51 3	0.004	Reject Ho	Mann-Whitney U	Median
Receive free consulting	1.43	0.05	Reject Ho	Mann-Whitney U	Median
Arrange corporate grants	1	0.046	Reject Ho	Mann-Whitney U	Median

The techniques for which the hypothesis are rejected all indicate that entrepreneurs without any business or commerce related tertiary education perceived these techniques to be more important than entrepreneurs with a business or commerce related tertiary education. This contradicts the expected result, which suggests that entrepreneurs with more business related formal education should be more familiar with the techniques, which could assist with getting the most out of their resources.

The majority of the techniques tested failed to reject the null hypothesis, while the rejected hypothesis contradicts expectations. The results with regards to education and the application of bootstrap financing techniques are inconclusive and contradict rather than support the theoretical expectations.

6.5. Research Hypothesis 4: Social Networking between entrepreneurs and the influence of Family Entrepreneurs

Berger and Udell (1998) identified the influence of social networks and the influence of entrepreneurial friends and family as potential sources of informal finance. Muhanna (2007) supported these findings and expanded on it by suggesting that social networks are a major individual determinant of entrepreneurial development. He further suggested that there are a positive correlation between entrepreneurial activity and the exposure to entrepreneurship through family and friendship.

This section evaluates the results from chapter 5.8. The results are discussed in two sections, the first being the related to the degree to which entrepreneurs interact with other entrepreneurs and the second being related to the having family members who are also engage in entrepreneurial activity. These two factors are evaluated against the use of bootstrap financing techniques, proposing that a higher degree of entrepreneurial interaction, or having more members of family who are entrepreneurs, should lead to greater knowledge of entrepreneurial activity and thus greater knowledge of bootstrap financing techniques.

6.5.1. Hypothesis 4a: The Level of Entrepreneurial Interaction

Chapter 5.7.1 figure 10 illustrates the contributions for entrepreneurs with regards to their levels of interaction with other entrepreneurs. The chart shows that none

of the entrepreneurs never interact with other entrepreneurs, while 13% interact rarely, 15% sometimes, 34% interact often and 38% claim to interact very often with other entrepreneurs. The results indicate that over 72% of the entrepreneurs have frequent interaction, supporting the findings that interaction between entrepreneurs is important in entrepreneurial activity.

The hypothesis is defined in chapter 3.6.1 and investigates if there is a significant difference in the perceived importance of bootstrap financing techniques between entrepreneurs with different levels of interaction with other entrepreneurs. The theory suggests that interaction between entrepreneurs is important in entrepreneurial activity.

Chapter 5.7.1 table 11 contains the results from the hypothesis testing conducted. The results indicate that all of the tests failed to reject the null hypothesis. This suggests that there is no evidence to suggest that the level of interaction between the entrepreneurs has any influence on the perceived importance of the bootstrap financing techniques evaluated.

Although the high levels of interaction between entrepreneurs supports the findings Muhanna (2007), there is little indication that higher levels of entrepreneurial interaction is related to higher levels of implementation of bootstrap financing techniques. The results indicate that the high levels of entrepreneurial activity must lead to other benefits not considered in this study.

6.5.2. Hypothesis 4b: The number Family members engaged in Entrepreneurial activity

Chapter 5.7.2 figure 11 illustrates the contributions for entrepreneurs with different amounts of family members engaged in entrepreneurial activity. The chart shows that only 40% of the entrepreneurs have no family members who are entrepreneurs while 32% have one family member and 28% of the entrepreneurs have two or more family members who were entrepreneurs. The results show that at least 60% of the entrepreneurs have at least one family member who is an entrepreneur.

The hypothesis is defined in chapter 3.6.2 while the chapter 5.7.2 table 12 lists the results from the hypothesis test conducted. Table 18 displays the techniques for which the hypothesis test is rejected, and for which the alternative hypothesis thus holds true.

Table 18: Techniques for which there is a significant difference between the mean or median value of importance, for entrepreneurs with different amounts of family members engaged in entrepreneurial activity

Technique	F Ratio	Prob	Decision	Test Applied	Mean/ median
Loans from relatives or friends	6.68	0.006	Reject Ho	Kruskal-Wallis	Median

The results show that for all but one of the techniques the null hypothesis is not rejected. The box plot for the technique which rejected the null hypothesis is given in Appendix E section 9.5.6.

The results show that entrepreneurs with more family members, who are engaged in entrepreneurial activity, perceive loans from friends and family to be more important than entrepreneurs with fewer family members who are engaged in entrepreneurial activity.

As stated earlier, Berger and Udell (1998) found that entrepreneurs with more family or friends that are engaged in entrepreneurial activity are more likely to gain access to informal sources of finance. The results from this study support these findings since this seems to be true with regards to the technique associated with loans from friends and family.

The other techniques however failed to reject the null hypothesis indicating that there is no evidence to support the theory that having family members who are entrepreneurs would influence entrepreneurs to better perceive bootstrap financing techniques to be more important.

CHAPTER 7: CONCLUSION

7.1. Introduction

In this chapter the main findings from the study are pulled together. The chapter discusses how the major findings combine in order to create a model for new businesses development based on the most appropriate use of bootstrap financing techniques at different stages of their growth cycle. The chapter then concludes with recommendations for key stakeholders as well as some recommendations for future research.

7.2. Framework for small business development

The preceding chapter clearly indicates how some bootstrap financing techniques are perceived to be more important than others based on specifically defined attributes of either the entrepreneur or the business under consideration.

The model proposed is primarily based on 2 pillars. The first pillar is based primarily on the characteristics associated with the business. The evaluation of the bootstrap financing techniques against the small business growth cycle model of Berger and Udell (1998) is thus the foundation for this pillar. The small business growth cycle model is illustrated in chapter 2.3 figure 2.

The second pillar relates to the characteristics or perceptions of the entrepreneurs evaluated. The pillar introduces the overall importance of the bootstrap financing techniques and takes into account the overall ranking of the techniques identified.

7.2.1. Pillar 1: The small business growth cycle model and the use of bootstrap financing techniques

The importance of specific bootstrap financing techniques to some degree varies depending on the businesses age and size. The dimension of information asymmetry proposed by Berger and Udell (1998) was not evaluated since it to a large degree depends on the track record of the business. The track record of the business is defined by the businesses age as well as the size and growth of the business, hence only the dimensions of size and age were chosen for evaluation. Finally the dimensions of both size and age are easier to quantify and thus easier to present in terms of a practical model for future implementation.

The findings suggests that business size can be divided into either the number of permanent employees or the annual sales turnover of the business, and that there is a difference in terms of the most important bootstrapping techniques based on the definition used for business size. The model takes into consideration both dimensions for size, proposing focal techniques for businesses as they grow in terms of both size dimensions.

The findings related to the age of the business identifies that the age of the business is also important in determining the most important bootstrap financing techniques for application. The age of the business thus becomes another dimension in the model proposed.

The findings thus suggest that both size and age to varying degrees can assist small businesses in identifying the most relevant bootstrap financing techniques.

7.2.3. Pillar 2: Entrepreneur characteristics and general importance of the bootstrap financing techniques

The findings represented in chapter six also identified the rankings associated with the techniques in general. Some of the techniques are important irrespective of the business age or size and thus should be represented in the model.

The results further indicate that some general characteristics of the entrepreneur influence the importance of the identified techniques. The findings with regards to education, as well as the findings with regards interaction between entrepreneurs are contained within this pillar.

