

# **Gordon Institute of Business Science**

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## **Business model innovation in construction supply chains in South African townships**

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## **Abstract**

It is widely-accepted that to achieve sustainable economic development, South Africa needs to move towards sustained and efficient entrepreneurship. However, in informal settlements (townships), entrepreneurship is hindered by various constraints. This study set out to determine how resource and contextual constraints, a lack of supply chain efficiency, and discrepancies between the South African formal and informal sectors present challenges in a complex construction-industry supply chain. The study investigated the idea that business model innovation cannot take place under this complexity and cannot sustain township business development in the broader competitive landscape of South Africa. A business model canvas was developed using the findings of the study, to assist entrepreneurs in the industry going forward.

During the qualitative explorative study, a case study methodology was used in order to capture the experiences of a purposive sample in the township construction supply chain. A sample of fifteen respondents was drawn across five cases, comprising suppliers, customers and business owners from several township communities in Gauteng, South Africa

Conclusive findings of the study suggest that resource and contextual constraints, a lack of supply chain efficiency, as well as dependency between the South African formal and informal sectors prevent business model innovation and thus supply chain efficiency in the township construction supply chain.

The research was limited by language barriers, researcher bias, and participant subjectivity; however, the research is valuable as it addresses a different view to entrepreneurial theory that already exists, provides a detailed analysis into business in a specific industry within a township construction supply chain, and offers entrepreneurs the opportunity to develop their business models more formally using a business model canvas as a conceptual model. This will help to ensure that successful and efficient business ventures in the township construction supply chain are in operation.

## **Keywords**

Entrepreneurial bricolage

Business models

Business model innovation

South African Townships

Construction supply chain

## Declaration

*I declare that this research project is my own work. It is submitted in partial fulfilment of the requirements for the degree of Master of Business Administration at the Gordon Institute of Business Science, University of Pretoria. It has not been submitted before for any degree or examination in any other University. I further declare that I have obtained the necessary authorisation and consent to carry out this research.*

X

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13 March 2019

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## Chapter 1: Introduction

### 1.1 Background and Problem Statement

It is widely-accepted that to achieve sustainable economic development, South Africa needs to move towards sustained and efficient entrepreneurship. However, in informal business environments, entrepreneurship is hindered by various constraints. This study set out to determine how resource and contextual constraints, a lack of supply chain efficiency, and discrepancies between the South African formal and informal sectors present challenges for entrepreneurs in South African townships (informal settlements), specifically in the construction-industry supply chain.

In order to understand the context of the study, one must first understand the macro-economic makeup of South Africa's economy and the uniqueness of township business environments. The township communities of South Africa are a thriving business environment that makeup an integrated network of entrepreneurs doing their best to improve their livelihoods and living standards, and provide for large families in a difficult environment. This entrepreneurial activity often goes unnoticed in South Africa and presents an opportunity to learn about the intricacies that form these business supply chains, and the reliance of entrepreneurs on a sustained and efficient business in the township economy.

Since the Apartheid error engrained in South Africa's history created racial segregation and spatial planning, two parallels of business activity have emerged in recent years in South Africa as seen in most developing countries. The formal and informal sectors comprise of these two parallels and their interconnectivity to one another creates different levels of efficiencies and complexities within each, which is worth investigating.

Retailers are generally well-equipped in the township economy and operate with minimal resources where revenue is mostly generated from fresh produce (Beneke, Curran, Forsyth & Lamb, 2011). Retailers generally heavily rely on external supplier networks that exist mainly outside the township supply chain. As an example, a small retail hardware store operating in a township is unable to acquire their inventory within the borders of the township community and hence need to travel far to access warehouse clubs to purchase their goods (Beneke et al., 2011). This shows that there is some form of reliance of township construction supply chains on the formal sector in South Africa. Once again, this contributes to financial constraint as township business

owners have to pay immediately for inventory and do not receive the benefit of discounted pricing as they acquire inventory at a retail level in the formal economy. Business owners are also unable to secure a good credit rating to begin opening accounts and build trust with proper formal suppliers within a specified value chain.

Given these constraints within the township economy, although businesses operate successfully, they operate in silos, detached from an optimised supply chain structure to support their business needs. This makes running a business in the township economy inefficient under such constraints. Innovatively creating value for customers through business models becomes very difficult as the relationships, networks and benefits that exist for a firm in formal sector supply chains are few and far between for township businesses (Teece, 2010; Zott & Amit, 2010; Adner, 2016). Having identified that informal supply chains do exist, an interesting dynamic becomes evident, making it necessary to investigate the efficiency of these supply chains relative to formal sector supply chains that are characterised by structure, organisation and efficiency between stakeholders (Bildsten & Manley, 2015).

Township economies, and in particular construction supply chains within townships, are resource-constrained. Given these constraints, there is a need for business model innovation, especially within the construction sector given the complexity of these supply chains. Knowing that township economies have resource constraints, entrepreneurs tend to fall back on bricolage in order to make do with the resources they have available to them (Linna, 2013). In essence, in developing economies, entrepreneurs experience bricolage in the form of a chronic deficiency of resources affecting production, selling and purchasing (Linna, 2013). Furthermore, research done by Fisher (2012) showed that entrepreneurs all begin by relying on bricolage to begin their business. In his study, entrepreneurs had resources under their control for a period and made do with these resources to a point where they needed external resources to progress with their business opportunity (Fisher, 2012). In township communities, it seems that this second stage of gaining resources is difficult to come by and hence results in bricolage, effectively creating radical innovation as a result (Keupp & Gassman, 2013). However, bricolage may force entrepreneurs to innovate out of desperation for their businesses to survive. This may be a cause for the chronic nature of resource scarceness to continue within township economies.

In order to focus the scope of this study, a specific industry was detailed to fully understand the complexities and dynamics a township economy presents, before being able to innovatively create and manage these supply chains. The construction supply

chain in South Africa is a complex network of highly profitable businesses and thriving relationships, and is rich in resources; however, it is only prominent in South Africa's formal sector. Typically, the traditional construction supply chain operates as a vast net of suppliers, service providers, professionals and administrators who, together, rely on one another to form an efficient ecosystem that creates value for the end consumer (Adner, 2016). Achtenhagen, Melin and Naldi (2013) provided evidence as to how business model design can create a competitive advantage within a business environment and supply chain network. Evidence of innovative design and development of business models within the formal construction supply chain of South Africa exists and should provide a base from which township construction supply chains can begin to be developed more efficiently. In these formal supply chains, businesses work tirelessly to integrate their business models as far and as cost effectively as possible. This ensures that the business broadens their capabilities and improves their competitive advantage, not only among competitors, but within the entire supply chain as well.

It can be argued, however, that a formal economy type supply chain may not compete well in a township type context, as formal supply chain elements found within firms do not fit the context of township supply chains. Therefore, developing an understanding of the factors that exist in the township supply chain together with those found in the formal sector within a defined industry is more beneficial. By doing so, a better understanding of the complexities of this business ecosystem can be gained in order to create unique, efficient and well-structured business models within the construction supply chain that creates value for target consumers within these township communities.

Brière, Tremblay and Dau (2014) identified that as a developing market, South Africa must focus on business development together with entrepreneurship in order to grow the country's economy. However, Herrington and Kew (2014) showed that South Africa is still among the worst sub-Saharan African countries to suffer inequality and unemployment even though efforts have been made to invest in entrepreneurial activity. The implication of this is a concern for the South African economy as neither private sector business nor government have been able to address increasing infrastructure deterioration, poor service delivery, increasing inequality, poverty, lack of proper education and continuous resource constraints. Specifically in terms of small business, no concrete efforts have been made to open factories, stores or offer services in the township markets of South Africa (Beneke et al., 2011). This may be

due to negative perceptions, a lack of knowledge and the complexity the environment presents for business owners looking to invest their resources. South Africa should thus learn from other African and developing economies where a co-operative relationship exists between government, business in the formal sector and entrepreneurs looking to begin new businesses. Ultimately, this type of symbiosis between the actors in the South African economy would create the developing factors necessary for a thriving economy to emerge in townships.

The problem statement for this study can be distilled as follows:

Resource and contextual constraints, a lack of supply chain efficiency and discrepancies between the South African formal and informal sectors presents challenges in a complex construction supply chain. Business model innovation can therefore not take place under this complexity and cannot sustain township businesses growth and development in the broader competitive landscape of South Africa.

## **1.2 Scope of the Research**

This research looks specifically at business model innovation among South African township construction supply chains. The construction supply chain is broken down into a diverse group of firms, from which qualitative data was drawn. The diverse group spans the length of a township construction supply chain and includes firms from the following levels of the supply chain:

1. Manufacturers
2. Wholesalers
3. Retail hardware stores
4. Builders and contractors
5. Home and business owners (end consumer)

## **1.3 Significance of the Research**

### **1.3.1 Business Requirement**

A township construction supply chain exists in the township economy of South Africa. Understanding the dynamics and decisions of the entrepreneurs within this defined environment is important. These results will yield outputs that determine whether formal business structures exist which contribute to business model innovation and thus a more efficient supply chain. If an optimised construction supply chain is created, formalised and managed correctly, it could yield a much more efficient supply chain that is rich in resources and that is able to create the same or even more value as seen in the formal construction supply chain of South Africa. With the correct business model

design and structure combined with heightened levels of business model innovation within the informal construction supply chain supply, more sustainability can be built into the township construction supply chain to ensure that businesses and business environments stand the test of time to perhaps merge with the formal sector.

### **1.3.2 Theoretical Contribution**

Substantial literature exists around the topics of entrepreneurial theory, business model innovation and supply chain theory (Lönngren, Rosenkranz & Kolbe, 2010; Papadonikolaki, Verbraeck & Wamelink, 2017; Bildsten & Manley, 2015;Kalian, Watson, Agbasi, Anumba, & Gibb, 2004;Zott & Amit, 2010; Achtenhagen et al.,2013).However, this literature only seems to focus on a formal context and mostly in developed countries. There is very limited literature around business model innovation and supply chain management in township economies. Although township economies are poor and may not seem to be significant to the South African economy at face value, the potential of these markets for South Africa's economy is worth recognising. This research presents a unique opportunity to learn and contribute to literature by bringing to light complexities of township supply chains. Further contributions will be seen in business model innovation literature where players in these value chains may shed light on the unique ways in which innovation is present in their business models to suit their unique customers in the constrained difficult township context in which they operate.

### **1.4 Purpose of the Research**

The purpose of this research is to gain an understanding into the complexities of township construction supply chains. Furthermore, the research aims to identify and articulate real life cases and what compromises the business models of these cases in the construction supply chain of the township economy. The research will contribute to existing literature by providing a new context in which the level of business model innovation is tested in a constrained business environment, and the outcomes of which may help formal supply chains gain new insights into a differentiated competitive advantage.

### **1.5 Research Objectives**

The aim of the research is to gain insights into whether contextual and resource constraints affect the level of business model innovation considered by entrepreneurs through the multiple components, enablers and challenges experienced by entrepreneurs that make up the township construction supply chain environment.



This is achieved in the following ways:

1. Inspecting the aspects of contextual and resource constraints within the township environment and whether those constraints have inspired business model innovation.
2. Identifying how the formal sector has impacted the complex and unique components that make up the construction supply chain within the township.
3. Determining those enabling and challenging factors that create the environment in which business owners consider business model innovation as a strategy to business growth and development.

## **1.6 Conclusion**

This chapter has detailed the background for the study and provided insights into why the study is necessary from a business and theoretical perspective. Provided that the township construction supply chain has a sustainable level of business model innovation, the efficiency within the supply chain for all stakeholders will improve to foster a thriving business environment. The review of literature to follow will relate to the research objectives using resource constraints and entrepreneurial bricolage as an overarching principle. Following this will be a review on literature covering business models and business model innovation. The South African formal and informal economy together with supply chain theory will expand the literature review for further insights into constrained business environments faced by the informal sector.

## Chapter 2: Literature Review

### 2.1 Introduction

The literature review begins by exploring literature related to entrepreneurship theories to delve into the overarching principles of effectuation, causation and entrepreneurial bricolage. In-depth exploration of bricolage and a resource-based view will set the conceptual framework of the current study. Given that the scope of the study is concentrated among entrepreneurs within the township construction supply chain of South Africa, which has been traditionally defined as a resource scarce environment, entrepreneurial theory offers a framework and starting point to be able to understand the dynamics of this complex entrepreneurial environment. In this chapter, entrepreneurial bricolage is expanded to unearth the mechanics of innovation by entrepreneurs under resource constraints that may become relevant in the township construction business environment. Business models and business model innovation will expand the review to allow for a better understanding into the structure, design and strategy that entrepreneurs in the township should have in their business models when operating their businesses in a broader ecosystem to be considered innovative. Finally, exploration into supply chain theory and the South African formal and informal economy is analysed to explore the relationship between the two sectors specifically in the construction industry of the country.

### 2.2 Entrepreneurship Theory

#### 2.2.1 Overview

Over the past two decades, entrepreneurship theory has grown out of its infancy to include a variety of views in the field. Shane and Venkataraman (2000) began by expressing their views on entrepreneurship theory in positing that instead of theories being based on a unique set of empirical experiences, the field of entrepreneurship has become defined as a broad label where patchwork research is kept. For this reason, the academics present a conceptual framework for which entrepreneurial theory can be understood by future researchers in the field. Their framework has been developed on the premise that entrepreneurial activity needs to be considered as the presence of an advantageous opportunity that presents itself to enterprising individuals (Shane & Venkataraman, 2000). Sarasvathy (2001) presented a similar but far more researched theoretical understanding to entrepreneurship in the form of effectuation theory. Here, entrepreneurial action is derived through opportunity where the most important aspect of the entrepreneur is to be an effectuator (Sarasvathy, 2001). Defined, an effectuator

is “an imaginative actor who seizes contingent opportunity and exploits any and all means to fulfil a plurality of current and future aspirations” (Sarasvathy, 2001, p.262).

Sarasvathy, Dew, Velamuri and Venkataraman (2003) further expanded on entrepreneurial opportunity where three views of the market should be integrated to emphasise contingencies rather than inevitabilities. The first view looks at entrepreneurial opportunity being an allocative process where final effects of opportunity are only considered; the second is a discovery process where final effects are treated as an inevitable; and the third as a creative process where both origin and final effects of opportunity are considered (Sarasvathy et al., 2003). Pelly (2017) offered an alternative view to entrepreneurial opportunity using the theory of firms. Their findings suggest that opportunities are found objectively, defined individually and are built on relationships. Given that the basis of the above views is entrepreneurial opportunity, more thorough investigation into the main theories that have been developed will need to be further explored throughout this section.

Entrepreneurial theory has been extended to include common sense logic, theory of planned behaviour, economic powerlessness as well as a resource-based view. Common sense logic was used to understand entrepreneurship by Ramoglou and Tsang (2017) to break down the multiple views that have been developed to understand entrepreneurial opportunity specifically. Their findings suggest that all opportunity is agent dependent; however, some opportunity's achievement are agent dependent requiring different levels of the entrepreneur's commitment and, as a result, opportunities exist and are not imagined but instead need to be creatively realised (Ramoglou & Tsang, 2017). Considering that the current study is set in a developing market context, the theory of planned behaviour, economic powerlessness and a resource-based view on encouraging entrepreneurship and entrepreneurial intent should also be further investigated in conjunction with the above findings around entrepreneurial opportunity. Anjum, Sharifi, Nazar and Farrukh (2018) conducted a study in the developing economy of Pakistan and concluded that entrepreneurship is an effective way to deal with unemployment which helps alleviate poverty. In terms of entrepreneurial intention, using the theory of planned behaviour and the addition of another two variables – self-efficacy and perceived risk – students in the study showed a higher level of entrepreneurial intent (Anjum, Sharifi, Nazar & Farrukh, 2018).

Khaola and Ndovorwi (2015) offered an additional element to add on to the theory of planned behaviour and its affect on entrepreneurial intent within the context of developing economies. In their study, feelings of economic powerlessness were

negatively associated with intentions of the sample to become self-employed (Khaola & Ndovorwi, 2015). This finding helps to confirm that entrepreneurs in developing economies experience the external pressures of the economic environment in which they reside, and that this pressure causes less intent to pursue entrepreneurial activity within that economy. Likewise, Williams and Bezeredi (2018) in their study on an institutional theory of informal entrepreneurship in the developing economy of Macedonia, found that formal institution failures lead to a commonality between formal business rules and a greater acceptability for the entrepreneur to instead operate in the informal economy. This provides evidence in developing economies that although formal sectors run in parallel to more informal economies, some entrepreneurs find comfort to rather institutionalise in a more familiar informal business environment.

An additional view on entrepreneurship theory which is important to understand and holds relevance in the current study is the perspective of the resource-based view in entrepreneurship theory. Considering that the current study was conducted in a typically and predominantly resource scarce environment, these views have become valuable. Alvarez and Busenitz (2001) showed, using a resource-based theory together with entrepreneurship, that awareness of opportunities, the skill to gain and control resources to execute the opportunity, and the organisational skills to combine like inputs into a variety of different outputs was essential for sustained entrepreneurial success. The resources identified can therefore be considered as resources in their own right, and comprise of the following: entrepreneurial alertness, insight, entrepreneurial knowledge, and the ability to organise resources (Alvarez & Busenitz, 2001). Furthermore, Huang and Knight (2017) delved into relationships in entrepreneurship that uses exchange theory to understand the relationship between investor and entrepreneur. They created an exchange-based model that describes the entrepreneur investor relationship which may help when understanding the flow of resources and their origins in the current study (Huang & Knight, 2017).

Resource-based theory is then a bridge to the main theoretical underpinnings of the current study. Entrepreneurial bricolage describes the process whereby entrepreneurs in a resource-constrained environment need to resort to radical innovation to be able to sustain their businesses (Keupp & Gassmann, 2013). Bricolage is considered as the type of innovation where something is made from nothing and is often found among entrepreneurs who experience constraints of some form (Sundaramurthy, Zheng, Musteen, Francis & Rhyne, 2017). Although bricolage is a fairly new concept to entrepreneurial theory and not part of the main theories presented above, a convergence is beginning to occur between effectuation, causation and bricolage when

entrepreneurs are running their businesses, even when outside of resource-constrained environments (Fisher, 2012). A discussion on entrepreneurial bricolage will follow in more detail further in this paper.

### 2.2.2 Effectuation and Causation

Effectuation theory has been a long standing grounding theory used to view entrepreneurship. The theory's origins can be traced back to Sarasvathy (2001), who created a framework that derives entrepreneurial action through opportunity where the essential agent of entrepreneurship is to be an effectuator. In the model, three questions need to be asked by the entrepreneurial agent: 1) Who am I? 2) What do I know? and 3) Whom do I know? (Sarasvathy, 2001). These three questions form a set of means for which the entrepreneur can begin to understand the opportunity that exists and works towards contingent aspirations. Both effectuation and causation are built on the principle of effects in order to realise an opportunity. However, their mechanics differ slightly in that effectuation considers that the set of means are given, and maintains a focus on effects that are created with the set of means, while causation is the opposite (Sarasvathy, 2001). In essence, effectuation and causation should not be considered as independent but rather as co-dependent in the theory of effectuation due to "the overlapping and intertwining over different contexts and decisions" (Sarasvathy, 2001, p.245).

Sarasvathy (2001) has refined the theory of effectuation with multiple academics which has helped to reveal interesting dynamics of the theory that may not have been previously thought of. Sarasvathy and Dew (2008) debated over-trust in effectuation theory during entrepreneurship. Their findings suggest that several players are needed to notice that it may be rational to adopt trusting behaviour to bring certain opportunities to life (Sarasvathy & Dew, 2008). Sarasvathy, Menon and Kuechle (2013) further expanded effectuation to include entrepreneurial success and failure. Within a firm, firm success or failure does not determine the success or failure of entrepreneurial activities within those firms; instead entrepreneurs can use firms as instruments to increase their own success (Sarasvathy et al., 2013). Sarasvathy, Kumar, York and Bhagavatula (2014) then provided an additional element to effectuation theory in the form of international entrepreneurship. Sarasvathy et al. (2014) suggested that integrating the effectuation model and international entrepreneurship means that entrepreneurs are equipped to be more creative with the use of limited resources, and have the ability to exploit unexpected contingencies.

In the more recent study, effectuation theory reaches a more evolutionary phase. Read, Sarasvathy, Dew and Wiltbank (2016) identified new possibilities to expand the theory of effectuation to determine how entrepreneur's creativity and actions informed by the past are connected to the effectual process and how this may vary according to context. This evolution may be interesting to test given the unique and relatively unexplored context on South African townships – and more specifically, entrepreneurs within construction supply chains within those townships.

Although the theory of effectuation has been a focal point in many studies over the past two decades, the theory has had a fair amount of critiques throughout its existence. McMullen and Shepherd (2006) argued that the theory of the entrepreneur needs to be considered using a model that conceptually defines entrepreneurial action to measure entrepreneurship at an individual level while applying systems-level theories. They develop a two-stage conceptual model that links knowledge and motivation to entrepreneurial action and their results show that the conceptual model provides a means of side-stepping philosophical theories while examining true entrepreneurial action (Mcmullen & Shepherd, 2006). Arend, Sarooghi and Burkemper (2015) further argued effectuation to be ineffectual in the theory of entrepreneurship by using the 3E formal framework to test the effectuation theory of entrepreneurship. The test revealed a set of comprehensive findings that suggest several failures in the theory that are presented in Figure 1.

**TABLE 1**  
**Theory-Building Criteria and Assessment of Effectuation As a New Proposed Theory**

Stage	Criteria	Assessment Issues	Recommendation	D#
Experience	Built on existing literature	<i>Some failure:</i> lacks reference to preexisting work on bricolage, experimentation, options thinking, and risk management; thus, fails to prove novelty	Build on existing constructs and ideas; compare and contrast with previous work; prove added value with new insights	4 1
	Built on valid observation	<i>Some failure:</i> low N; questionable definition of an "expert"; some lab-based scenarios not aligned with findings; no comparison group in original study	Do more studies of the process in the field; larger N; prove robustness of "expert" definition; use a valid comparison group	4 5
Explain	Units: • Comprehensive • Parsimonious	<i>Some failure:</i> missing many important units—rivals, substitutes, institutional players, and so on	Add missing units to be comprehensive to the focal phenomenon; add to precision of definition of units, especially outputs, like "artifacts"	2 4
	Laws clear (about unit interaction)	<i>Some failure:</i> provision of how units interact, but not why; directionality problematic for several laws (either ambiguous functional relationship or relationship simply assumed without explanation)	Add explicit directionality to laws and explain the relationships; expand on how "minimum" levels of a unit's characteristics are generated or guaranteed in the process	3 4
	Boundaries specified: Precise rules	<i>Some failure:</i> no precise landscape defined (to test alternatives against); no clear performance metric given; aimed at multiple levels of analysis	Specify the competitive landscape with mathematical precision; specify focal dependent variables, sequences, outcomes, and other issues of interest	2 4
	System states exist	<i>Failure:</i> no stable states exist	Specify at least one interim stable state	
	Propositions consistent with model	<i>Some failure:</i> propositions provided are not the three required types; statements of contrast to strawman of causality provided instead	Specify independent or stand-alone propositions (of all three types); highlight unintuitive and counterintuitive propositions	3 2
	Assumptions reasonable	<i>Some failure:</i> flaws with entrepreneur's abilities, nonpredictive control, means-driven action, affordable loss, value creation, and sustainability	Clarify or fix flaws, especially with the span of prediction, liabilities, and bounded rationality of the individuals involved	5 1 2
	Logic: • Causality explicit • No tautologies • Coherent	<i>Some failure:</i> lacking explanation of why laws among units work; syllogism (many laws are true by context); effectuation is not a single construct or process	Explain causality for the main laws; delineate what is not true by context; either find coherence in the concept or split up the process into coherent parts	1
Establish	Empirically testable	<i>Indeterminate:</i> untestable because of a lack of system states and some language, yet has been tested in literature to some degree in contrast-type studies among agents	Propose less "problematic" tests; provide falsifiable predictions (or refrain from referring to this as a "theory")	1,2 3,4

*Figure 1: Summary of critiques associated with effectuation theory using the 3E framework (Arend et al., 2015, p.635).*

Of the ten failures identified in Figure 1, three of them are noteworthy departure points for the current study. These three critiques include the lack of exploration in additional entrepreneurial theories such as bricolage, no comparison group to test effectuation and no adequate measure of effectuation performance within a defined context (Arend et al., 2015).

Given the above critique and the light that has been shed on effectuation theory, more in-depth analysis needs to be carried out into theories of entrepreneurship that are closer to the current study. This has been carried out through in-depth analysis into the resource-based view of entrepreneurship, how academics view entrepreneurial bricolage together with other theories of entrepreneurship, and a comprehensive look into the views of academics on bricolage specifically.

### 2.2.3 Resource-based View

In order to understand the mechanics of resource-based theory, the origins of the theory need to be understood. Upon inception of the resources-based theory, Barney (1991, p.117) presented an interesting view of a firm by positing that sustained competitive advantage is obtained when the firm maintains control over resources that are “valuable, rare, imperfectly imitable and not sustainable”. Although this presents an interesting perspective on resources that are needed to maintain a sustainable competitive advantage, the theory is still only focused on a firm perspective. However, ten years later, Barney, Wright and Ketchen (2001) joined to present a refined perspective of the resource-based view in the form of a breakdown where the resource-based view is applicable in the different areas of a firm. Although much of what the theory details is still firm-based, part of this breakdown was the inclusion of small firms in the form of entrepreneurship as a component that is affected by the resource-based view (Barney, et al., 2001). This outcome then allows the resource-based view to begin to act as a lens from which entrepreneurial literature can be developed.