Results indicate that the degree or frequency of interaction between entrepreneurs have no influence with regards to the importance associated with the different bootstrapping techniques. The findings however also show that the more family members an entrepreneur has who are also engaged in

entrepreneurship, the higher the importance of making use of loans from friends and family. This finding, although not contained in the final model is critical in understanding the dynamics behind gaining access to informal financing sources. This finding also gives some insight into the finding from Muhanna (2007), that a family background of entrepreneurship plays a significant role in entrepreneurs becoming entrepreneurial. Furthermore he found in his study that only 5% of entrepreneurs in South Africa had inherited their businesses from their family, while the far greater majority started their own businesses.

7.2.3. The Bootstrap financing small business development model

The findings from chapter 6 identify the rankings associated with the techniques in general. Apart from the model presented in figure 12 and figure 13 the users of this model needs to take the bootstrap financing techniques not listed in the model into consideration. The model illustrates the techniques in order of importance, but only if the techniques' importance is dependent on the size or age of the business or the education of the entrepreneur. Some of the techniques are important irrespective of the characteristics of the business or entrepreneur, and thus this model needs to be used together with table 4 in chapter 5.3 where the techniques are ranked in order of general importance.

The first part of the model is represented in figure 12 and relates to the importance of bootstrap financing techniques and the size or age of the business. The second part of the model is represented in figure 13 and considers the general attributes of the entrepreneur evaluated, but since networking and family

relations had no distinguishable features, figure 13 is restricted to the findings related to the education of the entrepreneurs. Figure 13 thus represents a model for the influence of education on the perceived importance of bootstrap financing techniques.

Contrary to expectation higher levels of education resulted in a lower perceived importance of some of the specific bootstrap financing techniques. This model may thus be indicative of specific bootstrap financing techniques in use by lesser educated entrepreneurs in order to overcome educational constraints, or may indicate techniques in use by lesser educated entrepreneurs because they don't fully appreciate other consequences resulting from these techniques. The premise for this study however is that these entrepreneurs have survived and that they have been relatively successful, and thus the model should apply depending on the entrepreneurs' level of education.

Figure 12: Small Business development model based on the age and size of the business

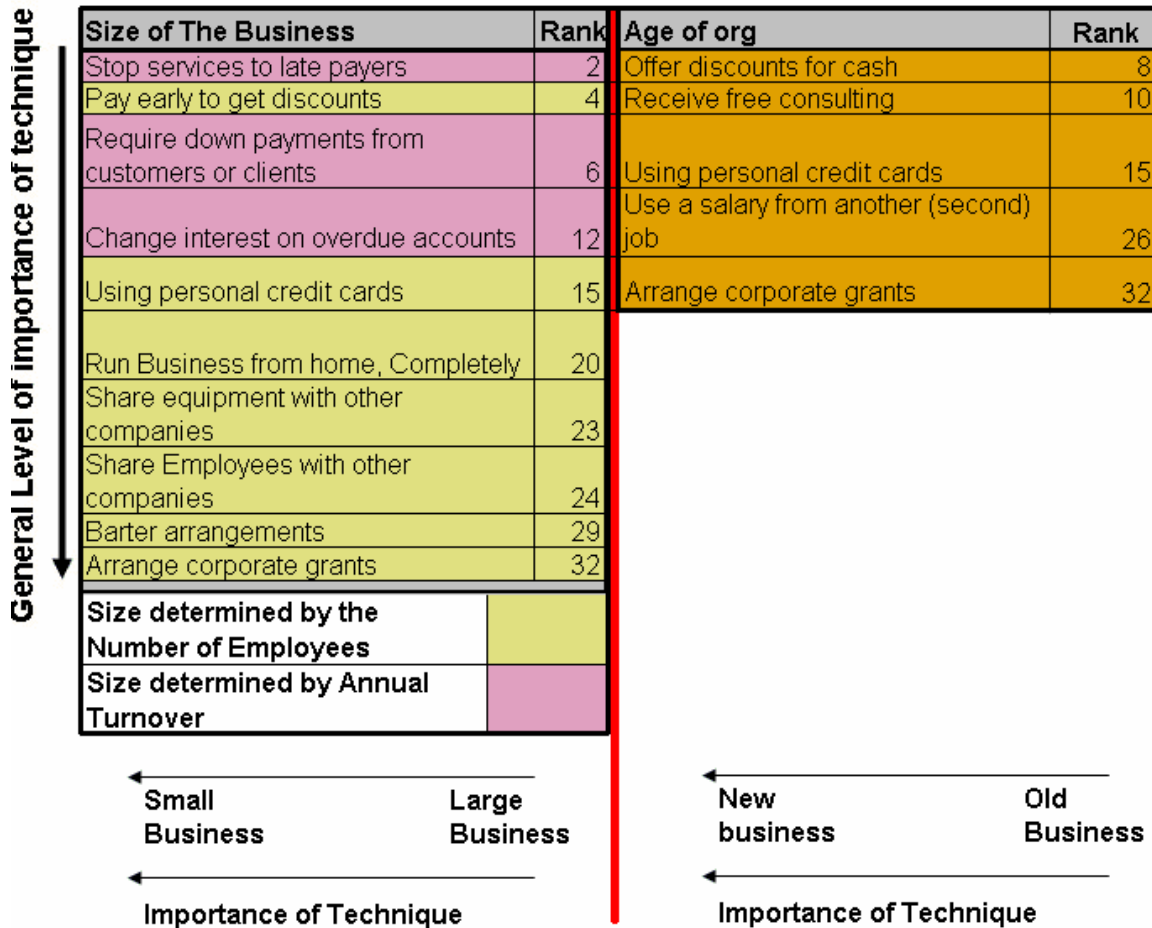
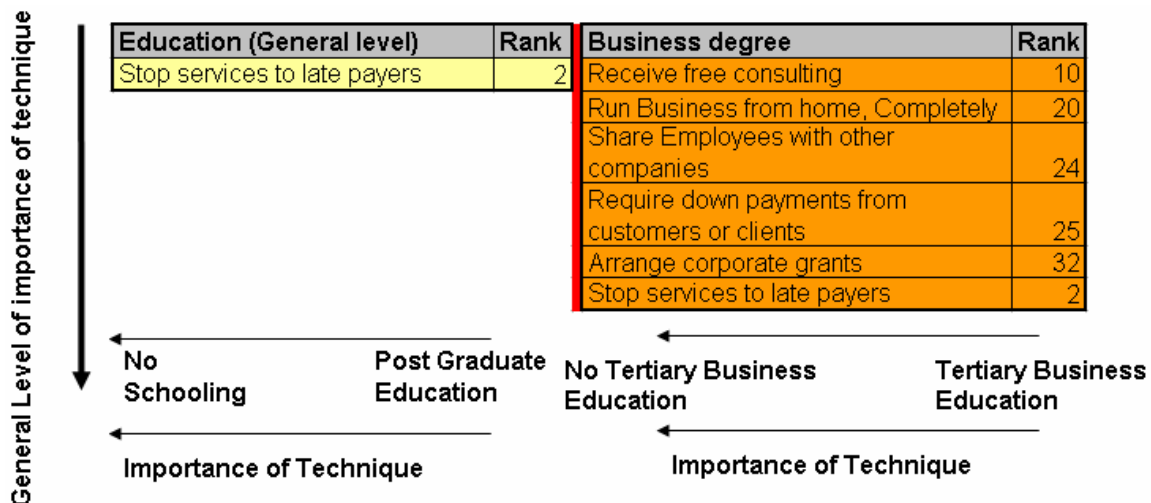


Figure 13: Educational influences on the perceived importance of bootstrap financing techniques



7.3. Recommendation for Stakeholders

The research is intended to enhance the understanding of small businesses with a particular focus on the importance of the identified bootstrap financing techniques. The stakeholder identified includes government and corporate stakeholders, potential and current entrepreneurs as well as academic institutions.

7.3.1. Government and corporate stakeholders

The findings from this study especially in relation to the dynamics associated with small new business can be used in order to better understand the constraints small businesses operate under. Many of the techniques employed are related to environmental constraints imposed on small business. More specifically it is clear that access to resources is a major constraint to businesses especially when they are small and new, the perceived higher importance of specific bootstrap financing techniques are testament to this fact.

Most interestingly entrepreneurs who have family members also engaged in entrepreneurship are more likely to gain access to loans from friends or family. Government grants are listed as the 3rd least important technique, indicating how little influence these grants have on entrepreneurial development. Government may consider these findings and investigate interventions to enhance the effectiveness of their distribution of grants. Secondly they need to consider

providing functions to enhance the distribution of corporate grants which were perceived to be the least important of all techniques analysed.

A suggestion is for an independent government agency to evaluate business plans and to then list the top 100 of these business plans in the public domain. This may enhance the efficiency for the distribution of both government and corporate grants.

7.3.2. Entrepreneurs and potential entrepreneurs

The findings in terms of the importance of the techniques evaluated can add practical value to both potential and current entrepreneurs. The results indicate which techniques to focus on and when they are important. The purpose of this study was first and foremost to propose a practical model for implementation and focus regarding these techniques to the entrepreneurs. This study recommends that entrepreneurs and prospective entrepreneurs consider these findings and apply them practically.

7.3.3. Academic institutions

The results clearly indicate that the implementation of the identified techniques form part of the everyday life of entrepreneurs, yet very little focus is placed on the application of bootstrap financing techniques in business schools. The recommendation is thus for more practical courses in entrepreneurship where they pay greater attention to the optimisation of resources through some of the lesser known, less formal techniques as identified in this study. Additionally more

academic research is required in order to gain a greater understanding of the dynamics surrounding these techniques.

7.4. Recommendations for future research

- The research excluded the influence of specific industries on the application of the techniques identified. Conducting future research related to specific industry sectors may enhance the understanding of bootstrap financing techniques significantly.
- The identified techniques contained in this study were based on previous research conducted outside of South Africa. A further recommendation would be for a qualitative study to be conducted on the techniques employed in South Africa, and to draw a comparison with the techniques used in this study. New techniques may be identified which may be very relevant specifically with regards to the South African.
- The dynamics of informal financing through family and friends of new businesses are poorly understood. Future research to better understand the dynamics behind the allocation of informal loans can add significant value to the field of entrepreneurship.

- The final suggestion for future research is related to the role of government in South Africa with regards to firstly being an enabler of entrepreneurship and secondly as a facilitator for the efficient allocation of corporate grants to high potential entrepreneurial ideas. Conducting such research could assist in enhancing the degree of entrepreneurial activity in South Africa.

7.5. Conclusion

It is clear from the research that the bootstrap financing techniques identified in this study are very relevant to entrepreneurs in South Africa. Most interestingly the importance of these techniques differs depending on specific dynamics regarding the business as well as the education associated with the entrepreneur.

It is hoped first and foremost that this research could add practical value for entrepreneurs in gaining a greater understanding of the techniques available to assist them in bridging the constraints they face with regards to gaining access to resources and finances. Secondly it is hoped that the study could enhance the understanding within the academic field of entrepreneurship, more specifically surrounding the importance of the use of specific bootstrap financing techniques given specific conditions, as proposed by the models in this chapter.

Finally it is hoped that this study will lead to an acknowledgement that greater recognition for the field of entrepreneurship is required in order to better understand the complexities surrounding it. Only a better understanding of entrepreneurship can empower the relevant authorities to enhance the environmental conditions for prospective entrepreneurs in South Africa.

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9. Appendixes

9.1 Appendix A

Owner's Resources or Borrowing Using personal credit cards Using personal home loan Give up personal salary Use a salary from another (second) job Run business from home, Partially Run Business from home, Completely	Relationship Resources Loans from relatives or friends Hire relations at low or no wages
Barter Barter arrangements (service or goods exchanges instead of using cash)	Cooperation Resources Borrowing Equipment Have consignment goods Share space with other companies Share equipment with other companies Share Employees with other companies
Customer or Client Financing Require down payments from customers or clients Be included in clients promotional materials Clients pay for product development costs	Cash Or Asset Management Invoice clients promptly Buy used equipment Minimise inventory Stop services to late payers Delay payment to suppliers Pay early to get discounts Change interest on overdue accounts Offer discounts for cash Delay pay day to Employees
Leases Lease Equipment	
Outsourcing Have Temporary Employees Receive Free Consulting	
Subsidies and Incentives Acquire government grants Arrange corporate grants	



9.2 Appendix B

		Public Company	Private Company	Closed Corporation	Partnership	Other
h	Type of legal entity					
I am a current MBA student at Gordon Institute of Business science (University of Pretoria). We are required to submit						
2	Please mark the blocks that applies to you. Note you can mark more than one					
		Mother	Father	Sister / Brother	In-laws	None
a	Family members that are entrepreneurs					
Please return before 15 September 2007						
Please mark the most correct answer						
		Very Often	Often	Sometimes	Rarely	Never
b	How often do you interact with other entrepreneurs					
		Male		Female		
3	Bootstrap Financing Techniques					
Please mark the answer which best describes how important you feel the below mentioned technique has been in the running and establishing your business. Please mark only one block per question						
		Very Important	Fairly Important	Neutral	Not so Important	Not at all important
a	Delaying payments					
b	Barter arrangements (service or goods exchanges)	Some / No Schooling	Matric	Degree / Diploma	Post Graduate	Business/ Commerce Degree
c	Using my personal credit cards					
d	Using my personal home loan	African	Indian	Coloured	White	
e	Give up personal salary					
f	Use a salary from another job					
g	Run business from home, Partially					
		Less than 5 years	More than 5 years			
h	Run Business from home, Completely					
G	operation					



ad	Have temporary employees					
ae	Receive free consulting					
af	Acquire government grants					
ag	Arrange corporate grants					
l	Borrow Equipment					
m	Have Consignment goods					
n	Share space with other companies					
o	Share equipment with other companies					
p	Share Employees with other companies					
q	Require down payments from customers or clients					
r	Be included in clients promotional materials					
s	Clients pay for product development costs					
t	Invoice clients promptly					
u	Buy used equipment					
v	Minimise inventory					
w	Stop services to late payers					
x	Delay payment to suppliers					
y	Pay early to get discounts					
z	Change interest on overdue accounts					
aa	Offer discounts for cash					
ab	Delay pay day to Employees					
ac	Lease equipment					

9.3. Appendix C



	South African Results	Neeley, 2002, Results	Percentage Difference in Ranking
Techniques			
Invoice clients promptly	1	1	0%
Stop services to late payers	2	4	6%
Give up personal salary	3	9	19%
Pay early to get discounts	4	10	19%
Minimise inventory	5	3	6%
Require down payments from customers or clients	6	5	3%
Have temporary employees	7	6	3%
Offer discounts for cash	8	15	22%
Be included in clients promotional materials	9	13	13%
Receive free consulting	10	25	47%
Buy used equipment	11	2	28%
Change interest on overdue accounts	12	14	6%
Using personal home loan	13	NA	NA
Lease equipment	14	8	19%
Using personal credit cards	15	7	25%
Loans from relatives or friends	16	20	13%
Run business from home, Partially	17	24	22%
Delaying payments to vendors	18	11	22%
Share space with other companies	19	22	9%
Run Business from home, Completely	20	26	19%
Delay payment to suppliers	21	12	28%
Clients pay for product development costs	22	19	9%
Share equipment with other companies	23	27	13%
Share Employees with other companies	24	28	13%
Have consignment goods	25	18	22%
Use a salary from another (second) job	26	23	9%
Borrowing Equipment	27	17	31%
Hire relations at low or no wages	28	21	22%
Barter arrangements (service or goods exchanges instead of using cash)	29	16	41%
Acquire government grants	30	30	0%
Delay pay day to Employees	31	29	6%
Arrange corporate grants	32	31	3%