Taking a resource-based perspective on entrepreneurship has helped many academics contribute to a different perspective of entrepreneurial theory. Rangone (1999) identified the importance of three basic capabilities needed by an entrepreneur to maintain a competitive advantage. These included capabilities encompassing innovation, production and market management (Rangone, 1999). However, what was not considered in her findings was the actual resource of the individual entrepreneur and the attributes needed to gain a truly competitive advantage. Alvarez and Busenitz (2001) and Castanias and Helfat (2001) developed methods to be able to integrate the role of the entrepreneurial skills required together with other important resources needed to create a sustained competitive advantage. An additional finding that is worth mentioning under the resource-based view is the work done by Prashantham and Dhanaraj (2010) and Yli-Renko, Autio, and Tontti (2002) that debates the differences between quantity and quality of resources available to an entrepreneur and whether it



is quality or quantity in resources that gains them a competitive advantage. Sarasvathy et al. (2014) effectually solve this debate as entrepreneurs who use an effectual process are not concerned about the attributes of the resources but more concerned about the way in which resources are utilised.

A noteworthy study that contributes to the current study is research conducted by Sequeira, Gibbs and Juma (2016), which used a resource-based view to understand the elements that make a venture successful. Their research was carried out in the context of woman entrepreneurs in a developing economy where their findings showed that “success is temporally and contextually situated and therefore female entrepreneur’s behaviour and firm performance will be influenced by their countries prevailing institutions and environment” (Sequeira et al., 2016, p. 26). They proposed two models which detail the individual and institutional or environmental factors that are needed to contribute to woman entrepreneur’s success. These two models are documented in Figure 2.

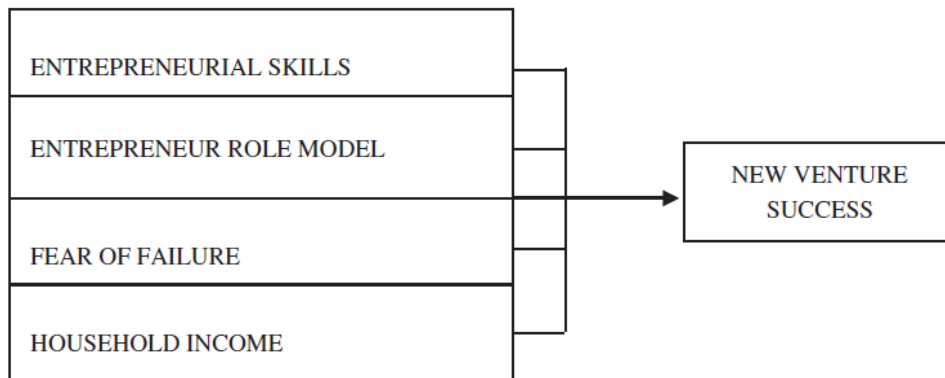


Figure 2: Individual factors influencing woman entrepreneur’s venture success in developing countries (Sequeira et al., 2016, p. 4).

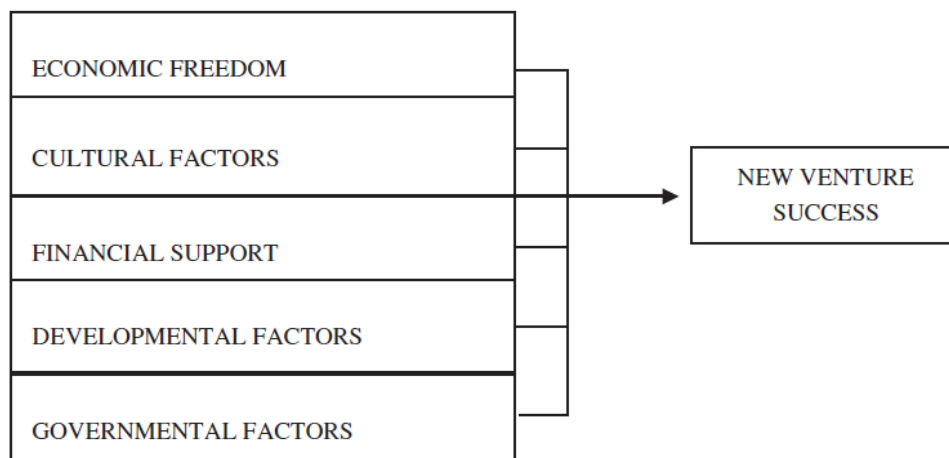


Figure 3: Environmental/Institutional factors influencing woman entrepreneur’s venture success in developing countries (Sequeira et al., 2016, p. 4).

Sequeira et al. (2016) confirmed parts of their proposed models as results showed that female entrepreneurs access to resources was not equal to grow firm performance and as a result found that social capital, government programmes, household income and respect for entrepreneurship in the country had the most influence on venture success. Additionally, environmental conditions that were discovered in developing countries where not similar to those found in developed countries and for this reason relationships known to have a positive impact in developed countries may be negative in developing countries. Conditions such as different cultures, entrepreneurial education access, and the status of woman may have been treated differently (Sequeira et al., 2016). Although the above findings are concentrated specifically among woman entrepreneurs, the findings here are still valuable for the current study which was conducted on entrepreneurs in a developing market.

The above resource-based view has been covered in significant detail. This view on entrepreneurial theory proves to be fitting as one of the theoretical lenses through which to conduct the current research. The resource-based view coined by Barney (1991) and refined by Alvarez and Busenitz (2001); Castanias and Helfat (2001); Prashantham and Dhanaraj (2010) and Yli-Renko et al. (2002) creates a well-defined platform to focus the current study. Additionally, the combination of context and a resource-based view in a developing country offered by Sequeira et al.(2016) offers the current study a similar setting for which the resource-based view of entrepreneurship has been tested. The following section will detail the second theoretical lens through which the current study was based: entrepreneurial bricolage.

#### **2.2.4 Entrepreneurial Bricolage**

A review of entrepreneurial literature has been conducted to outline the various theories and views on entrepreneurship that exist. The review now moves on to delve into the theory of entrepreneurial bricolage which forms the second theoretical base to ground the current study. There has been significant research done on the effects of effectuation and causation in entrepreneurial literature, however as seen in the alternative views documented above, effectuation is beginning to converge with findings of entrepreneurial bricolage. The significance of the theory of entrepreneurial bricolage is fundamental to the current study given that it provides a grounding theory to test the assumptions of innovation within the impoverished business environment of the township construction supply chain of South Africa.

Baker and Nelson (2005), considered the foundation builders of bricolage research, presented a formal definition and process model of entrepreneurial bricolage that describes how entrepreneurs create ventures from little resources due to the discovery and use of physical, social and institutional opportunities in a resource-constrained environment. They suggested that entrepreneurs who are confronted with poverty-stricken business environments and conditions have three alternatives: 1) to seek resources outside of the firm's domain; 2) to avoid new challenges by continuing the business process, downsizing or closing down; or 3) to take on a process of bricolage by taking on resources at their disposal to solve new problems or grasp new opportunities (Baker & Nelson, 2005). If the entrepreneur decides to take on a bricolage approach, they are left with three options in the bricolage domain as detailed in Figure 4.

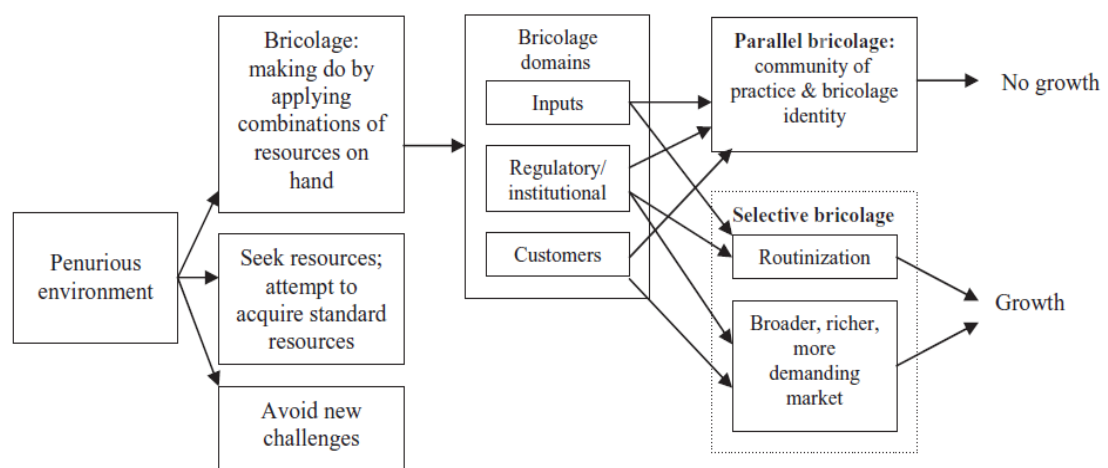


Figure 4: Options for entrepreneurs in a resource-constrained environment (Adapted by Fisher, 2012, p. 1028, from Baker & Nelson, 2005).

The three bricolage domains can further be broken down into five subsections. According to Baker and Nelson (2005), these five sub-sections consist of bricolage in the form of:

1. *Physical inputs* – give new use value to forgotten or undervalued materials.
2. *Labour inputs*– including customers and suppliers.
3. *Skills inputs* – using amateur or self-taught skills to conduct business.

4. *Customers or markets*—the result of products that would not be available without bricolage.
5. *Institutional and regulatory environments* – entrepreneur does not allow regulation and standards define what is possible, they are not seen as constraints.

With regards to parallel and selective bricolage, Baker and Nelson (2005) defined these as an entrepreneur who can poses two identities; where the former stalls growth due to multiple domain bricolage activities, while the latter improves growth due to bricolage in fewer domains.

Fisher (2012) offered a holistic view and critical examination of different perspectives in entrepreneurship literature that contribute to an entrepreneur's behaviour when creating new ventures. The view of Fisher's research begins by bringing together multiple views of entrepreneurship theory that, when combined, highlight the behavioural differences and similarities that as a result contrast or complement each other (Fisher, 2012). Fisher (2012) firstly discovered that opportunity recognition should be orientated according to the resources available and under control of the entrepreneur which will more likely lead to entrepreneurial action. Secondly, entrepreneurs who are more active in their role as an entrepreneur and who engage in experimentation with customers overcome the difficulties when starting a venture more easily than those who do not (Fisher, 2012). Additionally, building a base of related parties around the venture will benefit the entrepreneur as they gain quality feedback as well as referral and word-of-mouth advertising (Fisher, 2012). Finally, Fisher (2012) showed that too many resources in an entrepreneurial venture dulls creativity of entrepreneurs and as a result, entrepreneurs who operate in a resource-constrained environment venture will be more successful.

In line with Fisher's findings, Servantie & Rispal (2018) also contributed to the field of entrepreneurial theory by providing insights into social entrepreneurship and how combining causation, effectuation and bricolage changes over a start-up's life cycle. This was done to develop a conceptual framework to determine whether entrepreneurs mixed causation, effectuation and bricolage throughout the entrepreneurial process (Servantie & Rispal, 2018). The conceptual framework presented in Figure 5 provides a complete visual model and explanation as to how the three main entrepreneurship theories have been combined and interact with one another during a ventures operation.

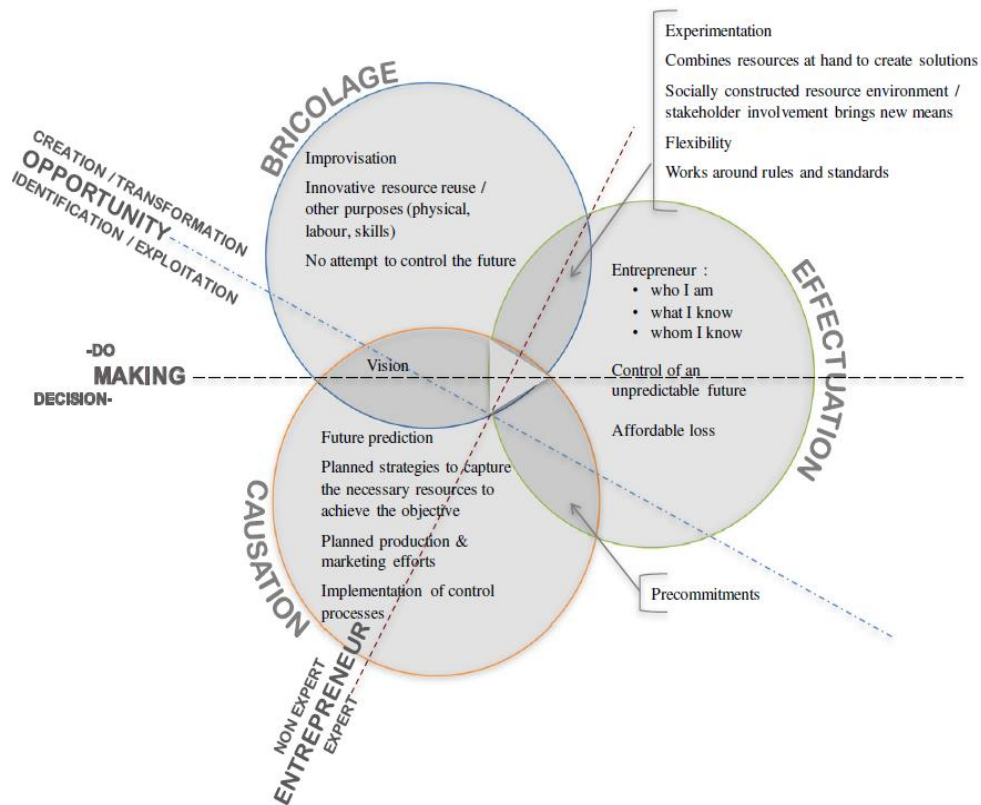


Figure 5: Conceptual framework of causation, effectuation and bricolage in an entrepreneurial venture (Servantie & Rispal, 2018, p. 321).

Servantie and Rispal (2018) explained the conceptual model as follows:

1. *The opportunity axis*: The axis represents the relationship between bricolage and effectuation. These two relationships suggest that opportunities do not exist objectively but instead are created through entrepreneurial action and interaction with multiple stakeholders, whereas causation is the ability to identify opportunity using alertness.
2. *Entrepreneur's expertise axis*: The axis reflects that entrepreneurs who use bricolage as an approach are generally inexperienced entrepreneurs while effectuation is considered to be associated with expert entrepreneurs. Bricolage takes on a creative, innovative and sometimes chaotic approach to entrepreneurship while effectual approaches take on a rule-based approach.
3. *The making axis*: This axis forms the relationship between bricolage and causation. The commonality between the two approaches means that each shares a vision; however, bricoleurs tend to approach entrepreneurship with a "make-do" attitude. On the other hand, a causal approach will follow a decision-making process during venture operations. In both approaches, the resource

environment and developing means are socially constructed with multiple stakeholders in entrepreneurial ventures. Here, entrepreneurs are not restricted despite rules or standards that may exist in the business environment.

In the study conducted by Servantie and Rispal (2018) it was revealed that all three entrepreneurial approaches partially overlapped, and occurred sequentially and concurrently to one another while no one approach proved more effective or efficient than the other. Among each social entrepreneurial case that was analysed in the study, the three approaches emerged as entrepreneur categories that fitted into the conceptual model. These categories came in the form of the following: 1) *social effectuators* who interacted with stakeholders to gain new opportunities; 2) *social experts* in causation who were proficient at replicating entrepreneurial ventures elsewhere; and 3) *social bricoleurs*, creative thinkers who make do with the resources at their disposal to focus on solving a problem that is previously unidentified. These three entrepreneurial categories and their capacities are needed by entrepreneurs as each approach limits the risks that the others carries (Servantie & Rispal, 2018). Given the above conceptual framework, it is clear to see how the effects of each entrepreneurial theory integrates into entrepreneurial bricolage, as well as the importance that each has in conjunction with one another when applying these capabilities to entrepreneurial ventures. As a concept, bricolage has appeared to be researched in further detail in a variety of different contexts. These academic's literature will be analysed to gain richer insights into the theory of bricolage itself.

A challenge facing the informal economy is the lack of resources entrepreneurs have at their disposal. In spite of this, resource constraints can sometimes act positively as it triggers radical innovation (Keupp & Gassmann, 2013). Keupp and Gassmann (2013) provided evidence that suggests knowledge resource constraints and financial resource constraints bring about radical innovation for entrepreneurs in an informal economy setting. Linna (2013) concurred, explaining that entrepreneurs in resource-scare environments are more motivated and likely to achieve success. The term "creative-bricoleurs," describes entrepreneurs who refuse to be constrained by limited resources and instead decide to "make something out of nothing," (Linna, 2013, p.16).

Critics of the theory of bricolage have presented findings that have questioned its effectiveness and how bricolage may cause more damage than benefit to an entrepreneurial venture. Kickul, Griffiths, Bacq and Garud (2018) critiqued bricolage from a social entrepreneur perspective where they explored bricolage behaviour in the

entrepreneurs and how this creates innovation during an entrepreneurial venture. They also investigated the situations in which bricolage may begin to hamper the success of entrepreneurs' strategy for innovation (Kickul et al., 2018). Results showed that when levels of bricolage were too high in the sample, it hampered the development of innovation which attracted untraditional resources or entered neglected markets with no scale (Kickul et al., 2018). Similarly, Guo, Zhang and Gao (2018) contested bricolage in the context of more formal small-to-medium enterprises (SMEs), suggesting that these companies benefit less from bricolage due to more formalisation within the structure of the entrepreneurial ventures that are created. If companies rely solely on bricolage as a form of innovation, they may find it difficult to find adaptive solutions for opportunity exploration (Guo et al., 2018). Their results found that the bigger the firm gets (i.e. medium-sized enterprises), the weaker the influence of bricolage on opportunity performance, thus bricolage effectiveness may vary depending on the context of the situation (Guo et al., 2018). In addition, bricolage was found to have a two-sided effect which included extrusion of standard resources, and it also reduced the quality of the firm's already existing capabilities.

In essence, provided an entrepreneur has a mind-set and belief towards entrepreneurially making a success out of the resources available, entrepreneurial bricolage will emerge. As seen above, scholars have tested bricolage under limited resources and have found strong evidence that supports that entrepreneurs perform well and succeed with the resources available to them. Although bricolage has been proven in a variety of cases, its effectiveness has also been questioned under certain conditions. Given these results, an interesting question emerges as to whether entrepreneurial bricolage extends beyond just the entrepreneur, but through the entire supply chain within a township economy. What is more, determining whether bricolage plays a role in inspiring innovation to develop and enhance business models and create and manage a construction supply chain in the township economy may lead to an interesting discovery.

### **2.3 Business Models and Business Model Innovation**

Although at times business models are not articulated as an important factor to consider in the makeup of a business, all companies have some combination of resources that make up a business model. Zott and Amit (2010, p. 217) conceptualised a business model as the "activity system that enables a firm, in concert with its partners, to create value and also to appropriate a share of that value". In line with this understanding, a business model must provide businesses with a defining manner from

which value can be derived for the customer, where the value they realise is translated into profit for a firm (Teece, 2010). This being said, business models as a construct still lacks theoretical grounding from a business perspective and needs to be explored further in order to develop a working definition that distils this construct in a variety of contexts (Teece, 2010). For this reason, business models need to be viewed holistically as a conceptual framework instead of viewing these complex and unique models as rigid financial type structures (Teece, 2010; Zott & Amit, 2010). In line with these views, Baden-Fuller and Morgan (2010) tested the conceptuality of business models by determining the usefulness and the players that find business models to be useful in the success of a business. Their work classifies the usefulness of business models into taxonomies that most often represent individual firms' business models (Baden-Fuller & Morgan, 2010).

### **2.3.1 Business Model Design and Development**

Furthermore, together with vast research completed on understanding the components that make up business models and how these business models allow businesses to succeed, business model design and development is at the forefront of available literature. Achtenhagen et al. (2013) identified three critical capabilities that help explain sustained value creation in business model development and design. These three capabilities include a "direction by firms to experiment and exploit new opportunities, a balanced use of resources and coherence between stakeholders to complete strategising actions" (Achtenhagen et al. 2013, p. 1). Likewise, academics in the field further suggest that business model design be viewed from an activity systems perspective (Zott & Amit, 2010). Zott and Amit (2007, 2010) suggested that an activity systems perspective takes into consideration business model design parameters which include activity systems content, structure and governance.

On the contrary, Dmitriev, Simmons, Truong, Palmer and Schneckenberg (2014) provided an alternative sequential and more interactive perspective to business model design and development. Instead of viewing business models as a linear sequence of activities that creates value, Dmitriev et al. (2014) suggested that business model development follow a more interactive combination of connections that efficiently conceptualise value when developing a business model. In addition, part of the literature around business model design examines how proper design of a business model impacts the performance of a firm (Zott & Amit, 2007). In order for a firm to improve its performance, owners should focus on the novelty of business model design where innovation is not only limited by the combination of resources controlled, but also



mobilises the use of partners, suppliers and customers in business model development (Zott & Amit, 2007). Another noteworthy concept unearthed in literature is the idea that business models designed for specific contexts may not always be successful and should adapt accordingly.

Landau, Karna and Sailer (2016) provided an interesting case where high growth potential in developing markets attracted developed country's business models. For this reason, firms from developed markets need to re-think their business models to suit township consumers' needs and away from a western customer mind-set that works under efficient institutional settings (Landau et al., 2016). Their findings suggest that firms entering emerging markets from developed markets must adapt their business models to unique and different market structures (Landau et al., 2016). These findings present a noteworthy departure point when identifying business model designs in a South African township setting within the construction supply chain. This helps to understand whether and how this uniqueness of context is a downfall or a competitive advantage for these businesses in the construction supply chain.

Teece (2010) explained that a business model developed by one company can easily be adapted to work in different spaces of business. For this reason, a business model can be considered as more generic than a business strategy and so to improve a business's competitive advantage and protect the business model design, combining a business model with strategy is important (Teece, 2010). Adner (2016) provided an alternative view in identifying ecosystems as a construct for business models and strategy. A successful ecosystem is composed of multiple firms in concert with one another, where an ecosystem strategy can be understood as the business models of each firm contributing to that of a focal firm (Adner, 2016). This combination creates a synergistic relationship between multiple firms in an ecosystem that enhances the success of each other firm.

### **2.3.2 Types of Business Models and Strategy**

Business model types tend to be associated with descriptions of taxonomy, according to Baden-Fuller and Morgan (2010). Different kinds of behaviour observed in different firms allow for business models to be classified accordingly and are then given a nutshell description alongside the firm's name (Baden-Fuller & Morgan, 2010). An example to illustrate this is when individuals classify a business model according to the name of the firm, for instance the "Nespresso business model" or "Gillette business model," instead of the "razor blade business" model as it is more formally known. This is most likely due to the fact that when people talk about business models, a real

business example is preferred in order to understand the business model more clearly. Alternatively, some scholars prefer to view types of business models from an open systems perspective. Frankenberger, Weiblen and Gassmann (2014) suggested that open business models can now be differentiated into four basic types of open business models due to an increased networked and collaborative economy. These business models are considered as open innovation, open research and development (R&D), full open business models, and open business architecture (Frankenberger et al., 2014). Berglund and Sandstorm (2013) disagreed with the open systems perspective. Under the open systems perspective conditions, firms are forced to act under restricted conditions and tend to behave as actors that only provide resources to other firms in the open system (Berglund & Sandstöm, 2013).

Strategy in business model theory has also been viewed under a tactical and first mover advantage lens. From a tactical perspective, Casadesus-Masanell and Ricart (2009) presented a conceptual model that both separates and relates business model theory and strategy. Casadesus-Masanell and Ricart (2009) conceptualised business models and strategy as related but are different concepts tactically. Their views suggest that “business model is the direct result of strategy, but is not strategy itself” (Casadesus-Masanell & Ricart, 2009, p.25). Tactical iterations have well-defined rules that are constrained by business models, while strategic interactions are more complex due to rules not being well-defined and the choices between strategic payoffs and strategy being much more complicated than tactics (Casadesus-Masanell & Ricart, 2009). Furthermore, Markides and Sosa (2013) recognised the importance of first mover advantage as fundamental to business models. The business model used by pioneers, the business model that late entrants adopt, and the business model pioneers use to combat attacks contributes to the success or failure of a business (Markides & Sosa, 2013).

Unknowns in the field of business model theory exist among authors and academics. Zott, Amit and Massa (2011, p. 25) suggested that “scholars need to develop the theoretical foundations of the business model, and shed light on its conceptual distinction from other related concepts such as new organisational forms, ecosystems, activity systems, and value chains or value networks”. Additionally, Wirtz and Daiser (2017) explained that research on business models should aim to detail the sustainability problem of business models by gaining feedback from stakeholders in different contexts.

### 2.3.3 Business Model Innovation

Together with business model literature, it is important to explore innovative business modelling theory when looking to explore how innovation can be adapted to create and manage more efficient construction supply chains within South African townships. Ismail, Klein and Ansell (2012) suggested that there is evidence of formal business in the South African economy engaging with the poor. The characteristics that these business models possess create and encourage inclusive growth, and can be further explored to determine how effective and impactful these models are in the context of the township economy (Ismail et al., 2012). Zott et al. (2011, p.25) concurred when they suggested that business model innovation is moving towards offering a more “systemic perspective” on how to “do business” comprising “boundary-spanning systems thinking”, maintaining value creation and capture as a focus. Furthermore, Wirtz and Daiser (2017) have contributed to business model innovation (BMI) by creating a conceptual framework which enhances understanding about the key elements and dimensions that BMI should possess, which further conceptualises details into the BMI framework and unearths the supply implications for science and management. The framework is included in Figure 6 and is used a theoretical principle together with entrepreneurship theory in the current study to analyse the level of business model innovation in the township construction supply chain.