9.4. Appendix D



Outsourcing	South Africa	Neeley
Have Temporary Employees	7	6
Receive Free Consulting	10	25
Average	8.5	15.5

Cash Or Asset Management	South Africa	Neeley
Invoice clients promptly	1	1
Buy used equipment	11	2
Minimize inventory	5	3
Stop services to late payers	2	4
Delay payment to suppliers	21	12
Pay early to get discounts	4	10
Change interest on overdue accounts	12	14
Offer discounts for cash	8	15
Delay pay day to Employees	31	29
Delay Payment to Vendors	18	11
Average	11.3	10.1

Customer or Client Financing	South Africa	Neeley
Require down payments from customers or clients	6	5
Be included in clients promotional materials	9	13
Clients pay for product development costs	22	19
Average	12.3	12.3

Leases	South Africa	Neeley
Lease Equipment	14	8
Average	14	8

Owner's Resources or Borrowing	South Africa	Ranking Neeley
Using personal credit cards	15	7
Using personal home loan	13	NA
Give up personal salary	3	9
Use a salary from another (second) job	26	23
Run business from home, Partially	17	24
Run Business from home, Completely	20	26
Average	16.2	17.8

Relationship Resources	South Africa	Ranking Neeley
Loans from relatives or friends	16	20
Hire relations at low or no wages	28	21



Average	22	20.5
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Cooperation Resources	South Africa	Ranking Neeley
Borrowing Equipment	27	17
Have consignment goods	25	18
Share space with other companies	19	22
Share equipment with other companies	23	27
Share Employees with other companies	24	28
Average	23.6	22.4

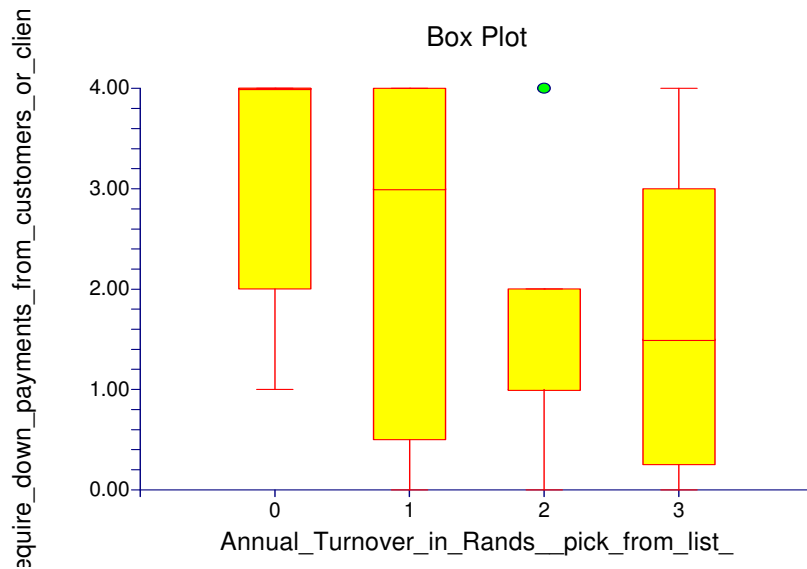
Barter	South Africa	Neeley
Average	29	16

Subsidies and Incentives	South Africa	Neeley
Acquire government grants	30	30
Arrange corporate grants	32	31
Average	31	30.5

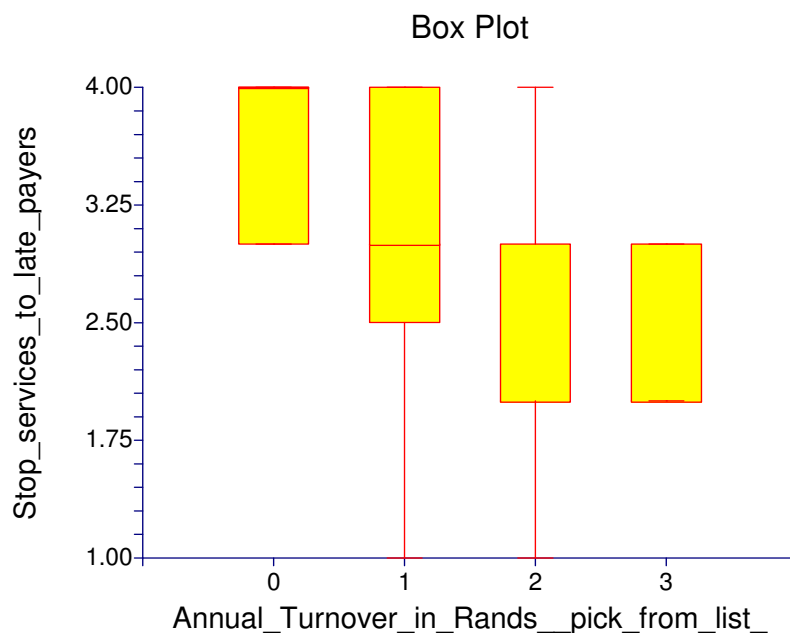
9.5. Appendix E

9.5.1. Size of the business based on turnover: Box plots for techniques where hypothesis got rejected

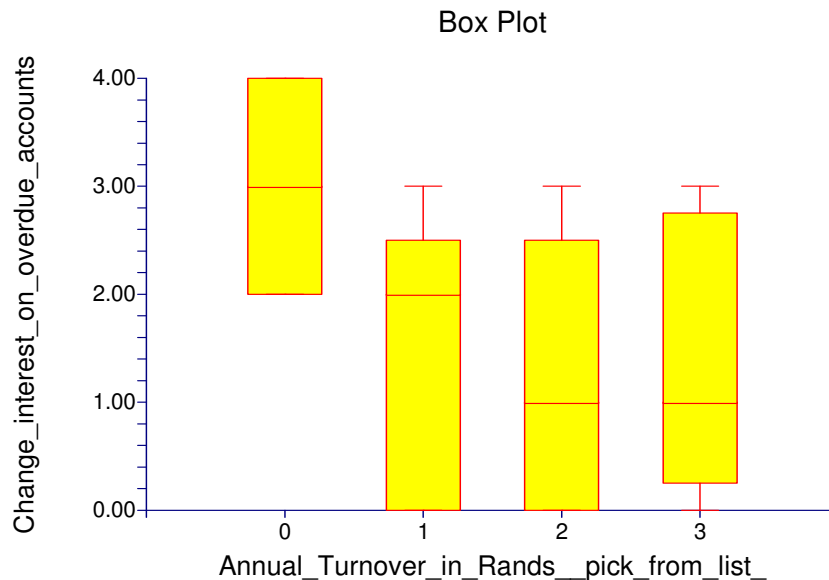
1. Require down payment from clients of customers



2. Stop Services to late payers

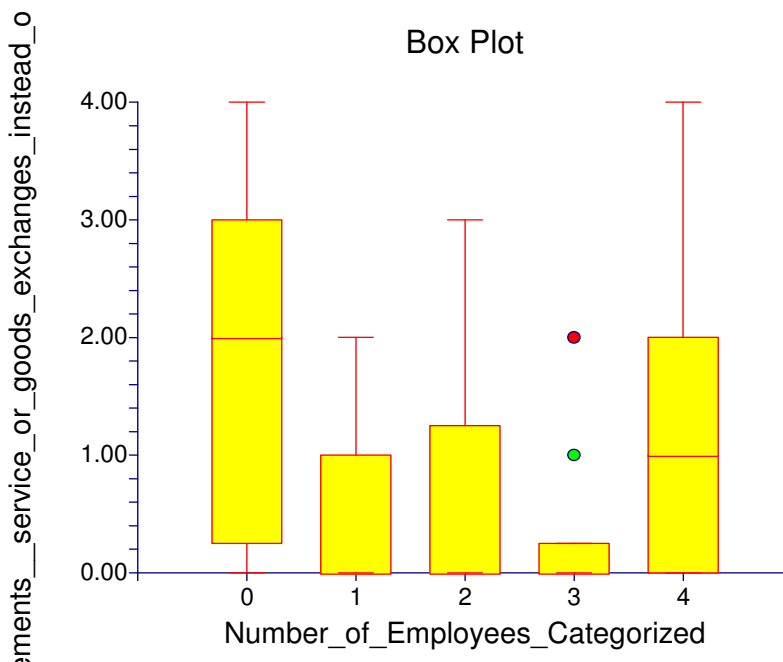


3. Change interest on overdue accounts

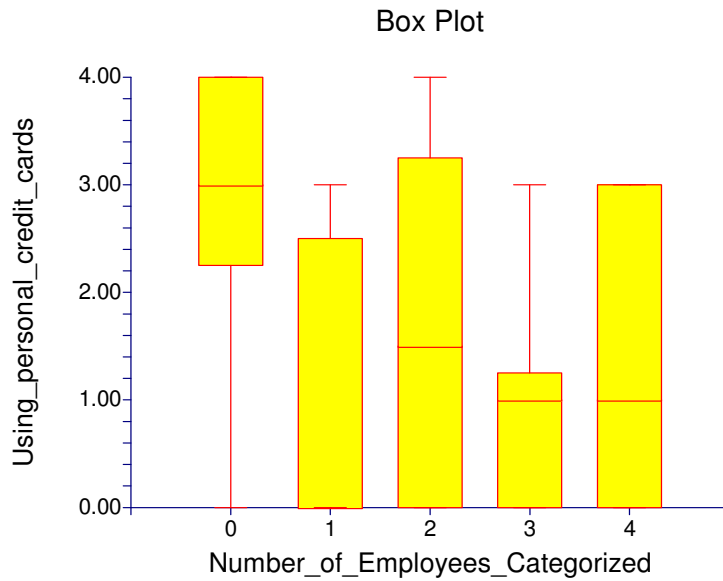


9.5.2. Size of the business based on number of permanent employees: Box plots for techniques where hypothesis got rejected

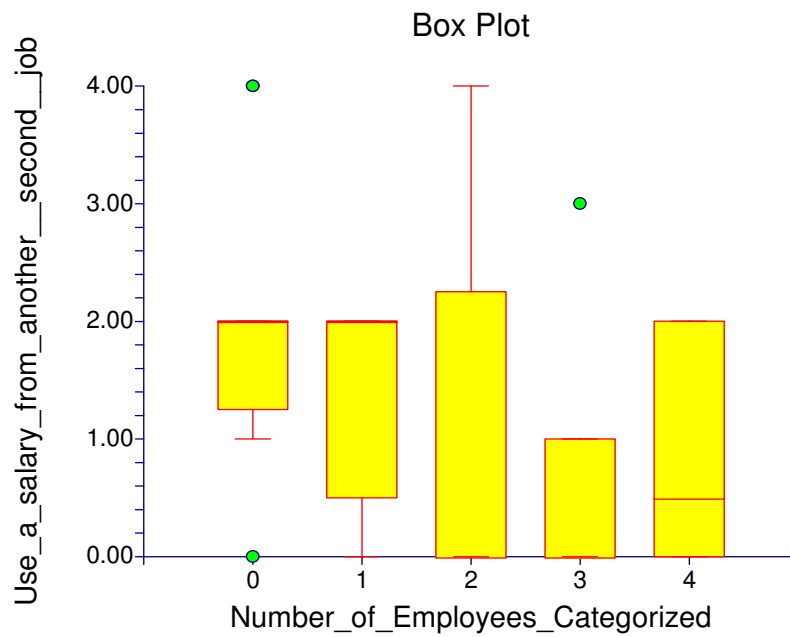
1. Barter arrangements, services or goods exchanges instead of using cash