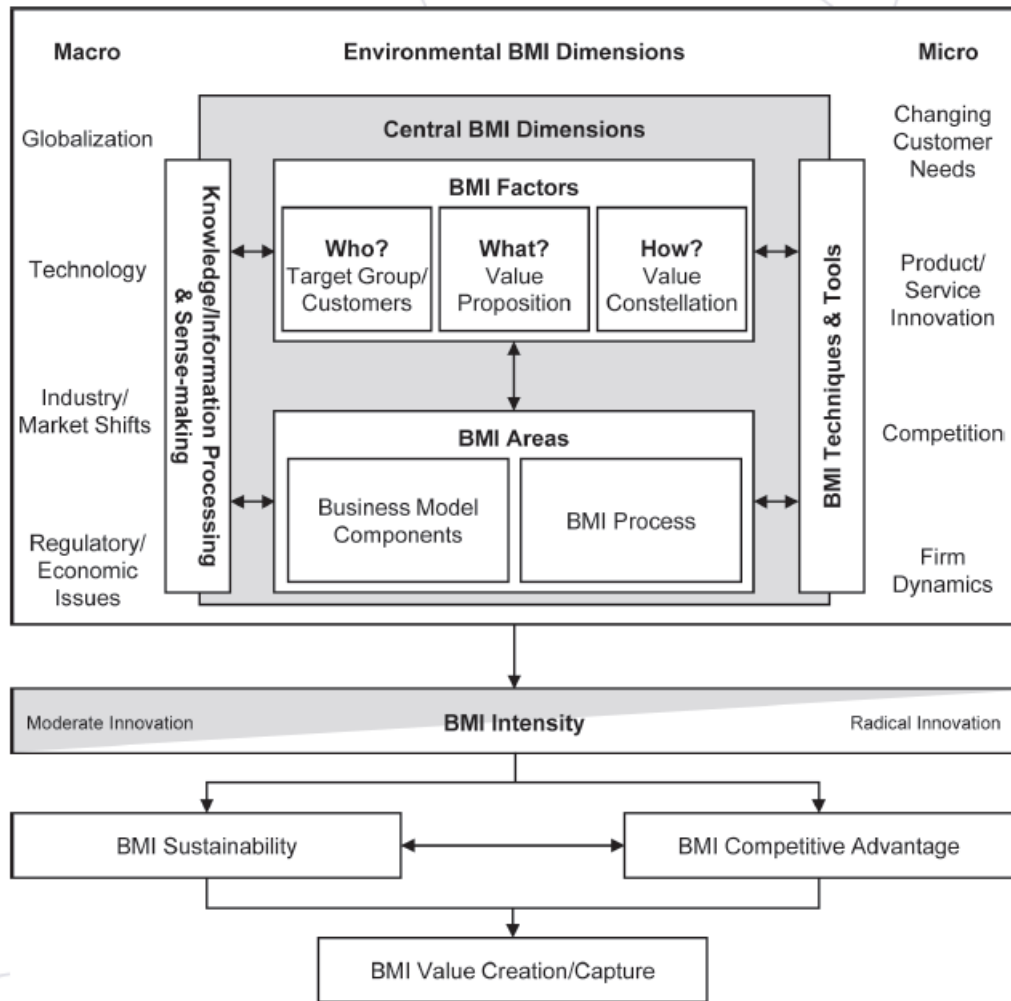


Figure 6: Integrative conceptual BMI framework (Wirtz & Daiser, 2017, p.25).

## 2.4 Supply Chain Theory

Entrepreneurship theory helped to develop a strong theoretical framework which grounded the current study. The rich literature that exists around entrepreneurial theory has unearthed the resource-based view as well as bricolage as most fitting to this research given the resource-constrained business environment and context in which the current study was focused. Supply chain theory adds to the body of knowledge for the current study as the construction supply chain is studied in detail. It is thus vital that supply chain theory is correctly documented and understood especially within the construction sector. The aim of this section is to understand the different dynamics that exist within a construction supply chain, delving into the mechanics of both formal and informal structures in both developed and developing economies.

### 2.4.1 Overview

According to Lönngren, Rosenkranz and Kolbe (2010), formal construction supply chains are generally characterised by strong strategic alliances to accomplish building

projects. Their findings suggested that the strategic alliances among network of builders and trade contractors are successful due to “central coordination among the partners employing decentralised task management; application of an appropriate IT solution; and mutual trust among the cooperating partners” (Lönngren, Rosenkranz & Kolbe, 2010, p.409). Furthermore, Papadonikolaki et al. (2017) suggested that supply chain management (SCM) and business information modelling (BIM) are sources of innovation that encourage businesses to manage the complexities that the construction supply chain presents. In line with complexity of the construction supply chain, Segerstedt and Olofsson (2010) suggested that construction supply chains are mostly local and volatile due to the prolonged period of construction projects. Contributing to the long lead times of the construction product is the vast degrees of specifications that occur before construction begins (Segerstedt & Olofsson, 2010). Ke, Cui, Govindan and Zavadskas (2015) added to the understanding of construction supply chains, identifying that co-operation among players has a positive significant affect on the performance of construction supply chains. In line with construction supply chain performance, Sundquist, Gadde and Hulthén (2018, p.49) suggested that “logistics operations at the construction site and operations undertaken before building materials land at sites” is an important contributor to the construction supply chain performance.

Alternatively, a more holistic view of construction supply chains was provided by Green, Fernie and Weller (2005). Their findings suggested that business sectors often forget to embed the contextual nature of management practice, and for this reason “fail to recognise important symbiotic relationships between supply chain management and the broader dynamics of context” (Green et al., 2005, p.579). Their views push the limits of literature in construction supply chain to find that the construction sector is heavily localised and has experienced many years of fragmentation (Green et al., 2005). Höök, Stehn and Brege (2015, p.346) concurred as their findings proved that the construction industry’s “idiosyncrasies” amplify customer-related difficulties as fragmentation amplifies the difficulties of connecting with external factors outside of the construction supply chain.

#### **2.4.2 Formal Supply Chains**

Despite their fragmentation and localisation problems, formal construction supply chains need to be understood on the basis of flow and how that flow works from raw material suppliers to the end consumer at the end of the supply chain. Bildsten and Manley (2015) and Kalian et al. (2004) conducted research into the purchasing practices in the construction supply chain. Bildsten and Manley (2015) provided a

framework for construction company's purchasing situations, where classifying the purchasing situation, assessing the level of complexity, identifying how active roles, and involvement in the supply chain contributes to project success. Their findings suggest that the stages in the purchasing process are of greater value if coupled with strong long-term relationships among the actors in the construction supply chain (Bildsten & Manley, 2015). Kalian et al. (2004) conducted their research specifically in the cladding industry of the UK construction sector and developed a model to understand the attainment process within the industry. Findings show two distinct supply chains where the first represents relationships between systems owners and associated suppliers of the materials, and the second represents embracing design, detailing, fabrication and installation (Kalian et al., 2004).

### 2.4.3 Informal Supply Chains

Despite the complexities identified in the formal construction supply chain above, the literature reviewed has provided an in-depth departure point for which an informal construction supply chain can be understood. Lizarralde and Root (2008) identified that the formal low cost housing market in South Africa is inefficient. They concluded that the informal and formal sectors are divided by a housing gap, which correlates to the differences in housing prices between affordability level and product of maximum value for the informal sector (Lizarralde & Root, 2008). Furthermore, the value of informal sector product offerings becomes distorted due to the induced formal sector overpowering them in township economies (Lizarralde & Root, 2008). In line with the above findings, Khan and Kazmi (2008) and Srivastava (2006) conducted similar studies in Pakistan and India, which are both emerging economies with informal sectors. Logistics and supply chain management in both cases were influenced by regulatory and economic environment, competition with other supply chains and quality of infrastructure (Khan & Kazmi, 2008; Srivastava, 2006). Informal construction supply chains in emerging markets are thus also complex systems that are made up of complexities relevant in unique contexts. However, what differs from the formal sector is that the informal construction supply chain has resource constraints that heavily impact its efficiency.

Petersen, Charman and Kroll (2018) provided an interesting perspective on supply chains in South African townships in the informal food-services industry. Their findings showed that businesses in the food-services supply chain are highly reliant on the close proximity suppliers and local suppliers selling to a small community base (Petersen et al., 2018). Their findings presented an interesting opportunity to test

elements of the food-services supply chain in a different supply chain setting within the same context of South African townships. They suggested that “supply chains are short and linked to formal agriculture and wholesale sectors” (Petersen et al., 2018, p.87). Kedir, Williams and Altinay (2018) conducted further research on informal economies from a services perspective to assist in understanding where services fit in, and the role services play in supply chains within the informal economy. Furthermore, Beneke et al. (2011) acknowledged that a relatively small sample was used during their research on the actors within the informal economy. Their recommendation was that future research into the actual supply chain of the township economy be analysed and broken down to understand what the exact complex dynamics and factors that entail a supply chain in a South African township (Beneke et al., 2011).

## **2.5 South Africa’s Formal and Informal Economy**

### **2.5.1 Informal Sector**

Rogerson (2000) defined South Africa’s township economy as a business environment in which entities are not registered for tax purposes. Specifically in the context of South Africa, the informal economy can be split into two separate categories. These categories consist of businesses that are survivalist in nature and those that are considered to be micro-enterprises and generally exist for growth (Rogerson, 2000). Rogerson (2000) continued his work in the exact region of South Africa where this study took place (Johannesburg, Gauteng) and he considered it to be the most important city for the country, economically. The modern urban township economies of Johannesburg have created an interesting value chain centred on side-walk activities including “flea-markets, hawkers, taxi drivers, street barbers, shoe shiners, home-based enterprises, electronics stores, supermarkets, retail outlets, liquor outlets, motor vehicle repair shops, hairdressers and many formalised ventures at fixed business premises such as small scale brick manufacturers” (Rogerson, 2000, p.398). Rogerson (2000, p.396) further explained that the composition of the informal economy is generally “46% retail, 31% services and 23% manufacturing”. The smallest proportion of business activity is manufacturing and thus proves to be a concern for township economies due to an underdeveloped nature of goods being manufactured (Rogerson, 2000). In addition, Akintola and Akintola (2015, p. 379) described South Africa as an “upper middle income country” that has become home for many migrants looking to enter South Africa in hopes that they will find better economic prospects compared to their home countries. However, the sad reality is that these migrants become entangled in false hope whereby they end up in the township economies of South Africa, often in worse conditions compared to their home countries (Akintola& Akintola, 2015). This

helps explain the main demographic of business owners and shopkeepers found in township economies and a large chunk of South Africa's informal sector as a whole.

### 2.5.2 Formal Sector

On the contrary, South Africa's formal economy provides for an interesting comparison in the findings of Rogerson (2000). According to Fedderke (2018), South Africa's formal economy is closely associated with the structure of developed countries as compared to other emerging markets. South Africa's formal economy is sectoral in nature where the economy behaves like an economy in a steady growth state, but is still faced with a strong developmental impulse (Fedderke, 2018). Furthermore, South Africa's best performing sectors include well-developed and world class fin-tech, legal, communications and transport sectors (PWC, 2017). The formal business environment of South Africa is favourable and supports South Africa by granting the country a status as a regional economic powerhouse (PWC, 2017). A main reason supporting a well-developed business environment is that South Africa is a low cost environment in which to start a business, and in turn means that entrepreneurs can respond to market opportunities quickly as they arise (PWC, 2017). Alternative views put forward by Jooste, Liu and Naraidoo (2013) suggest that although the South African formal sector is well developed, the South African economy is characterised and often dominated by fiscal policy. This means that the formal sector is at times constrained by lower boundary policy rates where fiscal expenditure shocks have a negative effect on an economy's output (Jooste et al., 2013). Corruption is considered rife in South Africa's formal economy and also negatively impacts each and every sector in the economy. Furthermore, little connection is observed between formal and informal sectors in South Africa, although recent efforts from the formal sector are beginning to shift the mind-sets of formal players to further understand the complexities and opportunities South Africa's informal economy presents. Be this as it may, South Africa's formal economy is still well structured and creates an environment on which the country is able to thrive.

## 2.5 Conclusion

This chapter has provided a review of literature to gain understanding of entrepreneurship theory, business models and business model innovation, supply chain theory as well as South Africa's formal and informal sector. From the review, it has been found that a resource-based view, entrepreneurial bricolage and business model innovation literature forms the main theoretical base of the current study. Business model design and business model innovation are intrinsically related and



often happen at the same time in reality. Business models and business model innovation have been thoroughly researched from a formal business perspective, however gaps still exist in understanding business models and their innovation constructs within the South African township economy. Understanding construction supply chains as well as South Africa's formal and informal economy adds further depth to the current study in the context of the township construction supply chain. The complexity of construction supply chains has emerged consistently within construction supply chains but has not been thoroughly researched in the context of South African townships. From an informal township setting, it has been seen in the literature that no in-depth research has been conducted around business model innovation within a specific supply chain and how the players within the chain affect the innovation within it to improve efficiency.

The following chapter will summarize the research questions to follow in the current study. These research questions will be used as a guide to gather qualitative information on the township construction supply chain elements. The questions will be structured as a primary research question with two sub-questions to delve deeper into the primary research question.

## Chapter 3: Research Questions

### 3.1 Introduction

Understanding what motivates entrepreneurs, how they react under resource-constrained situations and the effect this has on their broader business environment are all potentially key topics to be explored. These contradictions have opened possibilities in understanding business model innovation specifically, in the context of the construction supply chain of South African townships.

The following primary research question guided the study and were explored together with three sub questions:

### 3.2 Primary Research Question

**In what ways do contextual and resource constraints address the level of business model innovation within construction supply chains in South African townships?**

Using a resource-based view and entrepreneurial bricolage as a conceptual framework, the aim of the primary research question was to determine the elements of contextual and resource constraints to develop the entrepreneurial orientation found among township construction entrepreneurs, which informed either a high or low level of business model innovation within township construction supply chains of South Africa. The question aimed to help clarify and confirm whether contextual and resource constraints are present within the township construction supply chain and if these constraints do in fact create an environment that fosters entrepreneurial bricolage in the form of business model innovation.

Furthermore, the primary research question also aimed to document how business owners in South African township construction supply chains consider business model innovation. This ultimately rounded off the primary research question by identifying whether business model innovation is a consideration when conducting business in the construction supply chain of the township environment. It was predicted that if innovation was found in this environment, the actual innovation elements found in the sample would also be documented to establish the uniqueness and level of business model innovation that exists.

### 3.2.1 Sub-Question 1

**What are the different components that make up the construction supply chain in South African townships?**

Sub-question 1 aimed to understand whether complex and unique South African township construction supply chains differ relative to traditional supply chains more commonly known in the formal sector. Additionally, the individual components that make up these differences and or similarities in business models in the South African construction supply chain were documented.

### 3.2.2 Sub-Question 2

**What are the enablers and/or challenges faced by township construction supply chain businesses that affect business model innovation?**

The aim of sub-question 2 was to identify the enablers and challenges experienced by players in township construction supply chains within a township environment. How these enablers and/or challenges influence business model innovation in the context of the township construction supply chain was also documented.

## Chapter 4: Research Methodology

### 4.1 Introduction

This chapter describes the methodology used for this research. Using a multiple case study research approach and thorough semi-structured interviews, in-depth data was collected from a sample of fifteen respondents in the township construction supply chain across several township communities in Gauteng. Five of the fifteen respondents comprised the main cases of the study while the other ten respondents made up the supplier and customer network of each respective case in order to triangulate the data in the study. Given that the topic of study was relatively unexplored, the research used a qualitative exploratory approach to understand the new and unique findings that emerge in the township construction supply chain of South Africa. Research design, data populations, data sampling, data collection and data analysis allowed for the research questions set out in Chapter 3 to be answered thoroughly.

### 4.2 Research Design

A qualitative approach was used for this study as the environment in which the study was conducted is unique and highly complex, which needs adequate exploration for potential new concepts to emerge. The primary research question for the study was: In what ways do contextual and resource constraints address the level of business model innovation within construction supply chains in South African townships?

The above research question was addressed with a pragmatic view. According to Saunders and Lewis (2018, p.111), a pragmatic view is a philosophy which argues that “the most important objective of the research design adopted is the research questions, where the aim is often to offer practical solutions”. Tashakkori and Teddlie (1998) further explained that pragmatism is when a subject is appealing to the researcher where debates about truth and reality are avoided and where the researcher finds true practical value in the research. In their view, the researchers should study in a way that they feel is appropriate given the research topic and use the results in a positive way that can bring results to the researcher’s value chain (Tashakkori & Teddlie, 1998).

Qualitative research is the preferred methodology when a researcher uses context to understand a new concept in a practical way (Leedy & Ormrod, 2002). Qualitative research allows a researcher the opportunity to comprehend and understand a new findings in specific situations (Golafshani, 2003), where the phenomenon will reveal itself naturally in the research findings (Patton, 2002). The current study was conducted using an inductive approach. Induction was referred to by Saunders and Lewis (2018)

as an approach where building a theory is originated from analysing data that is already collected. Furthermore, Saunders, Lewis and Thornhill (2009) suggested that a study under induction should follow the data the study produces and not vice versa as seen with deduction approaches. Researchers using an inductive approach will criticise deduction due to the rigid methodology that does not allow any different explanations when making sense of gathered data (Saunders et al., 2009).

This study used a mono method during the data collection process. The mono method used comprised of face-to-face semi-structured interviews. This allowed for the study to take on an explorative lens during the research process. Saunders et al. (2009) defined exploratory research as discovering new insights by asking different questions that assess a phenomenon from a new perspective. The importance of exploratory studies is to understand more clearly a particular topic under investigation (Saunders & Lewis, 2018). Although exploratory research may provide initial answers to the question posed by the researcher, more detailed research around the topic can be conducted to validate the findings at a later stage through quantitative study.

A case study strategy was used to investigate the business model innovation among a diverse purposive group of firms operating in the construction supply chain in South African townships. Yin (2003) described the aim of a case study as the generation of patterns and theoretical relationships that are known as analytical generalisations where findings are not derived from a statistical perspective. Specifically, multiple cases were drawn to assess different phases of the construction supply chain (from the supplier/manufacturer to the end consumer within a particular township business) to help build an understanding as to how this supply chain works. Understanding the flow of the construction supply chain within a very specific context was best accomplished using a case study strategy. This ensured the full extent and depth of the construction supply chain was understood thoroughly through the experiences of real life cases. According to Proverbs and Gameson (2009), case study research is appropriate in industries that are made up of many different types of businesses. They further explained that case study strategy is used in research that is experimental in nature using procedures comprising of different data collection methods where emphasis is placed on investigating a phenomenon within a particular context (Proverbs & Gameson, 2009). In the current study, the phenomenon investigated was business model innovation in the context of construction supply chains in South African townships under a constrained business environment.

Due to the fact that the study undertook a case study strategy and was time-constrained, the time horizon expectation for the study was cross-sectional in nature (Easterby-Smith et al., 2008; Robson, 2002). In addition, the technique used when choosing the sample of this study was purposive sampling. Purposive sampling is considered as a type of sampling where judgment is used to choose a sample based on a range of possibilities (Saunders & Lewis, 2018). Researchers use this technique to choose smaller type samples that will yield qualitative data to best answer a set of research questions and make logical generalisations (Saunders & Lewis, 2018).

### 4.3 Population

The construction supply chain cases at each level were drawn from universes of township communities within the Gauteng region of South Africa. Specifically, the several townships involved are located in the Johannesburg and Midrand areas of Gauteng. In Johannesburg, the township included in the study was Soweto, and in Midrand they were Diepsloot, Ivory Park, Winnie Mandela and Tembisa.

### 4.4 Sampling

In order to understand the sampling method and size in terms of the cases that were chosen, the construction supply chain that was expected in the township was confirmed and outlined. Figure 7 summarises the construction supply chain in the township construction supply chain.

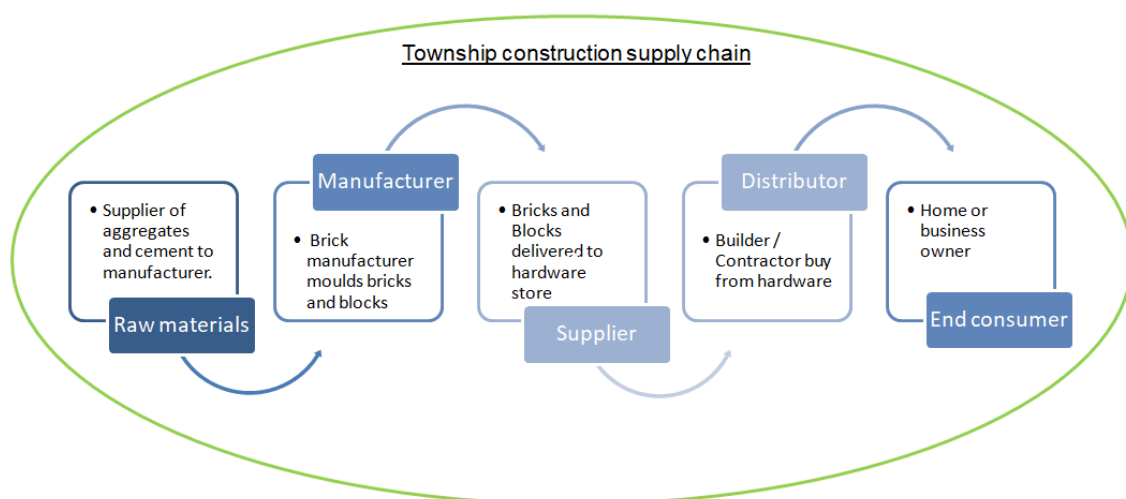
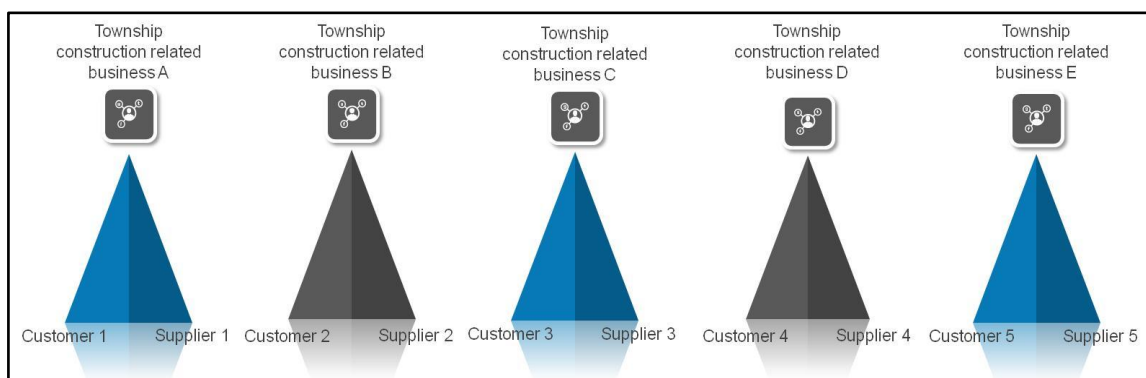


Figure 7: Illustration of township construction supply chain.

Once a thorough understanding of the township construction value chain was determined as seen above, the study focused on several business cases at different

levels of the supply chain. Focusing on several business cases in a study increases complexity, but is advantageous due to the benefit of contrasting findings among similar related cases (Proverb & Gameson, 2009). Several cases were used in the study to ensure more compelling, reliable and valid results were produced (Proverb & Gameson, 2009). For these reasons, the sample drawn from the population were five individual business cases that make up a diverse group of firms involved in the construction supply chain within township communities in the Johannesburg and Midrand areas. Within each business case, the business owner, a supplier and a customer of the businesses were interviewed to allow for triangulation to occur within each case. This ensured a better understanding into both ends of the supply chain, providing a broader base from which to assess the construction supply chain in the township economy.

Figure 8 details how the business cases, and the relative supply chains within each business, was expected to be assessed in the construction supply chain of the township environments.



*Figure 8: Illustration of triangulation used among the sample - planned.*

Due to the unexpected challenges, complexities of relationships among respondents and time constraints of the current study, the above process was adapted slightly to accommodate for respondents who were unable to be interviewed as planned and agreed. Those customers who were unable to be found or sourced for each specific township construction case were however sourced through the supplier within the same case group. The business cases, suppliers and customers were related slightly differently in each case group. The actual case groups that were interviewed and their relative relationships within each group were thus organised according to which participants were willing to participate and those that the researcher had access to.

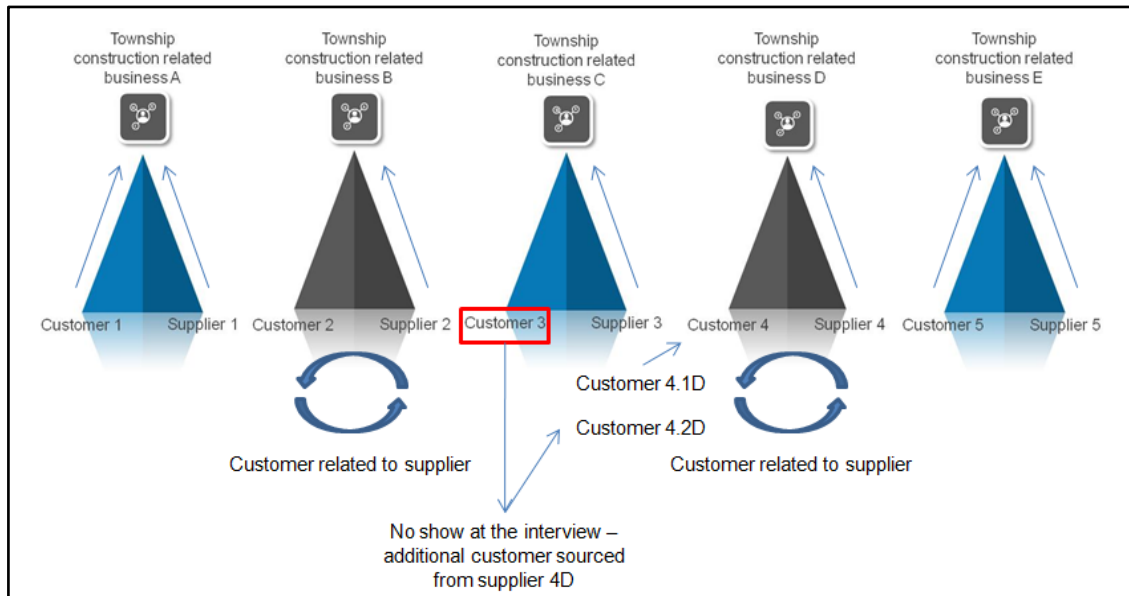


Figure 9: Illustration of triangulation used in the sample – actual.