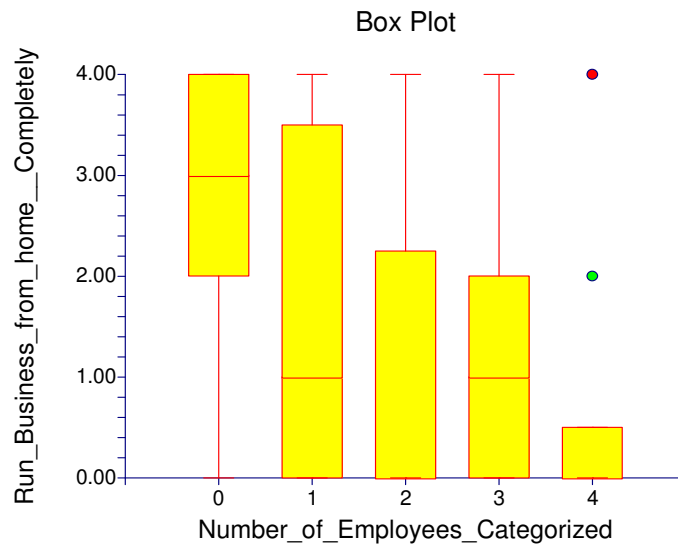
2. Using personal credit card



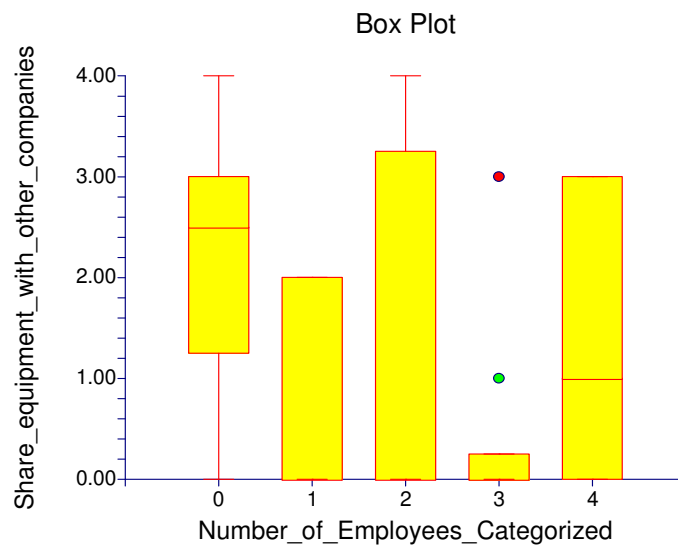
3. Use Salary from another job



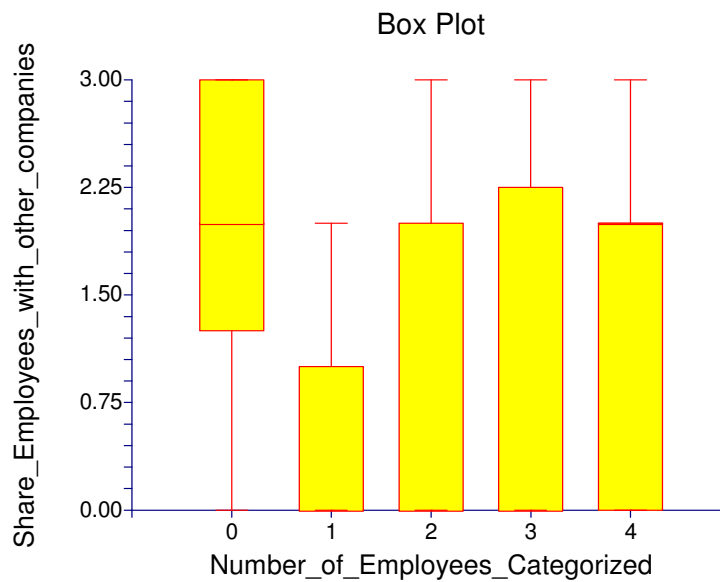
4. Run business from home completely



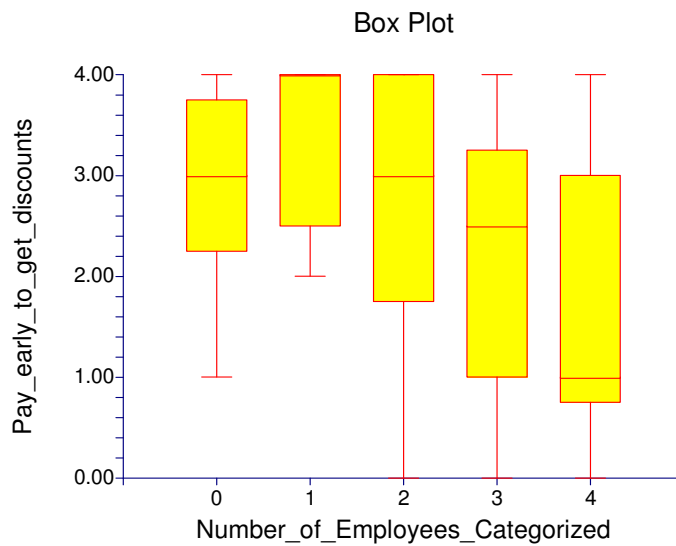
5. Share equipment with other companies



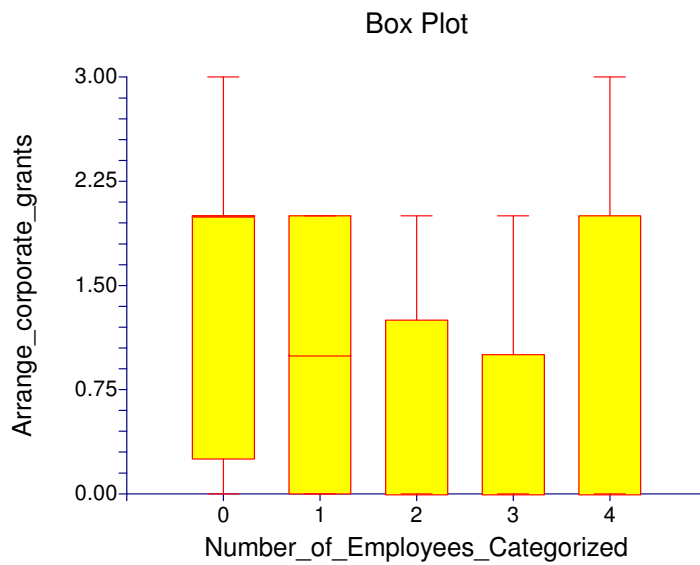
6. Share employees with other companies



7. Pay early to get discounts

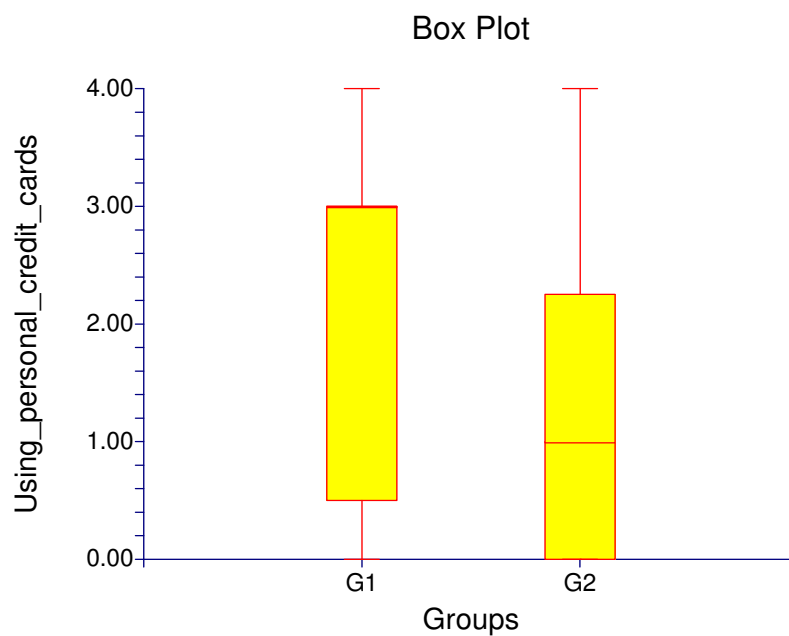


8. Arrange corporate grants

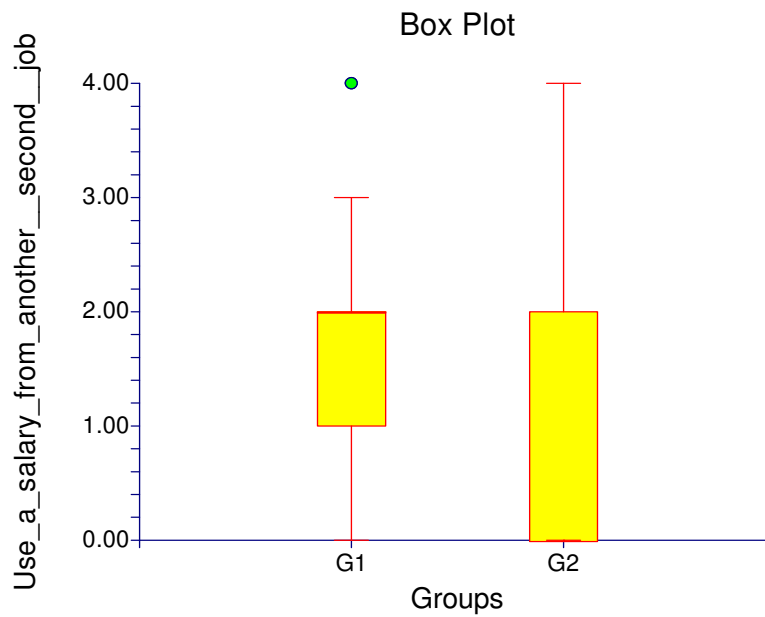