#### 4.5 Unit of Analysis

The purpose of the study was to gain insights into the business model innovation that construction related businesses within the sample engaged in. As a result, the unit of analysis was each of the five construction related business cases. More in-depth data was collected as a result of the case study approach through the two related parties of each case, which themselves provided extra data to measure the effects of potential innovation found within each case. More particularly, the unit of analysis can thus include the owner/manager of each of the five cases, the case's end customer as well as one of the case's suppliers.

#### 4.6 Interview Schedule

Semi-structured interviews were conducted allowing for primary data collection and for rich data to be collected (Brewer, 2012). Furthermore, it allows for analysis to be conducted comparatively because of the degree of regulation, and also allows for spontaneous interview questions for clarification (Welman & Kruger, 2001). Semi-structured interviews were conducted with each of the five cases identified within the township construction supply chains of townships in the Johannesburg and Midrand areas. During these interviews with each business and individual case, it was vitally important that the interview used was intended to fully understand the respondent's impressions and experiences (Proverb & Gameson, 2009).



Furthermore, additional evidence of interest to the current study was found even though the information received went beyond the scope of the interview. Evidence that presented itself in the form of other business documents, observations as well as physical artefacts was also documented (Proverb & Gameson, 2009). A draft of the semi-structured interview that was carried out with the five cases and their relative suppliers in the study can be found in Appendix A. Customers of each case were interviewed with a similar but separate set of questions. This interview schedule was created in such a way that it would provide data from the perspective of the customer of each case from an outside-in perspective on the business. The questions were also structured in a way that data could still be gathered on the customer's business if the customer was a business owner in the township construction supply chain, adding further richness to the data collected. An example of this interview schedule can be found in Appendix B.

#### **4.7 Pre-test**

A pre-test of the interview schedule was conducted with a business owner who represented similar characteristics of the sample in the current study. Initially, the interview schedule was too complex for the business owner to understand. This was due to unfamiliarity with the content of the questions which needed to be revised given that the sample generally came from informal business backgrounds where certain terminology may have been misinterpreted in a different context. For this reason, it was made a priority that the questions were simplified as much as possible to be understood by respondents, but encompassed as much detailed business terminology around the research strategy as possible, to be able to collect quality data around business model innovation in the township construction supply chain. Additional precautions were taken after the test to include follow-up questions to every question of the interview schedule if respondents needed clarity on certain aspects during the interview.

#### **4.8 Data Collection Process**

Once ethical clearance was approved by *GIBS MBA Research Ethical Clearance Committee* face-to-face, one-on-one, semi-structured interviews were conducted with all fifteen respondents from each case. Each interview was recorded on an electronic device to ensure all the information from interviews was captured. Each audio recording was manually transcribed immediately after each interview to ensure that all the data gathered could be captured together with researcher observations and field notes for richer data to be collected with each respondent. At a later stage, the mass of data was grouped into common themes where coding was then used to identify

common constructs that emerged from each of the diverse firms and their relative stakeholders in the township construction supply chain. This helped to ensure that there was a method in place that created meaningful information from data gathered. This method was used across all the data gathered from the fifteen respondents and was organised uniformly to allow for themes to emerge between the different levels in the construction supply chain.

The process followed during the interview process was as follows (Saunders et al., 2009; Patton, 2002; Welman & Kruger, 2001; Miles & Huberman, 1994):

1. Interviews were conducted with each respondent in order of case numbers and each relative stakeholder thereof (customer and supplier).
2. The interviews from recordings and field notes were transcribed.
3. Insightful and analytical findings from interviews were noted and recorded for future interviews.
4. Themes were recorded in line with the data gathered. Any new themes found during interviews were recorded and added to the interview schedule for future interviews.
5. The above steps were repeated for subsequent interviews.

Initially, a purposive sampling technique was used to find respondents that were most appropriate for the current within the township construction supply chains of townships in the Johannesburg and Midrand area. This was done to ensure enough accurate data could be collected from the defined sample group in the current study. Arrangements were made with multiple business owners of which only a few interviews materialised. After phone calls and messages were sent to potential respondents, most of the entrepreneurs were reluctant to take part in the research. After the first two entrepreneurs agreed to interviews and no response was achieved from other potential entrepreneurs who had been contacted, a convenience and snowball sampling technique was instead used to find other entrepreneurs as well as the suppliers and customers of each case. This was done by accessing the respondent's network during interviews in the form of other common entrepreneurs who owned businesses in the area. This meant that the respondents being interviewed could arrange for an initial meeting to take place with other entrepreneurs which helped convince entrepreneurs to partake in the research. Of the respondents, all agreed to be interviewed and recorded on the audio device, however one respondent was willing to be interviewed but without being recorded. This respondent's responses were instead recorded in field notes.

During the interview process, the questions asked were kept as consistent as possible across all of the business cases. When interviews were begun, an initial set of background questions were asked to develop an understanding of each respondent as well as the context in which each entrepreneur was operating their business. Throughout the interview, questions were asked in a sequence that was pre-planned in four separate categories to gather data in a specific order, making analysis of the data more manageable. Questions were kept open-ended to gather as much data as possible in an attempted to gain deeper insights into the businesses and business owners during the interview.

Every interview, except for one phone call interview, was carried out in person on the business premises of each case as well as their relative stakeholders. Doing so allowed for an immersive experience into the businesses and the broader business environment which added more detail to the data that was collected. This detail was achieved through real-time observations, speaking to employees at the businesses and other individuals in the immediate vicinity of the businesses in the township communities. All this information was recorded in field notes and added to the data where applicable and where it would be most impactful. On average, each interview with each of the five entrepreneurs in each case took between 25 and 30 minutes to complete. The duration of interviews with the five suppliers and five customers were similar. The total interview time across all fifteen respondents was thus six hours and 25 minutes.

#### 4.9 Data Analysis Approach

According to Lal (2001), data analysis is defined as the collection and organisation of large amounts of data through order, structure and meaning. Data analysis was conducted in the following stages (Srnrka & Koeszegi, 2007):

1. *Unitisation*: This first step allowed for the unit of analysis to be determined from the transcripts. The next stage divided themes and patterns using content analysis.
2. *Categorisation*: A framework was developed to determine patterns and themes from step one. It was required that this step be closely linked to the research questions presented.

In addition, Yin (2003) suggested that case study findings be analysed following the theoretical propositions. For this reason, in this study these propositions were formed upon research questions as seen previously in Chapter 3. An alternative approach

suggested by Yin (2003) was also followed. This was a case description approach which set out a descriptive framework for each of the case studies and their respective stakeholders in the study. Both methods are equally effective and were used in conjunction with one another in the current study (Proverb & Gameson, 2009).

Throughout the duration of the interview process, as interviews were finished and recordings transcribed, ATLAS.ti was used as a data analysis and coding tool to organise the data found into meaningful pieces of information. The program allowed for all the interviews to be categorised and for themes to emerge in the form of codes, thus forming the unitisation phase of the data analysis. During this process, it was often the case that codes and categories needed to be changed and refined as new data became evident with each of the respondent's responses. This iterative process is consistent with the views of Saunders and Lewis (2018) during the analysis process. Once coding was complete across all fifteen transcripts, the program allowed for the data to be categorised according to the primary research question as well as the three sub-questions that followed. Code networks were then formed to create the links necessary in the categorisation step of analysis.

#### **4.10 Researcher Bias, Reliability and Validity**

Suitability of the data to be gathered was achieved through a series of validity checks. Triangulation was used as a method to ensure completeness and confirmation of findings (Adami, 2005). Reliability was maintained by ensuring that the interview process was carried out in a similar fashion across all respondents. This was achieved by giving all respondents the same information about the study upfront and before the interview was carried out. The process detailed in the data collection section was used across all fifteen interviews with respondents.

In addition, triangulation is considered as a method to assess the trustworthiness and quality of a qualitative study (Decrop, 1999). Decrop (1999) further explained that triangulation is the process of several independent sources of data converging on, or that does not oppose, original data sources so that qualitative findings are strengthened. Validity cannot be approached in the same way as quantitative methods during a qualitative research piece. Yin (2003) suggested that qualitative work is an iterative process where importance is placed on a well-designed guideline that can monitor the data collection and analysis process. Saunders et al. (2009) and Yin (2003) further indicated that validity is vitally important during the research process and needs to be tested where the results are only credible if they are able to be applied elsewhere. The tool used to ensure validity was a consistency matrix showing how

research questions were addressed by respondents (Brewer, 2012). Further efforts were made to ensure validity and reliability by documenting all procedures that followed as the research unfolded (Saunders et al., 2009).

#### **4.11 Limitations**

The study was subject to limitations during the research process. Due to the explorative nature of the study, Bloomberg and Volpe (2012) and Taran, Boer and Lindgren (2015) suggested that generalisability of results may be limited from results obtained from data analysis. The most probable cause of this is due to smaller and richer sample sizes as compared to a large sample sizes in quantitative analysis. Context played an important role in the current study and hence data gathered needed to be analysed in-depth, making the quality and not quantity of data gathered that much more important for transferability of findings. Further limitation existed in the qualitative data analysis due to the subjective nature of research findings (Saunders & Lewis, 2018). The main influence of this subjectivity was considered by Saunder and Lewis (2018) to be the biases of the researcher. Researcher bias was, however, limited by justifying and providing evidence for the methods used in the study (Saunders & Lewis, 2018).

Researcher assumptions may limit the research to an extent, in that assuming a particular case is appropriate may in fact turn out to not contribute to the study as intended. This thus impacts the quality of data gathered and may impact the generalisability of the study once more. However, assumptions were reduced as Proverb and Gameson (2009) provided a set of criteria when choosing the most appropriate case study to deliver the best results possible. In terms of the interview process, limited education and language barriers in the township community were issues to consider. This is due to limited comprehension of the interview questions being asked by the researcher, and may have resulted in diminished quality of responses and therefore data. To avoid this, the questions in the interview schedule were kept as simple as possible while language assistance was used from other individuals who were present during interviews with respondents.

Other limitations became evident during the research process among the sample. Initially, the research was planned to be focused on one township community in Johannesburg, Soweto. The reasoning for this was to ensure a more concentrated environment of businesses that were closely situated to one another within the township construction supply chain. By keeping in one township, a more consistent collection of data could be achieved due to a single-focused business environment

without varying levels of complexities that may have become evident across multiple township communities. However, this attempt to ensure validity and reliability of data did not occur as initially intended. This was due to multiple interviews that were arranged with entrepreneurs in Soweto that were declined or never materialised into interview meetings. Due to time constraints of the research, alternative arrangements needed to be made in other township communities using other relationships that were at the researcher's disposal. As a result, all fifteen interviews were eventually completed within the townships of Soweto, Tembisa, Diepsloot and Ivory Park. Reliability and validity of the data was not adversely affected as all the township communities displayed commonality in their business environments.

One respondent did not provide permission to be voice recorded during the interview. The respondent did accept the interview, however, and field notes were taken instead. This is a limitation to the research as the data in the field notes may not have been accurately recorded by the researcher. Furthermore, one customer from Case C did not arrive at the interview. No other customers from Case C were willing to participate in the research. For this reason, an additional customer in Case D was sourced instead for data to be gathered. This meant that triangulation could not fully be completed for Case C; however, data gathered from the entrepreneur and supplier was still sufficient to be considered for the study.

#### **4.12 Ethical Considerations**

Ethical consideration was taken throughout the research process. Interview schedules were checked by an ethics committee and approved to be used as a data gathering tool in the research field. Consent letters and forms were also drafted which explained the topic and research process to the respondents. The consent letter was left with the respondent for their reference and a copy of the consent form was signed and dated before the interview was carried out. A copy of the consent form and letter can be found as Appendix C and D.

### **4.13 Conclusion**

This chapter provided an in-depth overview and defence of the methodology used for this study. Research design, populations, samples, unit of analysis, interview schedule and pre-test, data collection, data analysis, researcher bias, validity and reliability, limitations and ethical considerations of the current study have been documented. The following chapter will outline the results and findings for the current study. Each result and finding has been organised according to the research questions documented above. Additionally, each case involved in the research process has been thoroughly described for further analysis to be completed. A summary diagram of each of the results structure has been provided at the beginning of each section for ease of reference.

## **Chapter 5: Results and Findings**

### **5.1 Introduction**

Chapter 5 begins with a description of the sample and a summary of each of the five cases together with the suppliers and customers associated with each case in the township construction supply chain. Each case, customer and supplier is described separately before the presentation of the results. The results and findings are organised in accordance with the three research questions. One primary research question was established and two sub-questions delve into more precise detail that builds on to the primary research question. Entrepreneurial theory and resource constraints were the overarching principles on which the results were built. Other themes also became evident in the codes during data analysis due to the exploratory nature of the study. Each of these themes are presented under each of the relevant research questions throughout the presentation of the research findings. Each research question's results are summarised at the beginning of each section in a diagram for ease of reference. The evidence presented in the results section was taken directly from each transcript of each business case in order from Case A through E with each respective stakeholder (customers and suppliers) under each business case.

### **5.2 Description of the Sample**

The sample drawn for this study consisted of five business cases. Each of the five cases were drawn within the township construction supply chain of South Africa where entrepreneurial founders were interviewed using semi-structured interviews. The businesses were similar in that they were all construction related, however each varied according to size, number of years in operation, product offerings and location. The cases were restricted to the Gauteng region, specifically in the township communities of Soweto, Tembisa, Diepsloot and Irene. In addition, one customer and one supplier of each case were interviewed in order to get a more holistic view of the township construction supply chain. In some cases, specifically Cases B and D, customers from each case were not willing to be interviewed. For this reason, customers were alternatively sourced from the suppliers of each case, i.e. Suppliers 2B and 4D respectively. In Case C, the customer did not arrive at the scheduled interview. An interview with an additional customer from Supplier 4D was then arranged and added to the sample.

From a customer's perspective, a disparate perspective on the case could be developed and additional data could be gathered from an entrepreneurial perspective if the customer was a business owner in the township as well. Suppliers then provided



further insight into their business models and the impact they had not only on the case in focus, but also on the entire township construction supply chain as a whole. Overall, this provided a good foundation for data to be triangulated, resulting in more reliable and accurate findings. For ease of reference, each of the five case are labelled A through E and each of the respective customers and suppliers related to each case are labelled numerically under each alphabetical case label i.e. Case A is grouped together with *Customer number 1A (C1A)* and *Supplier number 1A (S1A)*.

The below tables outline the respondents of each of the five construction related business cases, as well as the individuals and businesses involved in the direct supply chain of each case:

*Table 1: Township construction related business cases*

<b>Township Construction Related Business</b>	<b>Type of Business Owned</b>
Case A: Shezmo Hardware	Retail hardware
Case B: Boko Entrepreneurs	Construction and civil construction
Case C: M Brick Manufacturing	Retail hardware, brick manufacturing and building materials
Case D: RJ Trading	Rubble removal and construction
Case E: Kekane Builders Construction	Building and construction

Table 2: Suppliers of township construction businesses interviewed.

Supplier's Businesses	Type of Business Owned
S1A: Bolts and Nuts Centre	Specialized bolt and nuts retail
S2B: Takolias Hyper Hardware	Family owned retail hardware and building supplies
S3C: Bahglengwe Welding	Welding services and manufacturing
S4D: RMM Building Supplies	Retail hardware, manufacturing and supply of building materials
S5E: Allandale Trading	Retail hardware and gas wholesale

Table 3: Customers of township construction businesses interviewed.

Is the Customer a Business Owner?	Type of Business Owned / Employed at	Customer Source
C1A: YES	Plumbing contractor	Case A
C2B: YES	Building contractor	Supplier 2B
C3C: NO SHOW	NO SHOW	NO SHOW
C4.1D: YES	Building contractor	Supplier 4D
C4.2D: YES	Building contractor	Supplier 4D
C5E: NO	Nedbank – Financial services	Case E

## 5.3 Case Descriptions

### 5.3.1 Case A

The small retail hardware store was founded in 2013 and established in Orlando, Soweto. The founder of the business was involved in the construction industry before but was never employed by a company; he always worked for himself as a contractor on private jobs. The owner is currently 52 years old and believes his motivation to begin his business was because he was unable to be properly recognised as an informal contractor in the township market. While working as a contractor, he realised opportunity in the supply of building materials in Soweto due to an increased demand for building contractors in the area, more business activity around the building industry, and no other hardware stores existing in the area at the time. This would result in inconvenience for home owners building or renovating their properties as they would need to travel far distances to retrieve all the materials needed to complete their projects at elevated costs. In the eyes of this entrepreneur, moving up the value chain to supply materials and products to the very job that was only just providing for him and his family was worth the risk.

With no capital, the business was originally co-founded by two partners who split up at an early stage of the business. The current owner overcame this challenge and began his operation as a side-walk stall just outside a popular grocery store on the street on which he resides. Having a vision of being able to provide for his family and uplift his community, the business grew into a successful small store in a rented room with a sophisticated IT system, a much wider product range, one small truck for deliveries and an exhaustive list of supplier and customer relationships.

Currently, the business is made up of three full-time employees together with the owner of the business. Each employee has a specific function in the small business that together make up a simple but well-run operation. Two salesmen and one driver together translate customer's orders to speedy, on-time deliveries. The owner of the small hardware store plays an elevated role in his business by managing the daily business functions at a much higher level. These functions arise in the form of stock control, buying, human resources, on-time payments to suppliers, and ensuring that the business is well-monitored and maintained to continue to make a profit.

As of late, there have been efforts to expand the business which have unfortunately been met with setbacks. Although an expansion plan exists, the infrastructure and

financial requirements to achieve sustainable growth are not attainable due to multiple constraints that exist both from an infrastructure and contextual perspective.

The products that the business currently provides its customers comprise a select range of electrical and plumbing necessities, most common are aggregates, cement, general DIY products, tools as well as a cheaper building brick known as an “RDP brick”. No products are manufactured on-sight due to financial and infrastructure constraints. All products in the store are ordered from external suppliers, often outside of the township construction supply chain, where the business holds accounts with most them. The main customers who buy from the small hardware store are contractors as well as home owners completing DIY tasks.

From an advertising and promotional perspective, currently the business relies on word-of-mouth recommendations as their main source of attracting customers to the store. However, plans are in place to use a combination of traditional marketing techniques together with more innovative social media posts to draw more feet into the store. Furthermore, WhatsApp is a tool that is relied on heavily as a communication tool between employees as well as customers to ensure efficiency in the business.

### *Supplier 1A*

Located close by to Case A above, this small informal business, still at the beginning of its inception, has been in operation for only three years. The business operates out of a 1.8 metre container with no electricity or running water. Each product in the store has been individually and manually itemised into small recycled cool drink containers across all four walls of the small container. The small informal hardware store specialises in nuts and bolts ranging in width, length, thread and thickness. The business also stocks a very limited range of tools and motor vehicle accessories.

The young manager in store is 21 years old and manages the business on behalf of her older brother. The purpose of the business is to ensure that her older brother is able to provide for himself as well as his immediate family. Her brother put down the initial capital to begin the family run business and works a full-time job at Presidents Bolt Centre in Fordsburg, a nearby established industrial town. This is what prompted the owner to begin the business in the same industry.

The business’s operations are fairly simple. The manager of the store has learnt the product offerings available through experience in the store. The store’s main customers are generally from more of a motor mechanical background who operate in Soweto;

however, the store does receive specialised orders from other businesses in the area as well; one such customer is Case A above. The store has its most common fast moving goods in stock at all times; however, limited space does not make it possible to keep the vast variety of nuts and bolts that exist. For this reason, when a customer is unable to find what they are looking for in the store, the manager in the store contacts her brother who sources it from his suppliers outside of Soweto, mainly in town. Once the products arrive, her brother picks them up after work and brings them to the store on his way home.

Due to limited infrastructure at the store, the store is a cash only business. There is no electricity to facilitate an IT system for the business to operate and report on. There is also no internet connection, making a card facility impossible to install. Be this as it may, the family run business still shows signs of good business practice, keeping manual transactions books and stock capture on a daily basis.

Although a very simple business operation and structure, the family run business displays signs of significant entrepreneurial spirit to continue to grow the business to eventually establish itself in a building fit for formal business activity. The business was established to provide for a family and ensure that, at all times, living in the township community is as comfortable as possible no matter the restrictions.

### **Customer 1A**

The first customer is a self-made 26 year old Zimbabwean entrepreneur who buys from Case A and operates a business in Soweto. The customer left Zimbabwe in search of more fruitful opportunities in South Africa to send back much-needed resources to his family due to the poor political situation facing Zimbabwe. The customer's Sowetan-established plumbing company operates across South Africa from Mpumalanga to Durban.

The business operates as a traditional plumbing and electrical company with its roots firmly held in Soweto. Although the business is operated on a national level, the customer's base remains Soweto. This has resulted in the customer building up a good personal and business relationship with Case A to be able to get the supplies needed to complete jobs on time with high quality specifications.

From an education and skills perspective, the customer only attended primary school at which point he decided that he needed to leave Zimbabwe to support himself and his family for a better future. With no prior plumbing experience, the customer began his

business immediately upon arrival in South Africa. He attended plumbing school where he achieved a trade certificate to begin working on small jobs mostly in residential homes of Soweto. Today, the customer has broadened his knowledge base and grown his business by achieving a second electrical trade certificate and assisted on plumbing and electrical tenders granted to South African business owners for government maintenance work. These maintenance contracts include institutions such as Chris Hani Baragwaneth Academic Hospital and Helen Joseph Hospital.

### 5.3.2 Case B

Once again, a proudly Soweto based business, Case B brings an interesting dynamic when understanding the township construction supply chain at its core. The 2007-established construction and civils operation has enjoyed steady and sustainable growth over the last twelve years. With experience in one of the big five construction companies in South Africa and a civil engineering degree behind his name, the 35 year old Sowetan entrepreneur has poised himself for success in the industry.

Case B began operations due to an influx of construction in Soweto just before the 2010 FIFA Soccer World Cup hosted in South Africa. Consequently, the business timing into the market was good to be able to enjoy the fruits of the rising demand in the construction industry of Soweto. With relationships built in one of South Africa's top construction firms and a lack of adequate infrastructure in Soweto, the owner's 100% BBBEE company was able to procure good government tenders in the form of housing, schools, police stations and a variety of municipal buildings to give the business the dream start for which it was looking.

Unquestionably, this business has enjoyed good success but more recently business has naturally tapered from its initial exponential growth. Be this as it may, the owner of the business remains motivated. He is ensuring that the company promotes itself to a broader audience in the form of private businesses. This will help the company to remain relevant and sustainable, even when government work in Soweto is low.

The company's main customer focus is on bigger construction and civils projects for other businesses, B2B instead of B2C transactions, more in government tenders but increasingly so in private businesses. The company's product offerings range from warehousing, small business construction, precincts, residential buildings and infrastructure development. On the supply side, the business has been able to build long lasting relationships with suppliers who have established themselves in the Sowetan construction supply chain. The company uses a preferred supplier where all

construction materials are purchased from the same wholesale hardware store located in the centre of Soweto. This is to allow for an account of 60 days to be maintained and settlement discounts to be received on large volume purchases during projects.

### ***Supplier 2B***

Located on Klipspruit Valley road in the heart of Soweto's Pimville, where a hub of business activity exists, this two-generation-old family-owned retail hardware and building supply company thrives. The business began operations during 1937, being the very first hardware run in the area of Soweto. Motivation began three generations ago, where a small store was created by the Takolia forefathers. They identified opportunity in the area due to large demand for building in the coming years due to segregation caused by the Apartheid government, through which Soweto would be declared a "black only township".

Currently, the retail hardware and building supply operation has fifteen partners, all of which are direct family members. The business employs 45 permanent staff, all of which reside in the Soweto area. Furthermore, all transport is outsourced to local entrepreneurs who have begun their own transport and logistics companies in the surrounding Soweto area. This is to ensure that the company stays true to one of its core reasons for existence, to remain committed to their community and maintain social responsibility.

The store covers over 1000 square meters under roof. This provides ample space to stock a wide range of all hardware, building materials, plumbing, electrical, paint and DIY essentials under one roof. In addition, this space allows the company to have strong buying power over suppliers and often results in discounts and large volume items to be stored on site. The business acts as an intermediary between manufacturing and the end consumer, resulting in good focus to provide customers with everything they would need to build from foundation through to final finishes. The family business has shown good diversification and agility over its long standing history. The family's business interests have extended to polycarbonate roofing as well as farming to allow for additional income to be generated in two separate industries.

An interesting dynamic that was evident in this robust business is the effect that religion and culture plays on its business operations. Having a family-owned business that is 100% Muslim has resulted in payment terms being different to what traditional practices would dictate. When dealing with suppliers, no interest may be incurred on any transaction, and as a result has forced the family business to always pay on time

without fail, putting the company into a favourable position in terms of settlement discount. Among customers, credit is extended to a select few, but with no interest charges.

With a focus on maintaining good volume sales on thin margins coupled with quality service and years of family heritage, this business displays the true possibilities that exists for business in the township construction supply chain even under contextual and resource constraints.

### **Customer 2B**

The Soweto-based customer is a 73 year old semi-retired business owner who purchases products from retail hardware and building supplier Takolias, Supplier 2B. The customer is South African born, originally from Gauteng and operates his business using Soweto as a base. The construction and renovation company has been in operation for twelve years and has used Takolias hardware since its inception. The customer has established a good, long-lasting relationship with the supplier which has allowed his company to grow with ease. Payment is made in cash to Takolias, and he visits the store at least five times a week to buy all the building materials that are needed to complete projects.

The customer received a basic primary education with no tertiary education. The entrepreneurial spirit evident in this customer originated from reading construction magazines and was influenced by job experience onsite with other building companies. Once experienced enough, the customer began his own company with the help of his wife and neighbour. Without any government support or tenders, the Sowetan entrepreneur focuses on home renovations and constructions. At this stage of his business, he relies mainly on recommendations and word-of-mouth to receive work.

At retirement, the customer seems to be slowing down his operation with not much intent to grow his business further. For this customer, a business that is manageable, can sustain itself, and is able to continue without constant interference is an ideal position to be in.

### **5.3.3 Case C**

At 71, Case C presents another business owner who is close to retirement. The small retail hardware, brick manufacturing and building supply business is once again located in Orlando East, Soweto. The operation has been built over 41 years, opening its doors in 1978. The business began as a side-walk brick making business that eventually



grew to include a retail hardware and other building supplies store. Today, the brick making division of the business has been sold off to allow the business owner to consolidate with a smaller store for his grandchildren to manage. They too wanted to begin their own businesses after school and felt their family business would be a good starting point.

The entrepreneur used to work in town as a truck driver at various companies, which was not challenging nor rewarding enough to continue. He opened his brick making business after gaining experience he learnt after school at a technical college in Soweto. At the college he was taught how to mix and prepare bricks for building, and received a certificate to ensure the correct quality of his products.

Today, the business has developed into a small family operation that continues to provide for the entire family two generations later. The operation includes a small store and yard at the bottom of the owner's family home. The store keeps some home products, tools, DIY essentials, cleaning products, building materials and non-perishables. Simultaneously, to make additional income the owner sells clothes and collects rent from his property, on which the brick making plant is still operational under new ownership.

The business's main customer segment consists of end consumers, specifically home owners in the area. In addition, contractors have also found value in purchasing from the small store. A sense of community exists in the business due to a constant flow of repeat customers who come to the store daily, aligning with the business's mantra of supplying the community. The main suppliers to the store are two hardware retail chains that operate on the borders of the Soweto community as well as a few smaller entrepreneurs who sell their products door-to-door in the community.

### **Supplier 3C**

Soweto-based welding company, Bahlengwe Welding, focuses on a more niche area in the township construction supply chain. Specialised skills that have taken years to master make this business unique in the market. Aged 36, this South African entrepreneur began his business in 2012 after gaining knowledge and the skills required to weld over five years from his previous job at another small welding business in Gauteng.

Originally from Limpopo, the entrepreneur was in search of better opportunity in Gauteng and specifically in the township of Soweto. The entrepreneur began his

business doing smaller jobs for home owners. The product offerings began as simple manufacturing and installing of gates, locks and burglar bars to order. As the business matured, the business employed two staff members and expanded its product offering to include the manufacturing and installation of bigger car ports, railings and balconies for home owners in Soweto.

Today, the business operates out of a small rented factory where all the necessary equipment is owned and stored by the entrepreneur. Although the business owner still needs to qualify the business for a trade certificate in the form of a CK certificate, his customers still use his services despite the lack of formality. This is due to the quality of work and good reputation the business has managed to build over its history.

The business's main customer base comprises home owners in the broader Soweto region. However, as of the last two years, the business is beginning to expand its sales to include other businesses looking for specialised welding work. These businesses include small hardware stores such as Case C and industrial factories just outside of Soweto. In terms of suppliers, the business purchases steel and welding materials at local small hardware stores in the township when work is being done locally, but alternative suppliers are used for jobs outside of Soweto.

### **Customer 3C**

Although an interview was arranged with Customer 3C from Case C, the respondent failed to arrive at the meeting. For this reason, an additional customer in Case D to follow was sourced and interviewed due to time constraints.

### **5.3.4 Case D**

Case D presents a 31 year old Mozambican entrepreneur in the construction and rubble removal business. In this case, the business has been able to integrate vertically by providing construction services and rubble removal in one package. The business owner initially worked as a builder for a private company. Initial capital was needed to begin operations, however the salary alone that the entrepreneur was earning at the time was not enough to cover the initial capital requirement. As a result, desperation lead the entrepreneur to take a risk in his previous job to source the funds via his boss. This eventually created the capital needed to begin his business. This was done by inviting contractors to site that his boss thought were independent contractors, however these "independent contractors" were individuals being managed by the entrepreneur. This way, when payment was made to the independent contractor, the money would be split in two for the now entrepreneur and the so called contractor. Ultimately the

entrepreneur lost his job but lead to his own company from the money saved from unethical activity.

With enough capital to purchase his first truck, the entrepreneur began his infant operation. With vast experience in building and electrical work, the entrepreneur began small home building and renovations in and around the Tembisa area. After operating his business for some time, he decided to expand his business and concentrate on bigger building projects for other businesses. This proved to be impossible as the building and electrical certificates he obtained in Mozambique held no credibility in the South African building and construction industry. Without adequate funds to put himself through the South African trade certificate course, the entrepreneur pivoted and decided to become a full-time contractor to continue learning and gaining job experience without having to do his trade.

Today, the business owner has been able to partner with another private company, DL Projects, who he enjoyed working with as a contractor on multiple projects. The original owner of DL Projects (Gerhard) has years of experience in the building industry and has built up a strong reputation. Both parties saw an opportunity to collaborate and became 50% partners in DL Projects.

Currently, the entrepreneur in focus runs, all the operations at DL Projects and Gerhard simply oversees the business as a silent partner. The business's main customer focus is home owners where the business is able to provide full building services from foundation to roof as well as renovations. On request, a plan can be drawn up and quantity surveying done on all the materials needed. Materials are then sourced from suppliers and the project can begin. DL Projects also covers all of the project management services from the start until the end of a project, ensuring quality contractors are used for all various areas during a building project.

### ***Supplier 4D***

Before describing this case, a declaration of interest needs to be made clear. The owner of this particular business is a family member of the researcher. For this reason, certain elements of researcher bias may be applicable and should be understood in the current study.

Supplier 4D, situated in Olifantsfontein on the border of townships Tembisa, Irene and Diepsloot began its operations in 1997. This family-run business began as one owner and his wife with two employees at a small rented store. With resource constraints and

minimal equipment, the company grew with its environment over the past 20 years to become a high capacity building material supplier, manufacturer and retail hardware. The 50 year old South African born entrepreneur drew inspiration from his younger self and followed his passion for business to become his own boss.

The owner and founder of RMM attended school up to grade twelve. During this time he spent a lot of time with his father who was a builder from Portugal. Here he learnt the fundamental skills in building and construction which was enough to have been able to set up his operation today selling and manufacturing building materials. Coming from a poor family background, as a young man the owner needed to make his own money and did so through his own retail sales of any products he could find and fix, leading to his love for retail. These two components combined developed his inspiration to begin his company.

In terms of operations, the company initially built up its retail capability to include three stores, two in the Midrand area and one in Mpumalanga. These stores sell a wide range of products including all building materials, tools, DIY essentials, gardening and building related products.

Furthermore, the company opened a manufacturing plant and sand screening facility near Diepsloot ten years ago. The vision for this facility upon inception was to ensure vertical integration into the business to support retail channels to bring down costs of bricks and blocks. This was especially to accommodate nearby township community customers who make up 70% of the company's building bricks and block sales, especially smaller hardware customers. The company has also integrated its business model horizontally recently to include a property portfolio. The owner believes that although they are separate industries, refurbishing property assets compliments the core business of building supplies from a quality, cost savings and building expertise perspective.

The company's main customers comprise a mix of home owners, contractors, government and smaller township hardware's. The owner believes that this customer base is set to expand into different industries given the integration of the property portion of the business as well as plans to add other divisions. The company has a list of 200 to 300 suppliers on its books that sell large volume of retail stock to the company's three retail stores.

During the first year of operation, this business generated revenue of around R80 000 for the year. As of last financial year, the business has generated R80-million in revenue. This provides evidence and stands testimony to a well-run business that has been agile while maintaining foresight through turbulent market conditions.

#### ***Customer 4.1D***

The following customer is a business owner and began his business in 2004. The 46 year old Zimbabwean national arrived in South Africa with similar intentions of most Zimbabweans, looking for opportunity and stability in South Africa compared to fragile political conditions that are worsening in their home country. This customer purchases from Supplier 4D and has provided good insight into the operations at the hardware and building supply company. Additionally, he has provided insight into his own business operations, running a construction company originally out of Ivory Park, a nearby township, and recently expanding into high-density suburbs.

The customer comes with a rich background of knowledge and experience in a variety of business fields. As a secondary education student, he was taught the building trade at school as an extra subject offered to learners in Zimbabwe. Students had the opportunity to participate in all normal school subjects and from grade ten they were afforded the option to take construction and building as a subject. In the three years until grade twelve, learners physically learnt how to build and immersed themselves in the theory of basic building. Once he completed school in Zimbabwe, he continued to study at a college where he graduated with a marketing management degree.

Upon arrival in South Africa, the customer started his profession in marketing at a pawn shop in Johannesburg. Although he had a paying job, his salary was not enough to sustain his living and provide for his family still in Zimbabwe. He then had no choice but to turn to his construction background and began his construction business in Ivory Park. He started with three new projects from the ground up, but those were the only new projects he managed to complete. He realised that there was more value in doing smaller renovation jobs where he could achieve greater value through more volume at a lower margin. His service offerings include home renovations, electrical and plumbing work.

Today, the customer regularly buys all the materials he needs from Supplier 4D. He has built up a good relationship with the company over the past few years and maintains that he will continue to support the business in the future. His business has focused on a new target market in high-density suburb areas which has proved to be a

profitable move for his operation. Township business has proven to be difficult for this entrepreneur and his promotional efforts on online classifieds and other platforms have been more effectual in growing his business's offerings out of the township construction supply chain.

### ***Customer 4.2D***

Similar to Customer 4.1D above, this customer is also a business owner who owns a construction company. The 44 year old South African entrepreneur buys from Supplier 4D and operates his business from his base in Tembisa, another township near Supplier 4D in Midrand, Gauteng. Fifteen years ago, the customer decided that his job and salary was unsustainable given that he was not being paid for his work at the end of every week from the construction company was working for. He resigned from his job, had no car, borrowed friends' tools and began working on small jobs in Tembisa. After a year, he had saved enough capital to buy a bigger truck, employ a few labourers, and work on bigger jobs in the form of new building projects from the ground up.

Currently, the customer has provided evidence that there is not good business to be done in the township market. As a result, the customer has had to re-visit how he packages his service offering for a more affluent market. He has done this by entering smaller suburb areas around Gauteng that allow for much higher value jobs to be built.

The customer provided new insight into bigger hardware retail chains, and explained how he does not enjoy supporting them. He believes that the quality of service and advice when buying building materials is what makes the difference. This is why the customer chooses to rather purchase his building materials within the township construction supply chain. Even though the customer now works all over Gauteng, he still prefers to use his local supplier to purchase his materials, where possible.

The customer has built his business on honesty. This mantra underpins his operations and service offerings. The customer has the ability and capacity in his business to build from foundation to roof. His services extend to plumbing and electrical work included as additional departments in his business. In terms of operations, the business is managed by the owner himself and has grown to include teams to be able to service multiple sites at any given time.

### 5.3.5 Case E

This 46 year old owner of a construction and building business has shown true entrepreneurial spirit. He has proven without a doubt that business need not be judged by the level of education a person has. With only a grade four primary education, this business owner has managed to build a successful business that employs fifteen people in a short space of time. Armed only with his previous work experience as a brick layer, and a desire to provide a better future for his family, a construction company was born.

The business operations in this case consist of building, renovations, tiling and outsourced contractors to deliver buildings to clients. Currently, the business's main customer base resides in upper- or middle-class suburbs of Gauteng in the form of home owners, as well as other businesses. Upon inception however, the business carried out small jobs for home owners in township communities. These small jobs allowed the business owner the opportunity to save enough money to slowly grow his business by purchasing equipment and vehicles needed to carry out bigger construction work. The business's first big job was a factory built for a previous employee expanding his business. This factory allowed the business to receive substantial income needed to grow to a meaningful operation.

Today, the business has three vehicles and all the equipment it needs to build both big and small projects. The business owner in this case provides customers with a personalised feel to their building experience. Instead of just giving customers a list of materials to buy, he tries to meet with customers at his local supplier close to the business's base in Glen Austin, Midrand. This why he has a personal interaction with the client and ensures the client purchases all the necessary materials and tools to ensure the project remains on time and is finished to the desired quality. To compliment this, the business owner has the ability to draw up plans and bills of quantities which help the building process. This personal time is created because of fifteen employees who together form three teams that complete projects simultaneously.

Coupled with the abovementioned operation, the business owner in this case has been able to operate another two businesses which help to make managing his construction business easier. A taxi and rental from a small grocery store make up the additional income that helps cash flow in the main construction business, especially when there is no work available.

### ***Supplier 5E***

This small retail hardware store located on the border of Tembisa in Midrand has a longstanding legacy and history in the market. Established in 1948, the 71 year old business is one of the oldest businesses in Midrand. The three-generation-old business began with the current owner's grandfather. Operating as merely a trading post during its first few decades of operations, the family running the business has good experience in operating a retail establishment. The current owner's father then took over the business and opted to turn it into a hardware store later on in the business's life. Getting into this market has stood the test of time as the hardware store still exists today.

The current owner (grandson of the founder) of this business is 50 years old and has a degree in business economics and accounting. With a passion for architecture after school, the owner always enjoyed all things building related. This made him the perfect candidate to take over the hardware business when he finished university at 22 years old. In 2002, the owner decided to diversify the business's product offering and built a new building to include an additional bottle store and grocery store together with the hardware store. This addition made the store a "one-stop shop" for all the essentials needed by customers.

Operationally, the business runs a mainly retail operation diversified over a supermarket, bottle store and hardware store. The business buys the products it sells mainly from suppliers for all its stores. Payments to suppliers are 80% cash-on-delivery (COD) while 20% are accounts. The owner pays on COD agreements for smaller items while volume sale items are purchased on account. The business does have a section that is wholesale as it is licensed to re-fill gas.

Today, the business's customers consist mainly of home and business owners in the neighbouring township of Tembisa. Customers extend to the broader Gauteng region due to the bulk of the businesses sales coming from their website and sales platform.

### ***Customer 5E***

The final customer of the sample uses the services of Case E. This customer is not a business owner, but instead works as a financial advisor in the banking sector. This customer proved to be helpful in providing insights into the township construction supply chain from an outside, third party perspective. Not being involved in the industry



at all, this customer used the services of Case E more than once on improvements done to his home.

The customer used the services of Case E upon recommendation of Case E's supplier. The customer found further comfort in knowing that Case E had been used by other home owners in the area. This allowed him to observe his work and have a reference of the quality that he produced.

#### **5.4 Primary Research Question: Contextual and Resource Constraints Results**

Using a resource-based view and entrepreneurial bricolage as a conceptual framework, the aim of the primary research question was to determine the elements of contextual and resource constraints to develop the entrepreneurial orientation found among township construction entrepreneurs. This informed either a high or low level of business model innovation within township construction supply chains of South Africa.

The primary research question was then broken down into two sub-questions to explore the different elements of business model innovation under contextual and resource constraints within South African townships. These results will follow under separate headings throughout the remainder of Chapter 5. Coding was used as a form of analysis where themes were drawn from the transcripts of respondents. The network diagram for each research question can be found in Appendix E.

Contextual and resource constraints were evident across most of the sample, including each business case as well as the suppliers of each case who owned businesses in the township construction supply chain. Questions relating to contextual and resource constraints were integrated across the semi-structured interview questions. These questions asked respondents about their personal background, history, motivations and previous experiences in their business story to help unearth constraints due to context or lack of resources that entrepreneurs needed to navigate when beginning their businesses. Additional questions were asked to determine the business's main beneficiaries, business progression barriers, and the importance of improving relationships with supply chain players. These questions assisted in understanding whether contextual and resource constraints still played a prominent role in the daily running of the businesses.

Coupled with the responses from business owners in each case as well as their suppliers, customer's responses provided the opportunity to view contextual and resource constraints through a different lens. Those customers who were also business

owners in the township construction supply chain gave insight into their own business operations and the constraints they faced throughout their business cycles. Additionally, customers also provided their opinions and perceptions around the difficulties of running a business as well as the opportunities that existed in the context of the township construction environment.

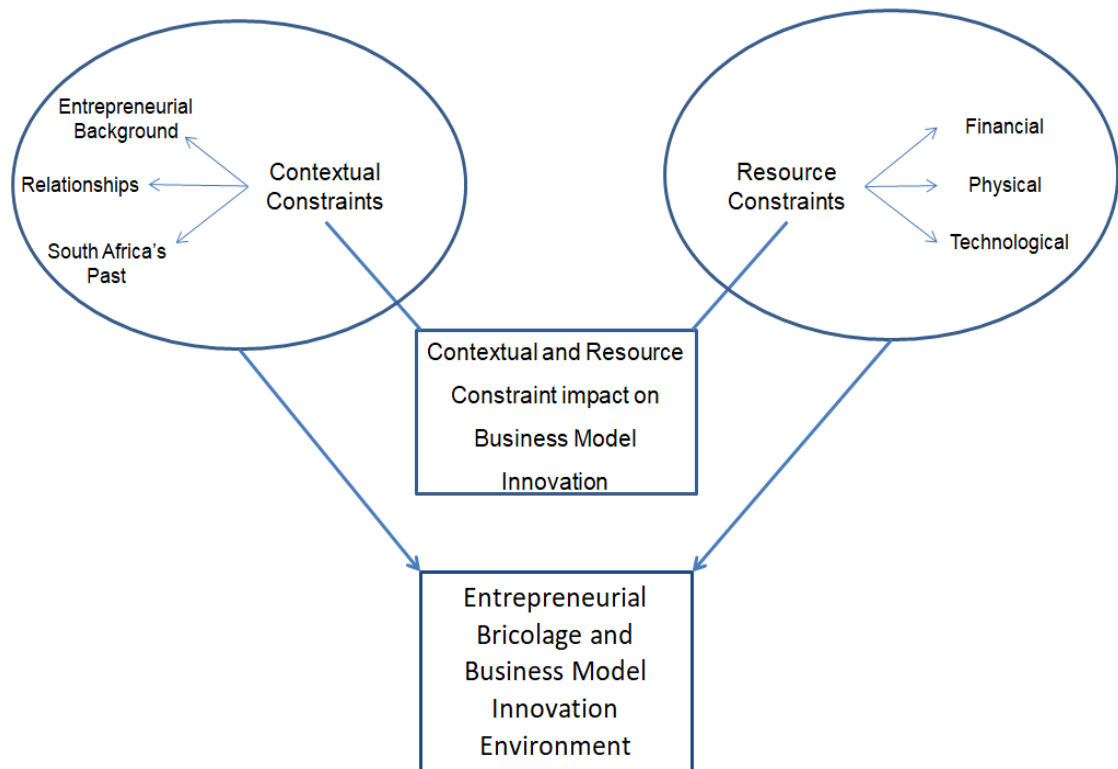


Figure 10: Results structure for contextual and resource constraint impact on business model innovation in the township construction supply chain.

#### 5.4.1 Contextual Constraints

The main contextual constraints that became evident in the data originated from the entrepreneurial background of business owners, key relationships in the township construction supply chain, as well as South Africa's history of oppression in the form of Apartheid.

##### *Entrepreneurial Background*

The origins of respondent's experience and sources of skills indicated contextual constraints. These origins include previous on-the-job training, being self-taught, being influenced by family, and attending technical colleges. Previous on-the-job construction type training in the form of labourers and brick layers is where the majority of respondents gathered their experience and skills to begin their construction-related

businesses. Additionally, some respondents had experience in the retail sector as sales people including pawn shops, as well as selling a variety of products as a side hobby for extra capital. Other respondents also had experience in transport as truck drivers doing deliveries for bigger companies outside the township environment. What all these previous job experiences have in common is that they are all lower-paid, unskilled labour jobs that are easy to come by and mostly employ individuals from township or rural areas. This is because individuals in these areas do not generally have the opportunity to obtain the more technical skills and knowledge required for better quality positions. Consequently, it was evident that having a job and making some money, even though it may have been very minimum income, was the most important goal for respondents and their families as soon as they could begin working.

**Case B:** “I worked for Group 5, then after Group 5 I saw that I can do this by myself. I had gained all the experience; and I registered my company under maintenance, and started building schools.”

**Case C:** “*Ja*, straight after school I was a driver, for two companies: Jackson’s and Hilty Candies.”

**Customer 4.1D:** “Before I started construction I actually worked for a small firm in 2004 doing my own buying and selling. It was a pawn shop.”

**Customer 4.2D:** “Because at the time I was working for someone else, sometimes I saw that guy was not paying well. When it’s about maybe Friday, he will just come and start shouting so I was not getting happy because I was expecting my pay.”

**Case E:** “Yes, starting doing general job. Pushing the wheelbarrow and I start learning laying bricks.”

Being self-taught and influenced by family are two more elements that emerged to present evidence of contextual constraints in the township construction supply chain. When respondents displayed motivation to begin their own businesses without any desire to work for an employee, their background and financial situation dictated that they had to try and find ways to learn how to set up and run their businesses themselves, and through trial and error. Further examples showed that those respondents who were involved in family businesses that did not have the opportunity to attend tertiary institutions nor wanted to work for an employee, were influenced by

family. The family who ran businesses in the township construction supply chain had an influence over respondents to stay on and continue. Evidence also emerged that respondents who created family businesses wanted their family members to continue with their businesses. Interestingly, one respondent worked two jobs to ensure that he could establish and run a family business together with his full-time job. This was to ensure that he would be able to sustain his broader family's needs.

On the contrary, those respondents who had the opportunity to attend tertiary institutions and study in the field which interested them were similarly still drawn by their family's commitment to continue running their family businesses instead of looking for a job in their specific field of study. This helped ensure that the business remained sustainable and could continue to provide for the entire family, both for future generations and those who were retiring from their positions in the company. The dependence on these family businesses due to the township environment in which they operate was therefore evident.

**Case A:** "I [was] involved in the construction industry before I started this business. I have never worked...I have never been employed. I was a builder. I am skilled in that – very, very good."

**Supplier 1A:** "My brother actually works in President Bolt Centre, in Fordsburg. *Ja*, so he works there as well, so I think maybe he just brought that business into this place. Most of it he just provides for the family."

**Customer 1A:** "I didn't go to school and so I just [saw] and thought okay, let me open my own company."

**Case C:** "They [the granddaughters] didn't want to go to school. They said no. So I said okay, they wanted to start their own business."

**Supplier 4D:** "My dad was a builder for many years. He started building in the early 60s and obviously growing up. A lot of the school holidays I would spend a lot of time with my dad on building sites. However, I didn't want to go into the building part and I thought later on after finishing my schooling and my military career, how I could get into the industry, but not on the building side. And that's when I decided I would love to go into the re-selling and the manufacturing side of the building industry. I loved what I did. I understood it very

well and I thought I had a lot of knowledge and background in the construction building sector and I decided to try the supply chain of the building industry.”

**Supplier 5E:** “There was no motivation really. It was just something you had to do – that’s how family is, especially being Portuguese. It is always a family. I got accepted for architecture, but I chose a business degree because of my business. I was studying, I joined straight here, I never worked for anybody, I have been my own boss and I have been working for my dad [since] I was a kid.”

Technical colleges were an option that respondents took during or after their schooling career to get the skills and experience required to begin a trade, or their business ideas, in the township construction supply chain as quickly as possible. The easiest way they found this to be possible was to learn a trade and begin working. This in itself left respondents contextually-constrained as they may have missed alternative opportunities while they were solely focused on earning money to support themselves and their families. Furthermore, attending these technical colleges offered an option for their businesses to become formalised as they would obtain a trade certificate that assured the quality of their trade.

**Customer 1A:** “I did [go to school], I do have papers for the plumbing.”

**Customer 2B:** “That’s where I used to get my jobs from, that’s where I got a lot of them. You go to a bank and insurances and all that, I used to do that. There they asked for, like, a construction certificate.”

**Case C:** “I went to school. There was a school here in Soweto where they taught us how to make bricks. *Ja*, there was a certificate; they used to test the bricks.”

**Customer 4.1D:** “Yes, I got a diploma in marketing management, but this building I did it at school at secondary level. That’s why I am aware of this construction, and also my father was a builder. Yes from grade ten, they teach you practical and theory, real brickwork. Even if you go to the college, that same stuff that you are learning. We were actually doing it twice a week, one day we would go for the theory, on Fridays that is when you go for the practicals: a whole two

to three hours. In my case I am also affiliated with Gauteng Master Builders Association.”

**Customer 4.2D:** “The plumbing certificate I have got.”

**Case D:** “I went back to Mozambique to try to apply for papers but today Mozambican papers here in SA, they don’t work. So I joined the Deal project from 2013 and then I went there as a contractor and then they took me as a project manager and I started to get a lot of skills from there.”

Customer 1A, Case D and Customer 4.1D were all foreigners who had come to South Africa in search of a better life for themselves and their families. The data gathered from these three respondents again emphasised the contextual constraints experienced, not only in the respective countries where these individuals were born, but also the struggles experienced doing business in the context of South African townships.

All three respondents left their home countries due to the political instability and lack of opportunity in the respective business environments of Zimbabwe and Mozambique. Having their families still in Zimbabwe due to the financial constraints to get all members to South Africa, respondents generally came to South Africa on their own and sent back money to continue supporting their families. Once they had enough savings from the businesses they started in the township construction supply chain, they could slowly begin to bring their family members to South Africa to continue providing support for them. Data further suggested that foreigners still feel the contextual constraints of South Africa as well, once they had established themselves and their businesses in the township construction supply chain.

**Customer 1A:** “Yes, I am Zimbabwean. *Ja*, when I work I send money, every month. There’s still my mother there. It has been difficult; there is no more work in Soweto. That is why sometimes I go somewhere else to look for work, you see.”

**Case D:** “No, I am not South African, I am Mozambican. *Ja*, it’s to look for a better place where to live because in Mozambique it is very difficult. There’s a lot of opportunity [in South Africa]. I started to work in construction in 2004. I was a general assistant and I saw that there

is nothing that it would give me after one year general assistant. So I started to work with electricians and I became an electrician in 2007.”