9.5.3. Age of the business: Box plots for techniques where hypothesis got rejected

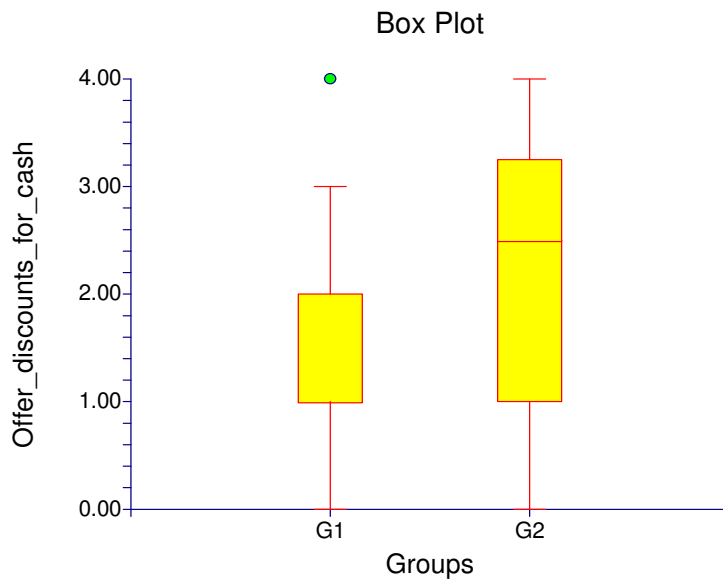
1. Using personal credit card



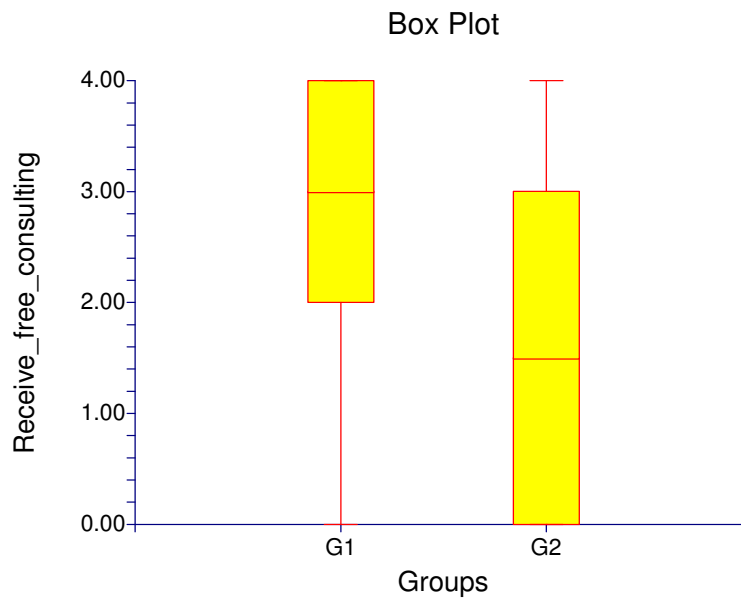
2. Use salary from a second job



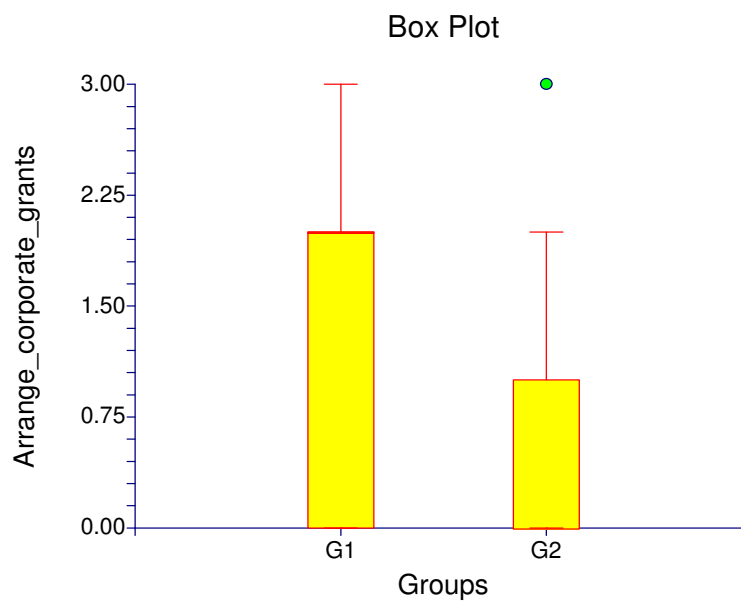
3. Offer discounts for cash



4. Receive free consulting

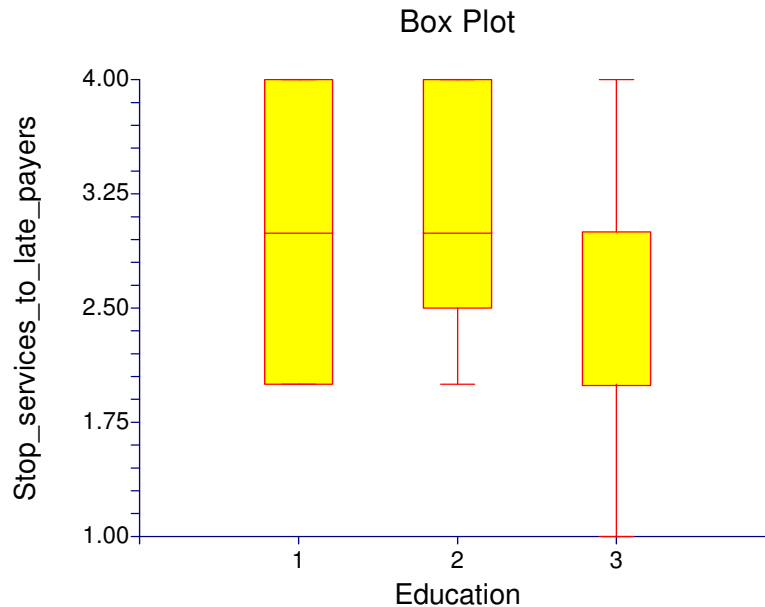


5. Arrange corporate grants



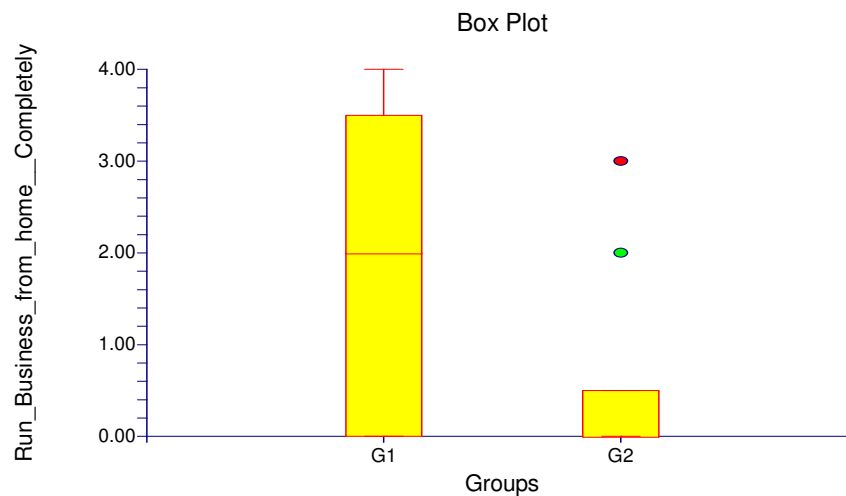
9.5.4. General education level of the entrepreneur: Box plot for the technique where the hypothesis got rejected