**Customer 4.1D:** “No I’m a Zimbabwean. I actually left Zimbabwe in 2003 when things began to be bad at home. That’s when I left for South Africa. I worked for six months [in South Africa] then I actually invited them [family] to come. That’s why it wasn’t easy because in my case at home actually I did marketing management, but when I came here it wasn’t easy for me to get a job. That’s why I had to do construction. It’s difficult for us, especially foreigners to break through. It’s not easy even if you want to go for the tender processes, the moment they discover you are a foreigner, they close you up.”

Coupled with sources of skills, previous experiences and the realities that foreigners need to face; insights into the history and motivations of respondents provided further evidence of contextual constraints in the township construction supply chain. These constraints were identified as business formality problems, family member dependence on businesses in the township, business owners working late into retirement, and no source of readily available starting capital.

**Case A:** “So what made me to go into this industry, it’s because of the challenges that we have in terms of formerly running our building companies. And people are taking taxis to go and buy cement – far away, because we’re not going with a wheelbarrow to Diepkloof to buy cement. *Ja*, we don’t have the logistics and space [in the township].”

**Case C:** “I’m working and can’t retire because I’ve got grandchildren... It’s tough [to grow the business], because we had children [who were] at school.”

**Case D:** “*Ja*, my main motivation is [that] on the construction site, there is no future. So what made me have my construction company was for my future myself, to start working hard right now, because when I am 40 years and there is nothing you can do anymore and I didn’t go to school, so I was wishing to start a thing to do. And then I was told that if I have my own construction, maybe in 40 years I will

start another kind of business, because I will see myself to be old and then I won't manage to work again."

**Supplier 4D:** "As a youngster I always wanted to be my own boss and my dream was always to start my own company and I knew that I wanted to be a successful businessman. I matriculated and from a very early age coming from a poor background we used to buy and sell whatever we could to make some extra money. I did my military service of two years and then I started off my business. I had a home, which I went to the bank and asked for an extended bond on it and with the extended bond I went and bought my first truck and started my first branch of the retail business and that was approximately 25 years ago."

**Case E:** "*Ja*, for my family, and for me myself to have a better life."

### ***Key Relationships***

Having documented the contextual constraints evident from an entrepreneurial background perspective, the relationships that exist in the township construction supply chain among business, customers and suppliers has brought to light more constraints that arise due to context. Before looking at those specific supplier and customer relationships that translate into contextual constraints, it is important to understand exactly who the players are when looking at the township construction industry.

When interviewing each case, it emerged that although a few suppliers were used within the immediate township construction supply chain (those suppliers who were included in the sample), most of the businesses received their supplies from outside the township construction supply chain. These suppliers included larger well-known retail chain type hardware stores, larger private hardware stores, and building supply companies and other large wholesalers that often bordered the township communities or were far outside the township community. Furthermore, the larger suppliers who they did use often extended the businesses credit in the form of accounts.



Table 4: Data summary of suppliers used outside of the township construction supply chain in each of the five cases

Case	Suppliers' Names	Data
A	Voltex, Cashbuild, Stewart and Loyds, Excelsior Paint	"I open accounts with big companies. For now I am on an advantage of having accounts because of my track record. I go to Cashbuild, Voltex, Stewart & Lloyds also, Excelsior."
B	Jada's Hardware, Supertec Ceilings and Boards	"A lot of places, but mostly I use Jada's Hardware and Supertec. They are close by. I've got an account with them, I have been using them for the past seven years."
C	Booyesen Hardware, Cashbuild and Viking Hardware	"From Cashbuild, Viking for cement and there is a place there in Booyesen, Booyesen Hardware."
D	RMM Building Supplies, PHI Distributors	"We have preferred supplier. We are using RMM and the biggest places, but we are also trying to get small things from PHI."
E	RMM Building Supplies	" <i>Ja</i> , from here (RMM Building Supplies). <i>Ja</i> , if I go somewhere else I mean, the customer there buys the materials, I just build."

As seen above, all five cases used some form of wholesaler, retailer or building supply company that was outside of their immediate township construction supply chain, or bordering their township community. Contextually, the relationships built between the cases and these outside suppliers have yielded interesting results. When each case and their relative suppliers and customers within the township construction supply chain were asked how they improve supplier relationships, three themes stood out. From the suppliers' sides, allowing more flexible payment terms on accounts helped business owners in each case navigate the extra complexities associated with the township construction supply chain. Examples of these complexities may come in the form of late payments from the business owner's customers, an inability to pay accounts due to unforeseen crime in the township, or cash flow problems in the business when the business owner is unable to cover expenses and needs the money to live and take care of their families.

From the business owner's perspective, this gesture from suppliers is generally reciprocated in the form of on-time payments. This helps ensure that relationships are kept strong between the two players and allows some assistance to navigate township complexities. As a result, entrepreneurs are able to maintain a good reputation, receive better pricing as the business grows, and builds a good track record for other suppliers as well. Unquestionably, the results show a mutually beneficial relationship that is built to accommodate the contextual constraints in the township construction supply chain.

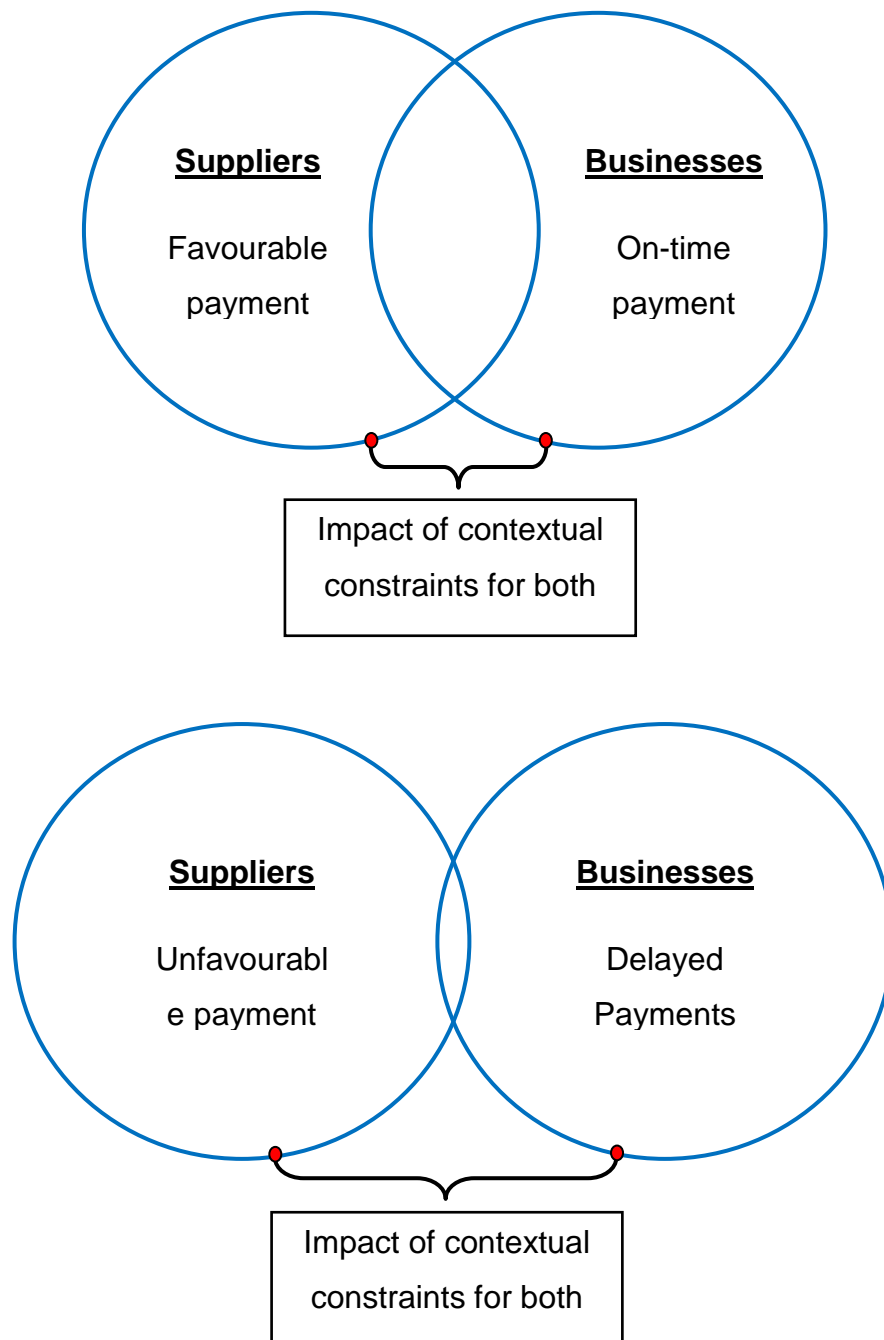


Figure 11: Mutually beneficial supplier business relationship reducing contextual constraint impact

**Case A:** “I don’t want to take advantage of them [suppliers]. I want to keep this... I just want to be on time. Unless there are unforeseen circumstances, then I can explain to them. But if things are going well – whether going well or not going well – but I have to make good.”

**Case B:** “They stop supplying [if the customer does not pay]. I have had a lot of frequent basis. *Ja*, they [suppliers] do – they do understand, but not more than two months, but the best thing is to open an account with them, so that they know you won’t run away; it’s always better. I get 60 days.”

**Case D:** “I think if we get more business and then [the] supplier gets more.”

**Supplier 4D:** “We usually get 30days from statement are our terms that we have. So it gives us leverage where we buy for the month of October and pay at the end of November. Yes we get a settlement discount, we squeeze them for a settlement discount and that helps us. That has been our company policy for the last 25 years: good payment terms. We show them that we pay them on time every single time and in turn pricing is a huge, huge factor to us and that’s what keep it going every time.”

**Case E:** “*Ja*, everything is done and no one can come to RMM [supplier] and complain ‘Lolo is running away, doesn’t finish the job’. *Ja*, I mean more job I get it from there [the supplier].”

**Supplier 5E:** “Suppliers aren’t an issue because there is a golden rule that I always practice is you pay on time every time. You do not stretch your suppliers because they will hold it against you. One late payment and they say, ‘That guy doesn’t pay’. We get settlement discount 30 days, that’s it.”

From the respondents’ perspective, the customer-business relationship was very important for the businesses’ success. When respondents from each case were asked how they improved relationships with their customers, customer satisfaction was a prominent theme. Customer satisfaction in the township construction supply chain comprised being friendly to customers, providing sound advice, providing fair and

justified pricing, good quality products or services, promptness, and making each interaction a personal experience for the customer.

**Supplier 1A:** “I think you need to be friendly with customers and just help them. Provide them with what they need and advise them if you don’t have the stuff. Just say, ‘We don’t have this, just go somewhere.’ Just give them some other options.”

**Supplier 2B:** “Our basis for business is good business ethics. We offer our customers a fair price, good service and honesty.”

**Supplier 3C:** “To make it [customer relationship] strong is to do his things quality, give him good price. They can trust that you do nice things.”

**Case D:** “From my customer side it is to deliver quality. You must deliver the quality.”

**Supplier 4D:** “Giving them a good price, the service they deserve, promptness, on-time deliveries, product knowledge, and customer satisfaction. Yes a lot of times we do, I spend half my day giving advice to clients.”

**Case E:** “I always do a good job, the customer must be happy.”

**Supplier 5E:** “It’s very personal, you have to be personal. Shopping has to be personal. It [customer relationships] gets stronger when you give good advice and you help them when they need it, and that happens often. Service is key, the rule number one that I learned from my grandfather: you don’t have to be the cheapest, you can be the most expensive, but you make sure you are reliable.

Likewise, contextual constraints also emerged when analysing the customer and business relationships in the township construction supply chain. There were instances where trust played an important role in determining whether respondents would extend credit to their customers. Respondents reported that they were very reluctant to extend credit as customers in the township construction supply chain were perceived to have no money because most lived in the township. Previous experiences of customers who live in the township, and who buy from these business owners, also played part in convincing business owners not to extend credit. However, when customers were loyal

and had been buying from the businesses for extended periods, business owners did provide them some leeway to help customers pay their expenses at each business. Some customer's buying patterns were also recorded to reveal further contextual constraints when more importance is placed on luxury items instead of staple products.

When asked if customers were offered credit from each case, there was an overwhelming response that cash was their payment method. This showed that they also understood why business owners would not extend them credit. Additionally, it can be noted that customers' preferred payment terms in the township construction supply chain is cash.

**Case A:** "I don't want to go the credit way. I don't want to go the credit way because I know customers are too tricky. When they come you become soft, but when they are supposed to pay it comes another challenge. I only give credit to those we have been working together for long... Trust is most important. And being able to provide what they need, that can sustain our relationship."

**Supplier 1A:** "No, I don't do that [extend credit], but the least I can do is just a discount."

**Supplier 2B:** "We need to understand we are dealing with an uneducated customer base and so we need to ensure trust through guidance and assistance with honesty. We do not do credit for religious reasons, but we do offer customers a best cash price discount to try and help out."

**Case B:** "If they can understand that they [customers] are delaying our payments. Payments are bad. Normally when we do business at the moment, the payments are being delayed – always. Our payments take long to come. I also do private work, but only with people who are reliable."

**Supplier 4D:** "A lot of guys looking for credit and we do assist where we can and we try and get cover on some of our guys through credit guarantee just to guarantee payment on our side. If it's a smaller guy then we just give him 30 days, a current account. So he will purchase from the first of the month to the 25<sup>th</sup> and he will have to pay it by the 30<sup>th</sup> of the month."

**Case E:** “To make it easy is just to work hard, push the job; you mustn’t be being late or taking long time to finish the job.”

**Supplier 5E:** “I do [extend credit], but it depends. Yes [extend credit to repeat customers], but there is no guarantee there. I see it and also the most difficult part is how things have changed from the basics to the more expensive stuff. I will give you an example: Your bread and milk is staple, I sell less bread and milk now than I ever did before in my life and you think we are in recession and that’s what they [township customers] eat to survive, yet they spend money on cell phone cards. My cell phone cards and cigarettes have taken over my milk and bread sales.”

*Table 5: Summary of customer’s preferred payment method to each case.*

<b>Customer from respective case</b>	<b>Preferred payment method</b>
Customer 1A	“I pay him cash.”
Customer 2B	“No, I don’t have an account. I pay cash.”
Customer 4.1D	“In my case I normally use my business account debit card. Sometimes I use cash, but sometimes I normally swipe.”
Customer 4.2D	“Cash.”
Customer 5E	“No, no, it’s cash.”

### ***South Africa’s Apartheid History***

In comparison to the abovementioned contextual constraints, this result was revealed more subtly and has revealed an important part of South Africa’s Apartheid history that still acts as a constraint in the township construction supply chain. This is due to the fact that there has been a historical and socio-economic injustice on black South Africans who were forcefully dispossessed into township and rural structures. Even though the results did not yield exact details, subtle responses indicated that the effects of the apartheid system pre-1994 are still constraining factors in the minds of township business owners. Instead of revealing conscious thoughts of the exact details about how the past oppression on black South Africans has still caused setbacks,

subconsciously the effects of race can still be observed, and the power of the distance felt between black and white by way of what each represents. When respondents provided an answer, any response referenced to the word “White” or “the past” (or similar) was noted for analysis.

**Case A:** “I can say because of how the set up was previously. That’s cost us maybe not to have advantage in terms of formalising our businesses. Ended up now being like businesses that are not recognised properly.”

**Case B:** “And also white companies, when they come here they need a BEE company. So they would use me.”

**Supplier 2B:** “We need to understand we are dealing with an uneducated customer base.”

**Supplier 3C:** “I worked for a white guy whose name was Arthur – I worked there for five years and the guy [taught] me this job. *Ja*, that was a very good teacher.”

**Case E:** “Oh. White people [are my main customers]. In the suburbs, yes. Like Midrand, Pretoria, Wapadrand, Graaffontein, Joburg. Um, *ja*, no, like I was working somewhere and then the other white man was always coming on the Sunday and then every time when they come there I was working on Sundays, they find me I am busy working on the Sunday.”

**Supplier 5E:** “My staff totally depend on me to provide them with a wage. Just dragging their feet that’s the problem. You get paid the bare minimum that’s how it’s going to be, it’s not going to be more than you know.”

**Customer 5E:** “So I think if I look back in terms of... well I am now 58 years’ old, when I started off my career there were also limitations because it was back in the old Apartheid days.”

#### 5.4.2 Resource Constraints

The main resource constraints that became evident from the data can be grouped into three main themes. These themes include financial, physical and technological constraints within the township construction supply chain. These three resource

constraints are typical identified in most third world economies, especially in the context of more confined environments such as South African townships.

### ***Financial Constraints***

Financially, most respondents complained of financial insecurity while working at jobs before they began their own businesses. This financial insecurity was evident as respondents began their own businesses due to the fact that they were not earning well enough at their previous jobs to be able to cover their expenses. This is because the jobs that they were employed at provided minimum weekly wages, or respondents were not being paid by the companies for which they worked. As a result, respondents were always left with the burden of financial insecurity. This is because navigating through the complexities that a business presents naturally, on top of difficult contextual constraints, is extremely difficult. This means that financial security becomes worse even while owning a business. As it is, business survival and growth is already a burdensome objective under favourable conditions, let alone in the context of the township construction supply chain. However, given this financial insecurity and the risk it carries, respondents in most cases still believe and perceive that starting and running a business is still a better option than getting a better position in the form of a job to gain financial stability and security.

**Case A:** “*Ja*, financial support, I think that can make it [progression] easy for us.”

**Case C:** “I used to work for someone, and now he didn’t give me enough money. I started business because I wanted to grow, because I used to work in town, then there was no income and I said let me start. *Ja* [it was for the money mainly].”

**Case D:** “You have to come back here and study another five or six years at school – which I won’t afford because I don’t have that much money.”

**Supplier 4D:** “In turn those people will have money in their pockets to spend in our stores. Nobody has money to live.”

**Customer 4.1D:** “The money that they offered wasn’t good enough and I had to join those guys in construction.”



**Customer 4.2D:** “I have also got my needs to pay like I get paid so much, but I see that so much is not going to help merit is not paying my rent and I’ve got family, so I had to try something on my own.”

**Case E:** “I stopped, because the salary was not enough. It’s the money [that stops my business from growing].”

When respondents did decide to begin their own businesses, they had another financial constraint to worry about: access to capital to begin their own businesses. Private equity funding and bank loans were never a strong feature in the data and is most likely explained by the lower level of formal business knowledge which inhibited respondent’s from being able to structure a business plan to present to potential funding providers. With little financial resources and assets to their names, business owners in the township construction supply chain are considered high-risk by financial institution standards, and so loans become nearly impossible to achieve especially due to high deposit requirements and interest rates.

Be this as it may, respondents presented data that indicated a very strong savings culture in the township construction supply chain. As a result, entrepreneurs become creative when finding and sourcing alternative funding through additional side jobs, saving part of their salary if they worked before starting the business, and some questionable unethical strategies while at jobs onsite working for a boss. It became apparent that respondents mostly began their businesses within the township construction supply chain, but as time went on and their businesses grew, owners opted to find business outside of the township construction supply chain as quickly as possible. This was due to the perception that the township market was no longer opportunistic as 1) customers in the market had no money to pay for their products or services; 2) owners had experienced bad debt and competition in the form of informal contractors; and 3) traders undercut prices to the point where they were no longer able to make meaningful margin on their sales.

**Customer 1A:** “Here is Soweto, *ne? Ai*, there is no money. *Ja*, here, *ja*. It is too small. There is no work. They cry, and ‘I haven’t got money’, it’s not month end. *Eish*, I ignore it mania lot of people owe me here in Soweto, more than a year. I just leave it [bad debt] like that.”

**Case C:** “The time when I was working, I had some money from my boss, and I used to buy peanuts and sell to my boss’s customers. *Ja*. [made enough money to start your business]....I used to put money aside, *Ja* [it was easier to grow with money]. Yes, I did save it, I just kept the cash.”

**Supplier 3C:** “Sometimes people are low, later they phone and say ‘Lucky, that quote from January...’.”

**Case D:** “I was starting to look for someone to help me doing that as a ... and then I was lying for the boss and saying, ‘That person is a contractor’, meanwhile I was the one who was managing that person. And then as soon as he got paid we go half/half. So I managed to buy a truck in February, and that is where I started my business.”

**Supplier 4D:** “The easy part is to try and get more capital into the company, or should I say it’s the more difficult part.”

**Customer 4.1D:** “Areas like Sunninghill, Randburg, the whole of Gauteng as far as Krugersdorp because in the township, to be honest, there’s no money. Even if you can get a job in the township the money that they will offer you won’t be even worth it to cover your builders. If you are targeting the township I don’t think you’ll make it because, I’m telling you, in the township there’s no business. If they want to give you a job, the money they offer you is not going to work. I have tried to work in the township, but it didn’t work because my rates are different. They won’t afford the quotation that you are going to give them. You cannot compete with those guys [informal traders and contractors] because they are too cheap. The price that you are giving them, they will come and take a quarter because they have got nothing to lose.”

**Customer 4.2D:** “The problem now with the township people, they don’t want to pay. Payment is a problem. They need a good job and it’s a big job, but they need the money. Yes, [they only pay me in parts]. They accept the job, but as time goes now he start having problems, you agree and then tomorrow after the job is going then say this money is too much, we must negotiate. So you don’t

negotiate in the middle of a job you see. So those are the things there.”

**Case E:** “Before ... I was doing the piece jobs. Save, save, save and then that guy I am talking about, they found me there. It was construction also, and they found me there and say, ‘Hey man you’re working hard and doing a good job’. So I am running a contract also and then I have some paving I want to do at Boksburg.’

**Supplier 5E:** “No they [township customers] budget. In my store they budget a lot, they say, ‘I’ll come for this some other time, I don’t have enough’... Difficult is the financing part, you have great ideas, but ideas come at a cost and in this economic climate it doesn’t guarantee success.”

### *Physical Constraints*

Data revealed that there was also a lack of adequate physical resources in the township construction supply chain. These physical resource constraints included a lack of infrastructure, access to land, as well as transport. These resource constraints are generally more related to the environment in which the players of the township construction supply chain operate. The result is an even more difficult environment not only to live in, but also to operate a business out of.

**Case A:** “We started from the street, we started with a table this size. There were two plugs, because I had this in mind but I didn’t have the capital to start big. So from the street, next to Thabo’s shop, just opposite the shops, there is a place there where I used to sit, where I started this business. Like if somebody comes here and says ‘I am looking for 20 tins of paint’, I don’t have capacity – that’s one thing”

“I helped him to start his own business, but now because of the challenges that we face in business he decided no, he cannot make it, the rental is too much for him. I also pay rent here, R3500 a month.”

**Supplier 1A:** “*Ja, ja*, just an open space you know, which would be close to people, because when you take a look at this place [shipping container] you know, it is lonely.”

**Case B:** “There was demand for the product. Lack of transport and all that.”

**Customer 4.1D:** “No transport, they [informal traders and contractors] will just walk by foot and do the job done.”

### *Technological Constraints*

Given that the above basic physical resources were a constraint, it was expected that the data would yield some evidence of technological constraints among construction supply chain players. It was interesting to note, however, that those businesses who were well-established in a building with electricity and internet had well-established IT systems that acted as enablers to the businesses (this is covered in sub-question three in more detail). As for those respondents who were not so fortunate to have an established business base, the absence of technology acted as a constraint on business efficiency. The use of more traditional marketing techniques to reach customers also indicated that technology was a resource not readily available to players in the township construction supply chain. For example, there was no mention of the use of social media platforms such as Facebook, Twitter and Instagram as a means to promote respondents businesses, which for today’s standards of marketing and promotion leaves a business on the back foot.

**Case A:** “Word-of-mouth. For now we do it word-of-mouth and we are intending to go to the media, Jozi radio, there’s a local radio that most people are listening to. Then flyers. We are using WhatsApp, not Facebook. We do use WhatsApp.”

**Supplier 1A:** “They buy cash, we don’t have a card machine. I report to my brother. I have a book. I write it in and I just give him some money that I work with today.”

“Well we did billboards. We did some flyers around here.”

**Customer 4.1D:** “I actually advertise on Gumtree, sometimes I actually use the advertising agent. That’s how I get my jobs.”

**Customer 4.2D:** “I know how to advertise so that I can have more work. I make business cards and give to my customers and I give them my address and then they call me and then they ask me...”

### 5.4.3 Business Model Innovation in the Township Construction Supply Chain

Ultimately, the findings above suggest that entrepreneurial bricolage, and thus radical innovation, is possible in the context of the township construction supply chain of South Africa. These constraints have been broken down into two separate sections, contextual constraints and resource constraints. In the township construction supply chain specifically, it is clear to see that the environment in which businesses operate is governed by these constraints. Without a doubt, this suggests that contextual and resource constraints hinder the efficiency and operations of these businesses across the supply chain compared to construction supply chains in the formal economy of South Africa. Perhaps businesses in the township construction supply chain are constrained, but despite this, these businesses and customers in the supply chain still find a way to co-exist, creating a unique and complex construction supply chain that is still functional. According to the resource-constrained theory and the definition of entrepreneurial bricolage, this environment is and should be poised for radical innovation for businesses to thrive and succeed. Given these findings, the consideration of business model innovation by entrepreneurs was assessed in order to confirm or deny that this type of environment does in fact foster business model innovation

Investigating entrepreneur's consideration of business model innovation was explored. The aim of this was to determine how business owners in South African township construction supply chains consider business model innovation, as well as the actual innovation elements present when setting up and running their businesses. Figure 12 details the structure of results for business model innovation in the township construction supply chain.

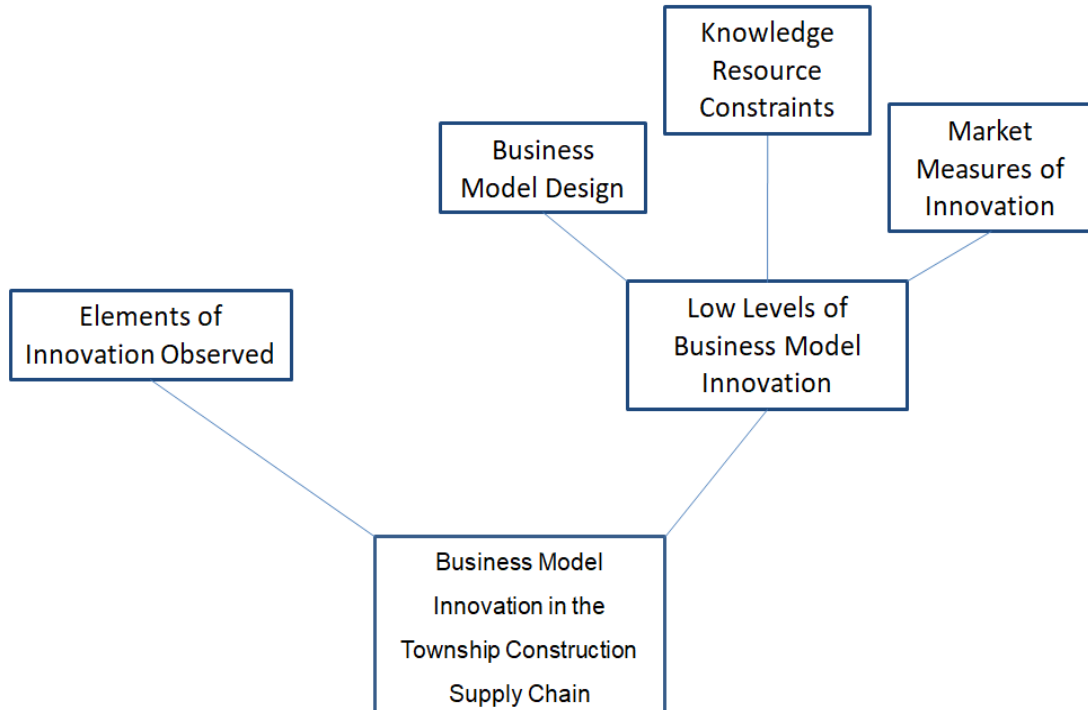


Figure 12: Results structure for business model innovation in the township construction supply chain.

Upon initial review of the results of this section, two major themes became prevalent among respondent's data. Each theme relates to business model innovation, however, on different parts of an innovation type spectrum. While some respondents displayed strong elements of innovation, the majority of respondents showed a significantly low level of business model innovation in the township construction supply chain. Those innovation elements that were identified were either business that had been established for a long period of time within the township construction environment, or that mainly operated as suppliers in the formal section of the construction supply chain. The rest of the sample displayed low levels of business model innovation, of which the majority of these respondents were operating within the township construction environment. These low levels of innovation were evident in the form of each enterprise's business model design, knowledge resource constraints, and the market competitiveness that each business had built up in the fiercely competitive construction environment.

#### 5.4.4 Elements of Innovation Observed

Although there were not many instances of business model innovation observed among respondent, some of the respondents, including Supplier 2B, Case C, Supplier 4D and Case E displayed some elements of their business models that were

innovative. Having good business foresight, optimum strategic positioning, and vertical and horizontal integration were the elements that became evident across these respondents.

### ***Business Foresight***

Case C's business owner displayed good business foresight as he established a successfully run brick making business in the township and knew that as the business grew it would become more attractive for someone else to buy. This allowed him to take the revenue generated from the brick making business over the years and gain a bulk sum of money once the business was sold. Furthermore, the owner displayed good business foresight to keep ownership of the land on which the brick making business was operating and agreed with the new owner that he would pay him rent for the property. This helped provide the owner with passive income which was eventually used to buy a family home and begin a smaller hardware store that his children and grandchildren would be able to manage.

**Case C:** "Last year, [I sold the brick making business to someone else]. Rental, yes. For the yard."

Additionally, Case E displayed similar elements of this type of business model innovation in that the owner also established another business to gain revenue from which he was able to fund his primary construction business. This business was in the form of a grocery store which also paid the business owner rent within the township environment. This way, the business owner was able to save enough money to buy the equipment he needed to grow his construction business to include three vehicles for three teams of five employees each.

**Case E:** "I built a shop. *Ja*, but I don't run the shop myself. I just took someone to run it and then it is paying rent. *Ja, ja*, you see that money all of my customers was always helping paying every month, to the cars. I have three cars. *Ja*, like Polo Vivo, and Isuzu 250, and a Ford Bantam."

Supplier 4D also showed a good level of business foresight that initiated the company's business model innovation. This foresight was of a different nature to the previous two cases in that the business owner saw potential in the market that made up the bulk of the business's customer base, the township construction supply chain. Given this realisation, the business owner decided to begin a manufacturing part of his business

that would create the supply needed to provide for the business as a whole, as well as the large potential market in the township construction environment.

**Supplier 4D:** “Little supply and too much demand and I thought, how I can cover that gap? So I went out into the marketplace, found a brick plant that was going on auction and bought it and broke it down. It was in Vereeniging, built it by piece-by-piece, re-established it in Midrand and as we started setting the plant up, we then started supplying to ourselves. So we were making bricks too. That’s correct yes [we have the retail channel to distribute the bricks] and we started the brick manufacturing, which has been a great success.”

### *Optimum Strategic Positioning*

Strategic positioning also proved to be an important factor to the business owner of Supplier 4D. This was important as an initiating factor into the supplier’s business going forward upon inception of the company. From the beginning, the positioning of the business was always to be as close to the major township locations in the Midrand area as possible. For the business owner, this meant he would be able to gain access into a much larger market that, although were more price-sensitive buyers, would result in high volume sales even with a lower margin on the products the business would sell. Instead of focusing on a customer segment that was already saturated, the business owner was innovative in his approach to his business model, and was able to focus on a different segment of the market even though it may have brought more risk to the business operation.

**Supplier 4D:** “So when I was looking 25 years ago for a location, first of all the location was the most important sector for me. A lot of people asked me why I’m starting my business where it’s located and I did a bit of homework and I wanted to be very close to the townships being Tembisa, Ivory Park, Winnie Mandela, Olifantsfontein. Going back to the past of this country with the Apartheid system, I saw there was a huge gap in the market being close to the informal settlements because I knew that sooner or later we would have to supply the informal settlements. Just to give you a little idea, when I started my business in Midrand there were two other competitors and 25 years later maybe we’ve got 30 different competitors. So it was definitely the right time to get in because of the



growth in Midrand has grown substantially in the last 25 years, not only with the township developments, but as a modern hub of development as a city it has grown exponentially.”

“So about ten years ago I identified a piece of property again closer to the townships...Diepsloot again, looking at the opportunities and seeing the informal settlement and how many millions of people were living out of shacks and we have that as a country, and I identified that as a very excellent strategic spot. The price was right on the property; supply and demand was at an all-time high.”

### *Vertical and Horizontal Integration*

Business model innovation was also identified through vertical and horizontal integration into original, established business models. Supplier 4D and Supplier 2B were the two most prominent businesses in the sample to adopt this form of deeper business model innovation. This was a deeper form of innovation to their business models as the financial commitment and complexity to be able to carry the changes out and integrate the models successfully was much greater. Both Supplier 4D and 2B integrated vertically and horizontally. Vertically, supplier 4D decided to become a manufacturer of several products to supplement and eventually replace the reliance on suppliers for the same products. This also provided the business with a pricing advantage as the manufactured products could be manufactured on site with more efficiency in the manufacturing process. Supplier 2B similarly integrated their business model vertically by rather focusing on becoming the wholesaler instead of a manufacturer of a European roof product that was imported. Although at different levels of the township construction supply chain, both businesses moved backward in the supply chain to gain an advantage in their business models that would both grow the business and become an innovation to make their business models more competitive compared to the competition in the market.

Horizontally, both Suppliers 4D and 2B diversified and differentiated their business models into different sectors, outside of the construction supply chain. As of late, Supplier 4D has differentiated the company's business model to include a property portfolio that will develop, re-sell and rent properties. This move made sense to the business owner as it allowed the business to differentiate its product offering into the property sector, but did not stray too far from the core business in the construction industry due to the building and renovation that would still be required on properties

purchased by the company. Supplier 2B also displayed evidence of horizontal integration and thus business model innovation into a different sector. In this case, the family business diversified completely outside of the scope of its original construction related business to begin a series of farms on the outskirts of Johannesburg. The logic behind this move was to ensure that the family would setup and maintain a steady revenue stream even when the construction sector took a slump.

An additional integration into Supplier 2B's business model was how the company organised their delivery system. The company has a very community-based focus, being situated within the township construction environment. For this reason, the family business decided to encourage local township business by innovatively allowing only those business owners who were directly linked to Soweto to tender for the outsourcing of the company's logistics network. Today, the company owns none of its logistics fleet but instead contracts several small and medium logistics companies who are proudly from Soweto to take care of the company's deliveries.

**Supplier 4D:** "We are in the manufacturing of building materials and mainly in the supply of building materials for the construction industry. We have created two factories, we have got screening plants, we do the mining side of the sand and the quarrying side of it. I would say 70% of the market going into the townships would be from our manufacturing product. Also we have recently gone into developments where we buy and sell properties and obviously it integrates into our supply chain and using our resources makes it a lot more profitable for us going forward."

**Supplier 2B:** "We import polycarbonate roofing together with our retail store. Our family business also does some farming which is included in the business. Our transport network is all outsourced to local providers. This helps contribute to our CSR and saves us a lot of money on logistics."

Overall the above business cases displayed interesting evidence on elements of business model innovation in the township construction supply chain. This helped each business to become more competitive in the market and secure their primary business models to be as sustainable as possible without having to heavily rely on outside

parties. Levels of innovation were deeper in some cases compared to others, but nevertheless innovation elements were still identified.

#### 5.4.5 Low Levels of Business Model Innovation

After documenting the different elements of business model innovation that existed in some of the cases in the sample, the next step was to determine the reasons why business model innovation was not occurring in the township construction supply chain, even under a challenging and resource-constrained environment. Three themes became evident in the data that suggest a low level of business model innovation among the majority of the sample. These three themes include business model designs, knowledge resource constraints; as well as the market indicators that prove low levels of innovation. Although a resource-constrained environment exists in the township construction supply chain, the low levels of innovation are evident as follows.

##### *Business Model Designs*

The first indicator of a low level of business model innovation is evident in the structure and operations of the businesses that were interviewed. Not only were the structures and operations of the businesses very basic, they were sometimes non-existent in the township construction supply chain. To identify the structures and operations of the businesses in the sample, respondents were asked about how they structured their businesses and the daily operations of the business. Often, respondents did not understand the question and needed the question to be explained for clarity. The responses that were received yielded results that were not of a satisfactory nature to truly identify a structure used by businesses in the township construction supply chain. Even when the question was understood correctly, the responses around structure and operations revealed that there may have been a structure in place; however the respondents were unable to provide detailed quality information of the specifics of structure and operations. Given that there is no structure and very basic business operations, or perhaps no formalised basic business structure and operations, business model innovation becomes difficult for entrepreneurs to achieve.

In order to show the lack of understanding around structure and operations and hence a low level of business model innovation, each line of the conversation between the researcher and the respondents is presented from the transcripts. Researcher's questions to respondents are in bold.

**Case A:**

**“Okay. Of course. How is your business structured? So for example, I see you have a pay point here, a computer – how do you do it? So end of month who takes care of your finances, your operations? Is it all you, do you have someone doing it for you?”**

I’m doing it myself.

**So you do everything, from start to finish?**

*Ja.* For now I am doing it myself. This I have been doing – from the beginning of this business, I have been doing that.

**And how do you do it?**

Like this machine it is recording everything.

**Okay.**

So on a weekly basis I will check.”

**Supplier 1A:**

**“So how is your business structured, are you the only person here?”**

Yes, I am the only one who is here.

**So you are the only person. And then do you report to your brother, or your family?**

I report to my brother.

**And do you have to give him financials, or like reports on what you have sold, how much?**

*Ja,* I do that, I have a book.

**Just a normal book, and you write it in?**

*Ja,* I write it in and I just give him some money that I work with today.

**Who does the buying in your business, you?**

What...the...?”

**Case C:**

**“So tell me about what your business does, or did before? Did you have a plant?”**

*Ja.* No, I didn't have a plant. I started here.

**Just by hand?**

Just by hand.

**And just bricks?**

Yes, just bricks.

**And then when did the hardware come?**

After I had the bricks. They first gave me a deposit and then...

**How much deposit?**

Let me say maybe they put R300 for a R600 order.

**Okay, so half – 50%?**

My customers are still coming.

**They still come back. And how do you keep that relationship strong?**

Because they come and get what they want. And they leave deposit.

**And then you can get it for them.**

Yes, yes.

**And do you give them advice? For example building advice?**

No.”

**Supplier 3C:**

**“How is your business structured, are you the owner?”**

*Ja,* I'm the owner

**Are you the owner, and you have two people working under you?**

Two people working under me.

**And that's all?**

Yes.

**Nothing else?**

Nothing else.

The history? Hey it was difficult hey, just small job, small job. Sometimes I put up a gate, then after a week I am starting 1.5 like that. I was starting with the small jobs

**So what small jobs did you do?**

Fix the locks, gates broken.

**And today is it bigger, your business?**

*Ja*, today the business is coming bigger, I can do car ports, railings, balcony.”

**Case D:**

**“So how is your business structured? What is your structure of your business? Are you the only owner or do you have a partner?**

I have a partner, Gerhard.

**He is your partner?**

Yes.

**And now that side business, do you build for people as well?**

Yes.

**Do you draw plans?**

No.

**So you just build?**

Yes.”

**Customer 4.1D:**

**“So from foundation to roof?**

Yes sometimes, I have done three projects from 2004 that I started, only three projects, the rest I just do renovations.

**And now today, now that your business has grown, a lot more work?**

To be honest I’m just operating on one level, I am not saying I have improved or I have gone down.

**So just maintained?**

Yes.”

### **Case E:**

**“And what happens if there is no jobs?”**

If there is no jobs....

**Hm.**

*Ja*, we sit sometimes, but nowadays I don't sit anymore, I have always....

**...something.**

*Ja*, I have always something.”

### ***Knowledge Resource Constraints***

Similarly, knowledge resource constraints, specifically a simple level of business acumen, defined the majority of respondents in the sample. This simple level of business acumen has links to the resource-constrained environment in which the township construction supply chain is established. Contextually and resourcefully, the entrepreneurs in this environment and industry generally have a lower level of education as seen early in this chapter. This may have played a role in contributing to the lower levels of business acumen seen in respondents. Additionally, those respondents who did qualify with a higher tertiary certificate still displayed lower levels of business acumen. With a low level of business acumen due to the general industry characteristics and the constraints present in the township environment, the township construction supply chain is left with another element that contributes to a lower level of business model innovation.

Evidence to support the simple levels of business acumen that was a cause of low levels of business model innovation can once again be observed in respondent's conversations with the researcher during interviews. When asked about a few basic business terms and principles, respondents generally did not make the correct connections with the business terminology or there was a lack of understanding around the meaning of what was being asked. The researcher's questions to the respondents are represented in bold.

**Case A:** When asked about resources, the respondent was unaware of the resources that existed in his business. Once explained which resources were an example of those that could exist in the business, the question was still not understood. The respondent seeks assistance from a third party to deal with the technical management side of the business.

**“Okay. What resources do you have access and control over?”**

Resources like?

**So cash, maybe a loan from a bank, even knowledge resources, people who help you run your business. For example, maybe Thabo can help, give you some advice?**

*Ja*, mostly we have A to Pay have got these people.

**Are they the biggest one?**

They are the people that one can talk to.”

**Supplier 1A:** The respondent displayed multiple misinterpretations in this case. When asked about structure and the influence of that structure, the question was not understood. Revenue was also not understood correctly even as the person who ran the store full-time. After multiple explanations of the questions, the responses were still minimal and incomplete.

**“Okay. What has influenced the structure of the business the most?”**

Hey...

**Your family – I am guessing? So the fact that you report to your brother, why is it like that?**

Why is it like that?

**Hm**

(laughs)

**So like it could have been that he put another manager?**

Alright.

**But why is he doing it, and you must report directly to him and not someone else, to run it for him?**

Because he’s the one who owns it.

**Okay**

Yes. He is the one who owns it.

**And is this an extra revenue generator for him?**



For..?

**For your brother?**

An extra?

**So in terms of money, that he gets in, is this extra for him, on top of his day job?**

Most of it he just provides for the family.”

Supplier 1A also did not understand the concept of credit. This had to be explained to the respondent to be understood correctly:

**“Okay. Something else I want to ask you, do you extend credit to anyone?**

Extend credit – how?

**So say a good customer doesn’t have money today and he says, ‘Look I’ll pay you tomorrow or the next day.’**

No, I don’t do that, but the least I can do is just a discount.

**Give a discount. Okay, but you don’t work on credit?**

*Ja. No.”*

**Case B:** The respondent in this case provided good evidence as to how an entrepreneur with a tertiary level education may still lack the business acumen needed to fully understand the mechanics of the business and to make meaningful innovation moves with regards to his business model. In this example, the respondent is unaware of the difference between a loan and private equity funding.

**“And you started the business with your own capital?**

No.

**With whose capital?**

Uh... I will tell you now now. I used a company called Capsave, it’s in Sandton.

**Okay. So you got...**

They fund small business.

**Did they want a share in the business?**

No, they wanted a percentage.

**Okay**

Eight percent.

**Eight percent - and you still pay them the 8%?**

*Ja*, when you get paid you give them the 8%.

**Okay, but is it interest on the loan, or do they want 8% of your business?**

No, it is 8% on the loan.

**Okay, interest on the loan. So just the loan.**

It was just the loan.”

Further evidence of simple business acumen was displayed by Case B as the case was unaware of the tender processes at private entities. The business owner was unable to explain the reasons why he was unable to achieve private tenders. It seems that the business was solely reliant on government tenders to be sustained.

**“And who do you blame for that? If there are no jobs?**

Mostly the government because private entities, it is not easy to break through into them because I don't know how they choose people, because I have applied so many times.

**Applied where?**

Sanlam...

**Oh, for the private jobs?**

*Ja*.

**Okay. So the private construction jobs – you just can't get them?**

No.

**Do you know why?**

I don't know why. I think they have a list, and it is long.”

**Case C:** The businesses role in the township environment was not understood correctly. A very basic response was provided by the respondent. Further assistance was needed to explain what the role of the business may have been.

**“So what do you think your role is to the construction industry in Soweto?  
As a business owner what was your role or contribution to Soweto?**

Hm. What can I say... you mean how...

**So for instance, you are the hardware, correct?**

Yes

**So what did the people need from you that made a difference in their lives?**

They needed that stuff, bricks.

**For what?**

For building their walls and their homes.

**And their businesses maybe?**

*Ja.*"

**Supplier 3C:** The respondent did not understand who his main customer base was, nor who his target for his business was. Only once prompted was there a vague idea as to who his main customers were.

**"Yes, of course. So who are your main customers?**

Like now they know me, anywhere I can go to do the job.

**And are they home owners or are they mechanics? Who are your main customers, your targets?**

*Ja*, you can get the houses.

**Houses mainly**

*Ja*, and the factory sometimes."

Supplier 3C did not understand what the role or purpose of his business was in the township construction supply chain. This indicates that the business perhaps does not operate with a clear vision and mission at its core.

**"What is your role?**

My role?

***Ja*, why are you here? Your purpose?**

My purpose?

**So why do your customers come to you?**

No, I do a good job for him.”

The respondent was unaware of what business structure was and was unable to make the connection between how he learned to create the business he did. The question was completely misunderstood.

**“And how did you learn how to structure your business?”**

Learn?

**How did you learn how to set up your business?**

No, to learn is like people who give you money– you have to do the right things.”

**Case E:** The respondent displayed some interesting elements of business model innovation as seen previously. However, being unable to complete school, the respondent displayed a low level of business acumen which once again may have limited the innovation that is possible in the respondent’s business. The respondent had to resort to teaching himself how to build to be able to gain a skill to begin working which may have hindered the business skills required once he began his company.

**“And did you finish school Lolo?”**

No

**Okay, so to what grade?**

Grade four.

**Till grade four. And then you went straight to work?**

Yes.

**And you’ve always been in construction?**

Yes.

**Okay, and then where did you learn your skills?**

Skills? Like...

**So where did you learn how to build, who taught you?**

Just on the construction, doing work and then I start.

**So you teach yourself?**

*Ja*, I teach myself – just take the *troffel*, go on the lane until my boss they see I can do the job. And then they keep me there for a long time.”

**Supplier 5E:** This shows some limitations in the development of a business in the township. No effort has been made by this respondent to conduct simple market

research to be able to innovate his business model to suit the needs of the customer. No signs of customer centricity are evident.

**“What do customers value most from you is it quality or service?”**

I don't know, I have never asked them what they thought of me.

**But the fact that they keep coming back...**

I guess it must be the service then, they can go somewhere else if they want.”

### *Market Indicators as a Measure of Innovation*

To develop a base from which to understand the level of innovation within the township construction supply chain, respondents were asked about their market competitiveness and what they believed to be their unique offering to their customers. In an environment that experienced high levels of business model innovation, the results to be expected would be one of differentiated offerings and business models that achieved a range of goals and objectives. However, a comparison was drawn across the sample which revealed that the market competitiveness and perceived competitive advantage of the businesses was not unique for each player across the market. This showed that although entrepreneurs may have thought they had some level of innovation that made their business models unique and competitive, all the players in the township environment were achieving the same competitiveness through similar business models.

The overall market standard was evaluated to reveal a common competitiveness indicator that all respondents thought made their businesses unique in the market. This uniqueness across the market meant businesses, in relative terms, had no differentiator to their competition. This measure helped reveal the low levels of business model innovation among the sample, even among those businesses that displayed elements of business model innovation. The result meant that businesses were not as innovative in their business models as perceived, which hindered true customer value when using the services of the businesses in the construction industry.

Table 6: Summary of evidence showing case's and supplier's market competitiveness and competitive advantage.

Cases and Suppliers	Market Competitiveness	Competitive Advantage
Case A	"We're very much competitive. Because there are two hardwares that brought their stock here."	"We don't want people going far - let's take something and bring it home. The way you treat your customer. We make sure we treat our customers very good. If they know that, and they will tell others."
Supplier 1A	"For now we don't have competition. So now it is just knowing about this place, then they come."	"The quality and maybe the prices, because most of them they compare and say you know, it is town is so far."
Case B	"Because I always have work, we are always working."	"Because I think it is my work [quality]. Because I have got references. <i>Ja</i> , I think people do building sometimes, I do work fast, but whatever they are building, I have done, since I done my business."
Supplier 2B	"We are fairly competitive. We are price sensitive."	"We focus on customer service and provide them with the best price."
Case C	"Yes, there were other people [in the market]. No, not so difficult [to compete]."	"Because my delivery and service, yes."
Supplier 3C	" <i>Ja</i> , you can compare. I can go and fix the burglars if someone put it wrong. They ask 'Who put this like this?' and then I go and fix it – the other guys' job."	"Yes [my quality is better than the competition], <i>ja</i> ."
Case D	"No [I'm not competitive], my company is still small."	"The customer, always, I am giving them the best service. Like, I can source for the

		customer, because most of the time the customers are struggling to get good people, good service on buying material, and good quality. So I promise the customer that I will do good service for them; I will source everything and then I will source everything for them like material, you know, not cheap but at a reasonable price.”
Supplier 4D	“We are friendly, we are reliable, we are efficient, we try and go in as competitively as possible, and we don’t lie to our clients. We give them best service possible and that has made us successful with our business.”	“To the best of my knowledge we resolve the problem. If it’s our fault, we don’t argue with the client. The client comes first. We take responsibility, we sort it out and we move on.”
Case E	“ <i>Ja</i> , I think I’m better because always where I work before, they always call me back – ‘Come and do this, I have a customer’. Everything they want to do like building and then they call me all the time.”	“I think it is for my service, and the quality. I can’t tell you, but what I know for myself, I always am working. When the customer tell me, ‘Come on Saturday, I’m in a hurry, I want to finish the job’, I go.”
Supplier 5E	“I am fairly competitive. To survive so long I have to be competitive, I haven’t grown as fast, but I’m okay.”	“I might not be the cheapest, but I a damn reliable. If I tell a guy I will be there by tomorrow afternoon I make sure I’m there tomorrow afternoon. I don’t take the money and comes tomorrow to say I’ve got a breakdown this or that, I will never do that.”

Customers of each case also provided insights into how they perceived the cases to be competitive and why this competitive advantage made them loyal to the respective businesses. In these responses, once again no real differences were found which made customers loyal to each business, resulting in a measure of low levels of business model innovation among the sample. All the customers expressed positive feeling towards all of the business cases in the sample; however no stand-out features were evident in the responses to prove high levels of business model innovation. Customers were asked to compare the cases in question to their relative competition, their customer loyalty with the businesses was tested, and their satisfaction documented.

*Table 7: Summary of evidence showing customer's perceptions of market competitiveness and competitive advantage.*

<b>Customer</b>	<b>Comparison to Competition</b>	<b>Customer Loyalty</b>	<b>Customer Satisfaction</b>
1A	"He's my friend, I like support him. He is my friend from long time ago. Prices and service is good."	"When I'm working here in Soweto I buy from here. But when I'm not around... I buy elsewhere."	"For me – [he has] everything."
2B	"Oh since I started this construction company I have dealt with them as their prices are good for me and their service is excellent."	"We have a very excellent relationship, when I'm there, some of them, they don't mind talking to me for over an hour."	"I call them my family."
4.1D	"The reason why I choose them is because sometimes they help me with quotations because sometimes the clients will just give you a plan and say, 'Please can you do this for me?' He also wants some bill of quantities, the other hardwares, they don't	"I had a job in Germiston some time, I think it's two years and when I came here they say, 'We can't go beyond Germiston'. I had to plead with the boss. So I enjoy buying here especially when the job is in a hurry, when the client is in a	"Big warehouses like Builder's Warehouse, to be honest, the service there is very poor, especially delivery. You can buy stuff today, three days to deliver. Yes, I'm telling you. It's a nice place to visit although some prices are a bit high, but



	have time for that. They will tell you, 'Wait seven days, wait three days'. So sometimes I will use RMM."	hurry to have the job finished I prefer it here."	things like building sand, bricks yes."
4.2D	"One: they are reliable transport when they say they are going to deliver. Tomorrow morning, before you get to work the truck is already there. And the service is good. Yes they give me advice."	"Most of the time we buy here. Like last time we were building in Fourways. Yes they still deliver there and Fourways they deliver for us there."	"Transport is faster, faster. The quality of their service is very good."
5E	"What I have found with Lolo is, firstly, he is very reliable and for me that is important because of timing. Okay? He also gives good advice."	"And based on the recommendation from Ronel, she did say he is a good builder number one. And number two, he has been recommended to other homeowners as well and has done good jobs there as well. So I think the reference is also good."	"I think he is pretty clued up in terms of the different aspects of building. So what I found with Lolo was I would give him an idea and I would say 'Lolo...' – and I would try and get his opinion about it."