1. Stop services to late payers

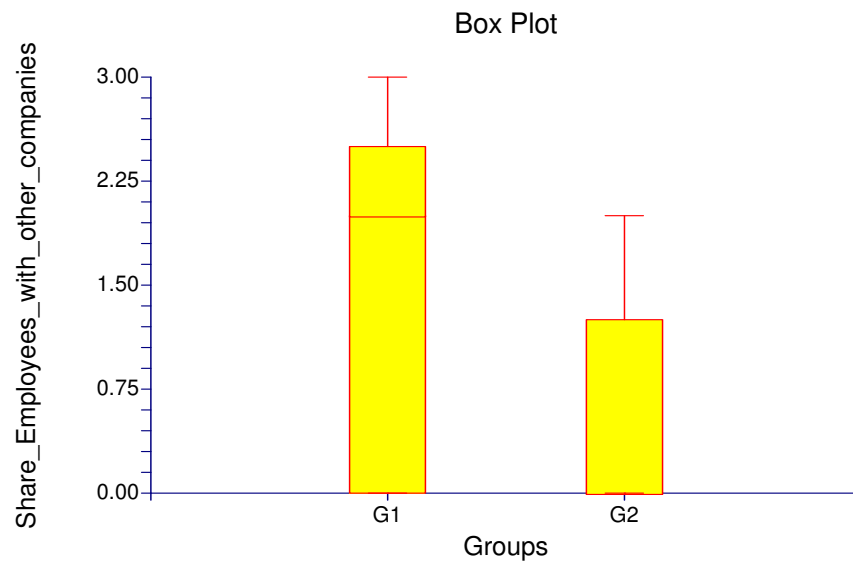


9.5.5. Business or commerce related tertiary education: Box plots for the techniques where the hypothesis got rejected

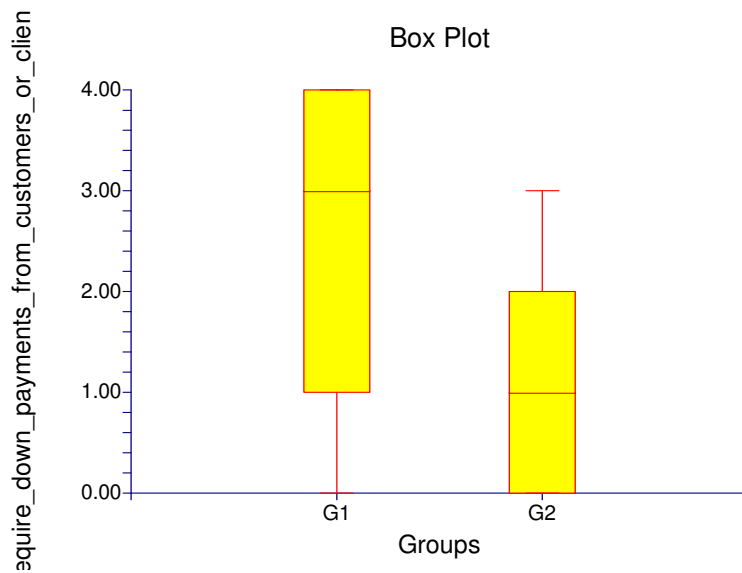
1. Run Business from home completely



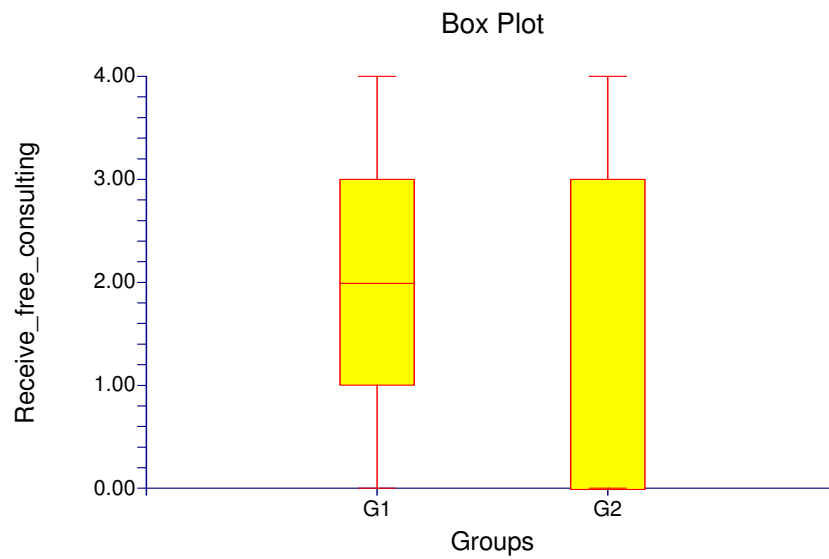
2. Share employees with other companies



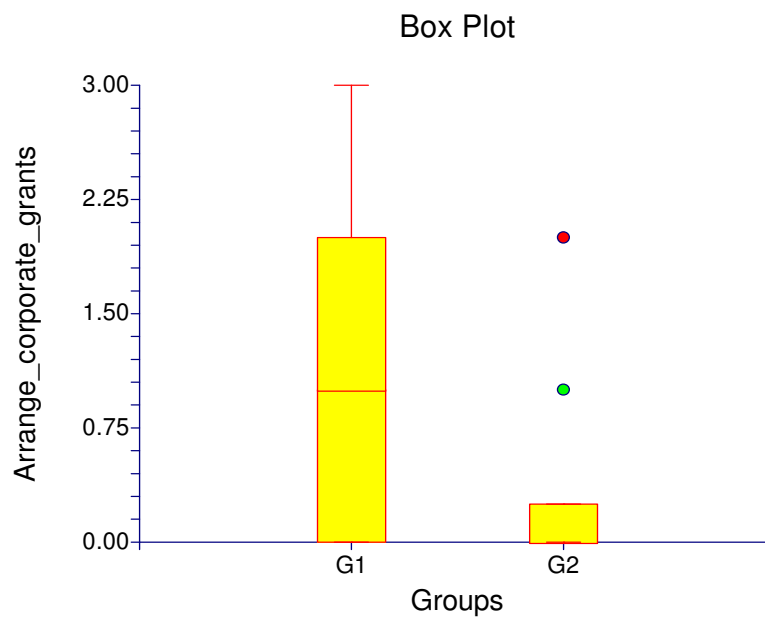
3. Require down payment from clients or customers



4. Receive free consulting

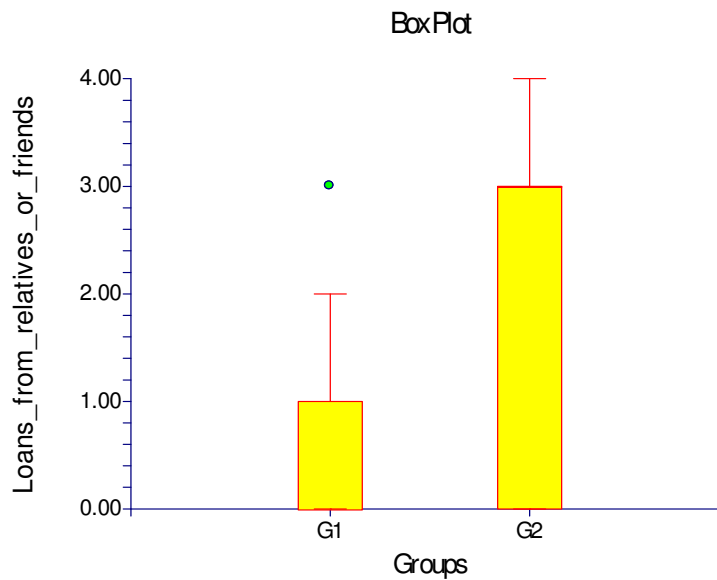


5. Arrange corporate grants



9.5.6. The number of family members who are engaged in Entrepreneurship: Box plot for the technique where the hypothesis got rejected

1. Loans from friends or family



9.6. Appendix F

This appendix contains a list of the names of the entrepreneurs who responded to the survey.

Numer	Respondent name
1	Gary Alleman
2	Jan Bongaerts
3	Karen Lewis-Enright
4	Marianne van Breda
5	Kerry Shear
6	Fiona Lear
7	Carina de Lange
8	Kevin Daly
9	Catherine Lund
10	Tim Skelton
11	Alex Milovanovich
12	Frans Badenhorst
13	deon prinsloo
14	Justin
15	Maurice Coopmans
16	Charlotte Coetzee
17	Mary Theron
18	Steve Gipson
19	Toni Lamberti
20	ARGYROS ARGYROU
21	Colin J David
22	Mauro Trevisan
23	Amanda Rosslee
24	Lettie Davey
25	Gert Vermaak
26	Irna Herselman
27	Frank Klopper
28	Murray Brown
29	Rhona Berkenbosch
30	Andrew Wilson
31	Joe Peters



32	Stuart McClarty
33	BERNHARD PRIGGE
34	Delesh Dita
35	Michael Kraut
36	John Schubach
37	Richard Lendrum
38	Jeremy Thomas
39	Angelique de Rauville
40	Tony Marchesini
41	Kate Elphick
42	Rodger Williams
43	John Short
44	Dennis Lamberti
45	Martin Levick
46	D.A Stacey
47	Schalk vd Merwe