The above findings show a resource- and contextually-constrained environment together with low levels of business model innovation defining the township construction supply chain of South Africa. Sub-questions one and two help build on the primary research question by determining the actual mechanics of the supply chain that exists in the township construction supply chain, as well as the enablers and challenges that promote or prevent business model innovation. This way, a complete understanding around the specific details of the supply chain and business model innovation can be developed and the additional elements that are causing a low level

of business model innovation in the township construction supply chain can be documented.

### 5.5 Sub-question 1: Nature of Township Construction Supply Chains

The aim of sub-question one was to understand whether complex and unique South African township construction supply chains differ relative to traditional supply chains more commonly known in the formal sector. Additionally, the research question helped record the individual components that make up these differences in the supply chain.

As a starting point, results for businesses' roles and functions were determined in the context of the supply chain. Respondents were asked what they believed their role was in the construction industry and what their businesses do to determine what the businesses' daily activities consisted of. As a result, respondent's business model designs could be analysed to determine each business's fit into the different layers of the township construction supply chain. Once their roles and daily activities were determined, the township construction supply chain could be mapped out in comparison to traditional construction supply chains more commonly known in the formal sector.

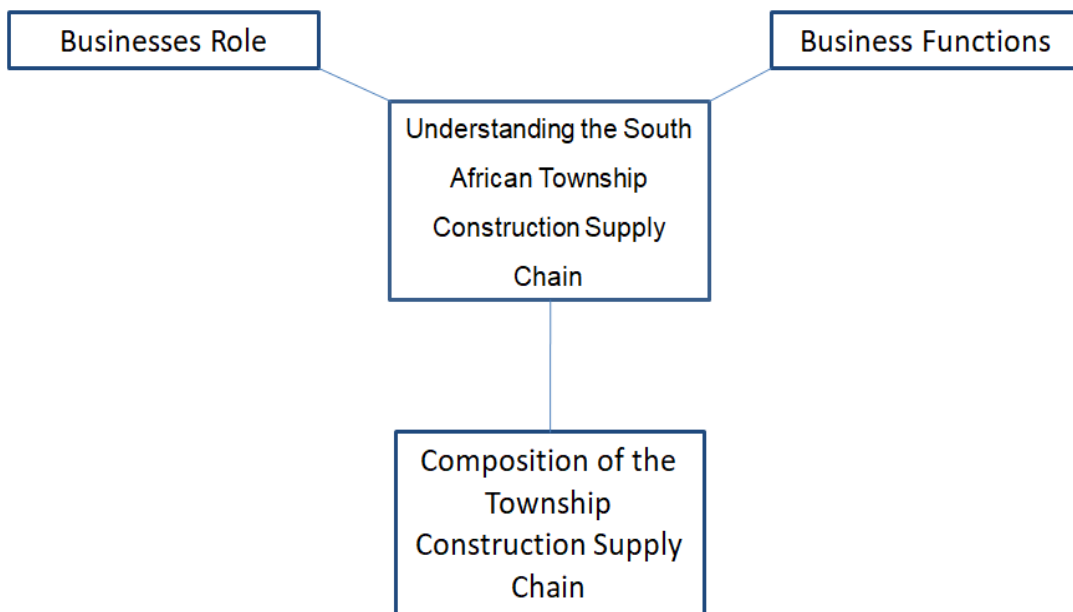


Figure 13: Results structure for the elements of the South African township construction supply chain

### 5.5.1 Businesses' Role

Various roles emerged among each case which helped identify and motivate for the positioning of the businesses within the construction supply chain. It was evident that businesses focussed of profit, community, family and supply chain efficiency as their roles in the township construction supply chain. From a profit, community and family perspective, respondents in these cases all ran businesses that focused on providing products and services to the end consumer. Although their roles were defined, they were not explicitly well-understood and thus a very basic business operation emerged that showed no signs of creative integration to move vertically or horizontally along the township construction supply chain.

On the contrary, three respondents – Suppliers 2B, 4D and 5E– provided better insights into the roles they play in the township construction supply chain. Their roles were defined more precisely and showed a greater understanding into how the businesses integrated into the supply chain. Perhaps this was because as bigger suppliers in the supply chain of the township, each business's reason for existence was centred around being established within the supply chain where the very reasons for business existence was supply chain efficiency. This meant that making a greater impact along the supply chain created not only greater business value, but shared value across the entire supply chain.

**Case A:** “My role, it's currently, because I am no more involved like before in the construction industry, I am now in the hardware industry, but I am an advisor. Like when people don't know, that's what I can do [give good advice]. The community also, because they are the ones who are keeping us open.”

**Supplier 1A:** “I really don't know, I don't know why he choose this place out of all the places, I don't know why. This business is for the family. I don't, not the profits, but I get a salary.”

**Case B:** “Community work, that is why I say mostly it is in the community – like when we do schools.”

**Supplier 2B:** “To be the intermediary between manufacturers and end consumers.”

**Case C:** “To grow personally, *ja*. And to supply for the people for building their walls and their homes. I must grow and I must also build for myself. It was cheaper.”

**Supplier 3C:** “No, I do a good job for him [customers].”

**Case D:** “Is to grow up and get more business and make more. I have one wife and three kids, three boys. Yes, [this is also a reason].”

**Supplier 4D:** “We want to be partners. We supply, for example, other hardware’s and other sub-contractors. For example, in Tembisa we supply Tembisa Hardware and we have the group Built-It, which is a bit of a logistic problem for them to get supplies and because we have managed to establish ourselves they usually come to us and ask us to supply them. Also that distribution point within the townships because of our location being so close, but also with contractors, a lot of contractors that are building in the townships the whole time... We call them ‘the bakkie builders’.”

**Supplier 5E:** “Just established I would say. I would say I’m not big enough to be a big player, but I’m established.”

### 5.5.2 Business Functions

Under this results section, respondents were asked what their businesses did in order to understand their day-to-day business operations. These line activities again gave supporting evidence as to how and where the location of each business case and each of their suppliers are positioned in the township construction supply chain. Given their activities, Case’s and Suppliers A through E showed retail, building services and manufacturing capabilities with a focus on delivering their business activities to the end consumer. Some suppliers, however, focused on selling both to end consumers and also maintained a business-to-business focus in the supply chain.

**Case A:** “What I do is I sell hardware and I supply material, sand, building sand, crushing stone, ready mix.”

**Supplier 1A:** “We sell [bolts and nuts] and we do some orders for people, for customers.”

**Case B:** “A traditional construction company. Mostly we start building from scratch, I have to go to the site and I can draw the plans, then so that they can get approved and then let me work with those plans.”

**Supplier 2B:** “We are a general hardware retailer.”

**Case C:** “Just by hand, just [making] bricks. After I had the bricks, [then I got the hardware].”

**Supplier 3C:** “Only welding, I do.”

**Case D:** “I just build.”

**Supplier 4D:** “In the hardware and building supply from the plumbing sections, we have the paint sections, we have your everyday, we’ve got the sand... So roof tiles, anything you can think of: doors, the building materials, cement, nails, screws. You mention it, you say it, we’ve got it. Full store retail, wood, timber, you could start from start to finish on a project right through us.

**Case E:** “If I go somewhere else I mean, the customer there buys the materials. I just build. *Ja*, like now I am doing everything – I am building, I’m plastering, I’m putting paving, I’m painting, tiles. Electrician and plumber I get someone to do it.”

**Supplier 5E:** “Retail sector, which includes hardware, convenience store and a liquor store. Also we wholesale gas.”

**Customer 5E providing insight for Case E:** “I haven’t seen him physically build himself, but he project manages the team. So I have found that he is more involved in a more strategic sort of role for his own teams. *Ja*, and then you also have the personal contact – which is very important from a Lolo perspective. He is a smaller builder, and I think the personal contact and knowing who he is dealing with is very important for him and his building. Because firstly he understands the requirements, if you change the requirements he will also understand if you explain it to him.”

### 5.5.3 The Township Construction Supply Chain

In order to draw comparisons between the composition of the township construction supply chain and formal supply chains (executed in Chapter 6), respondents needed to be questioned about each of the main elements that have traditionally been found in the formal supply chains to develop a base of what the township construction supply chain comprises. Beginning at the top of the supply chain, respondents were questioned about manufacturing. This helped to develop an understanding on whether the supply chain within the township actually began with the direct players in the township community itself. From there, respondents were questioned about their suppliers and where they were located. Respondents were then asked to explain their target market to understand who their main customers were in the township construction supply chain. Interestingly, these questioned revealed that the township construction supply chain was not as separated from formal supply chains as was initially expected.

The reasons behind this are evident in the results of the manufacturing questions asked to each case. Of the five cases and five suppliers in the sample, one of each, Case C and Supplier 4D, showed signs of vertical integration by integrating manufacturing functions into their businesses. The other four cases mainly found themselves situated in the retail space. This brings some light into why the township economy is not as independent and closed off from the formal construction supply chain as was originally suspected. The lack of manufacturing occurring in the township construction supply chain may explain the reliance on the formal construction supply chain to keep businesses in township construction supply chains sustained with constant supply of goods and materials.

**Case A:** “There is no manufacturer. *Ja*, we are lacking that. Logistics and space, we don’t have it.”

**Supplier 1A:** “No, we don’t manufacture. We only buy it in, mark-up and sell it.”

**Case B:** “No. No, there’s nothing. There is small brick makers on the sides of the road, that’s all really.”

**Case C:** “Brick making business, but not here at this premises.”

**Supplier 3C:** “Yes, from scratch. I make the gate and install it.”

**Case D:** “Manufacturing does not apply.”

**Supplier 4D:** “So about ten years ago I identified a piece of property again closer to Diepsloot. Again looking at the opportunities and seeing the informal settlement and how many millions of people were living out of shacks, I identified that as a very excellent strategic spot. Little supply and too much demand and I thought, how I can cover that gap? So I went out into the marketplace, found a brick plant that was going on auction and bought it and broke it down. It was in Vereeniging, built it by piece by piece, re-established it in Midrand and as we started setting the plant up, we then started supplying to ourselves. We manufacture three different products [today], we do have a huge market. I would say 70% of the market going into the townships would be from our manufacturing product. [We supply to] Ivory Park, Winnie Mandela, Diepsloot, Cosmo City even towards as far as Pretoria, which is Soshanguve even as far as that side. Soweto as well, we have been into Soweto a few times, yes, definitely. Obviously when the call is there we actually supply other hardwares in these informal settlements.”

**Supplier 5E:** “Yes many times [considered manufacturing], every day. I feel that’s the way to go. I don’t know yet, I feel we are falling behind the rest of the world, I would love to manufacture. We just import every day, it’s very sad. We’ve got raw materials in the country, but now we can’t produce.”

Understanding the township construction supply chain in parallel with the formal sector’s construction supply chain was important due to the fact that the data suggested that the two are fundamentally interlinked. This will provide a holistic view of the supply chain’s composition and how the formal and township construction supply chains connect with one another. In order to do so, a summary of data for each supplier interviewed and their respective cases will follow to allow for each businesses composition within the supply chain to be documented.

Table 8: Summary of supplier's type of business, activities and main customer data.

Supplier	Type of Business	Activities	Customers
S1A	Specialised bolt and nuts wholesale/	Sells specialised bolts and nuts to order.	"My targets, most of them are mechanics."
S2B	Family-owned retail hardware and building supplies.	Sells hardware and building materials.	"Homeowners and small business in Soweto."
S3C	Welding services and manufacturing.	Manufactures gates, locks and burglar bars.	"Ja, you can get the houses [through hardwares] and the factory sometimes."
S4D	Retail hardware, manufacturing and supply of building materials.	Sells hardware, building materials, screens sand and manufactures bricks and blocks.	"We have contractors. We have even worked with municipalities, other businesses not only in the building industry. We have a huge influx of all these new developers in the townships, of which we have been partners and suppliers into the townships."
S5E	Retail hardware, liquor store, super market and gas wholesale.	Sells hardware, liquor and groceries together with a gas re-filling capability.	"Garages, other hardwares... for the gas now, in terms of hardware, it's the end user and some contractors."

Table 9: Summary of case's type of business, activities, main suppliers and main customer data.

Case	Type of Business	Activities	Supplier's locations	Customers and location
A	Retail hardware.	Sells hardware and building materials.	Outside the township.	"Homeowners, plumbers, contractors, electricians. Ja, definitely." – Within



				the township
B	Construction and civils construction.	Builds from new, draws and works with plans.	Outside the township.	“Other businesses. It’s mostly schools.” – Within the township
C	Retail hardware, brick manufacturing and building materials.	Sells hardware, building materials and manufactures bricks.	Outside the township.	“Yes, locals in the township.”
D	Rubble removal and construction.	Builds small houses from new and renovates.	Outside the township.	“It’s home owners. We are based on renovations and minimal houses.” – Outside the township
E	Construction.	Builds from new and renovates.	Outside the township.	“They’re home owners and business owners.” – Outside the township.

Evidence to support that all the customers in the tables above are in fact the end consumer was identified during customer interviews. To do so, customers were asked what they usually bought from the store, which gave an understanding into the customer’s buying decisions. This was vital to be able to correctly place both them and each case into the correct level of the supply chain. Furthermore, the frequency of their purchases helped to confirm this. Insights into the product and service offerings of the cases were also identified while questions were asked around their buying decisions in each case.

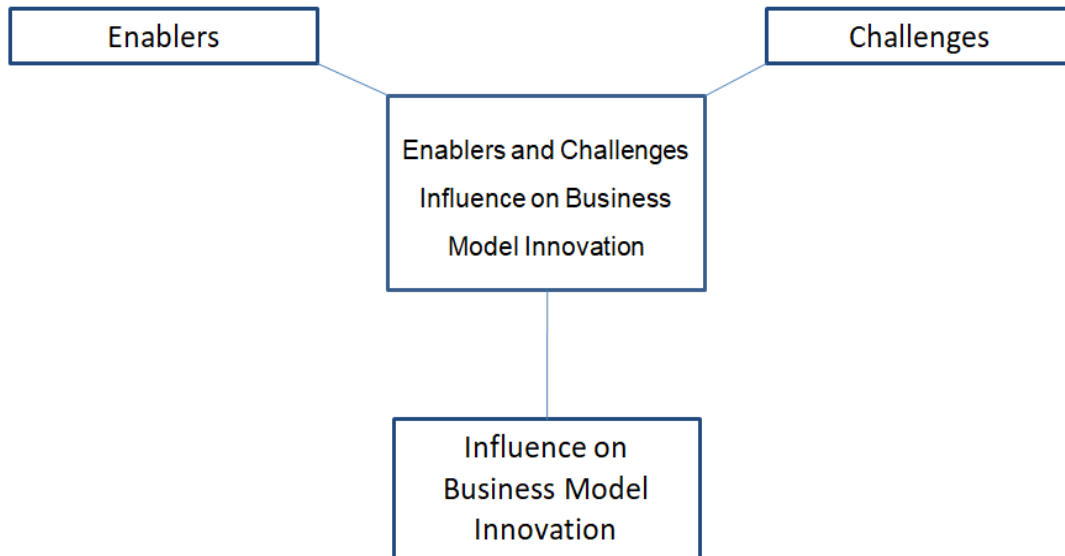
*Table 10: Summary of customer’s buying decisions and frequency of purchases.*

<b>Customer</b>	<b>Products or Services Purchased</b>	<b>Frequency of purchases</b>
C1A	“This store, I am buying everything – pipes... Conduits, no not conduit – for electric – copper pipes, everything.”	“No, it’s two times or three times.”

C2B	“Whatever it is I am going to build. Building material, I can say... all building materials.”	“Sometimes I’m there almost every day in the week; I get all the material because you know when you buy the stuff to start a construction thing you come and it’s plumbing and then it’s electrical.”
C4.1D	“I actually purchase some building material, all building material.”	“I am going to say every week. It is like, if we are working around here, but sometimes we are working in Sandton, working in Fourways, then we buy that side.”
C4.2D	“Bricks, sand, timber, all the roof materials, sand everything.”	“Three times a week if there’s business. Like last week I actually purchase here, there is a client who wanted me to do some paving using those old bricks and then I just referred him here.”
C5E	“But subsequent to that Lolo did some other renovation and building for me.”	“Well it will depend on what I need to do but I would give Lolo first preference. He would be my first choice as a renovator.”

## 5.6 Sub-Question 2: Enablers and Challenges Results

Part of business model innovation, sub-question two aimed to identify the enablers and challenges experienced by players in township construction supply chains within a township environment. How these enablers and/or challenges influence business model innovation in the context of the township construction supply chain was also documented.

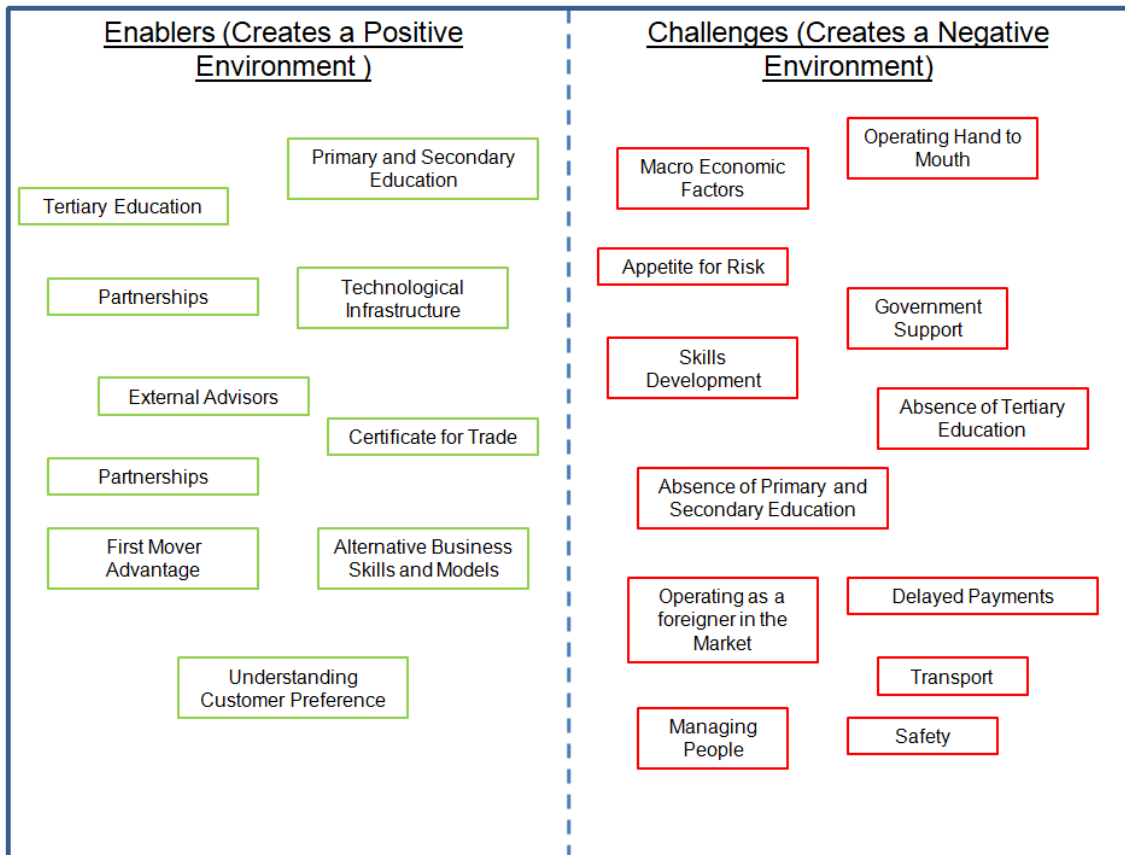


*Figure 14: Results structure for enablers and challenges experienced by players of the township construction supply chain and the influence of each on business model innovation.*

In order to begin to understand the enablers and challenges which create a complex township construction environment, the impact that each enabler and challenge has on the environment and thus each individual supply chain player's business model needed to be documented. This was done by mapping out each of the enablers and challenges identified, as well as their relative impact on player's businesses and business models within the township construction environment. The data gathered from respondents suggested a variety of challenges that existed in the township environment. Each challenge perpetuated some degree of negative impact on the business environment which in turn hindered player's business progression within the township construction supply chain. Likewise, enablers were identified in the data and linked more closely to a positive business environment being created. Hence, this had a more positive impact on the way in which business models functioned under these conditions.

As a final analysis, each environment created from the challenges and enablers was tested against how each affected business model innovation. This determined how township environments that are defined as either challenging or enabling influence business model innovation.

## Township Construction Environment



*Figure 15: Summary of enablers and challenges found in the township construction environment.*

### 5.6.1 Enablers' Evidence

The sub-headings below represent the enablers in Figure 15. Each section details the evidence of the enablers that help to facilitate a positive environment in which to do business in the township construction supply chain.

#### **Education**

Although there is no reason that education levels impacted the success or failure of businesses in the sample, those entrepreneurs who attended primary and secondary levels of education were noticeably different in terms of how they navigated the township business environment. Having a higher level of education allowed entrepreneurs to identify challenges and logically make strategic decisions to transform a difficult business environment into a positive one. There was also a noticeable difference between those entrepreneurs who studied at a tertiary level and those who only finished school. The majority of the sample displayed at least a primary and secondary level of education.

**Case A:** “Since completing my matric, and that’s when I came into the building industry.”

**Case B:** “I just finished my matric. Out of varsity, studying civil engineering, [then I started working].”

**Supplier 2B:** “I completed a Bcom Law and then honours in strategic management.”

**Customer 2B:** “Yes. [I have a matric].”

**Case C:** “I started my primary here in Soweto and then to Orlando High School.”

**Customer 4.1D:** “Yes. [I attended school in Zimbabwe]. Yes at college level, I got a diploma in marketing management.”

**Customer 4.2D:** “Yes. [I attended school up until] high school.”

**Supplier 4D:** “I matriculated and straight after I matriculated we had to do our military service.”

**Supplier 5E:** “I got accepted for architecture, but I chose a business degree because of my business. I did BCom, I specialised in business economics and accounting so because of my family ties I stuck to commerce.”

**Customer 5E:** “I went to college. I have a diploma in Finance.”

### *Partnerships*

Partnerships created a positive business environment in the township construction supply chain. It was evident that those who wanted to or that were involved in partnerships would benefit from further business opportunities. Partnerships also allowed township businesses to access knowledge from more experienced business partners.

**Case A:** “If someone comes with that [partnership], if it is something that will work for the good of the business and establishing a much bigger thing, they’re welcome.”

**Case D:** “There was a guy who I used to work with, he was my colleague. He is the one who encouraged me. And then he was supplying me with a lot of small jobs. Gerhard, [he is my partner].”

### *Technological Infrastructure*

In the modern economy that business currently finds itself operating in, technological infrastructure is a significant enabling factor in any business. Given the context in which the businesses in the sample were operating, it was difficult for them to acquire the vitally important technological infrastructure needed to run businesses efficiently. Those who did have technological infrastructure in place were in an advantageous position relative to competitors. This ensured that the business had a system that would track stock, assist with sales, and provide additional business support to create a positive business environment which fostered business model innovation.

**Case A:** “For now I am doing it myself. This I have been doing from the beginning of this business, I have been doing that. Like this machine it is recording everything. So on a weekly basis I will check. The system. We call it... A to Pay.”

**Supplier 4D:** “Yes there are. On our system we can actually go back and check as far back as six months. Our system is run by Unipos and we can actually go back and see the last price that we have paid on every single item in our store. Over six months we can see if it has gone up, gone down, so we are able to track. We have got approximately between 9000 to 10000 line items and it gives us every single stock item in our stores. It gives us maximum stock, minimum stock and it gives you a daily report of what is available. Data is very, very important, very useful tool for us and we have got full control over that.”

### *External Advisors, Alternative Business Skills and Models*

Supply chain assistance and alternative business models were additional unique elements that presented themselves in the township construction supply chain. From a supply chain assistance perspective, respondents displayed several instances where other businesses or people assisted in making their businesses a success. These included their own customers, partners and suppliers, while some respondents felt they had no assistance and had to navigate through their business environments on their

own. Interestingly, some respondents assisted themselves by beginning other businesses in the form of alternative business models. This helped to gain an extra income which helped to grow their primary businesses.

**Case A:** “I can offer people I know building, welding, electrical – we have got people like that [who buy from the store].”

**Customer 1A:** “Other skills? Like electric, I also do. *Ja*, I do electric, I am a technician.”

**Supplier 1A:** “We had some partner in Dobsonville. I wouldn’t say maybe he put some money, but I can just say maybe he just helped my brother to start this business.”

**Case B:** “Yes, the development companies.”

**Supplier 2B:** “Our main suppliers help us a lot.”

**Customer 2B:** “Well when I was a boy in the field of distribution and I was a learned man reading some magazines and things like that.”

**Case C:** “Yes. [I just knew myself]. Yes, for the yard, [I take] rental, yes. [And] I started to buy and sell clothes.”

**Case D:** “There was a guy who I used to work with, he was my colleague, he is the one who encouraged me. And then he was supplying me with a lot of small jobs. Yes, but now he is doing his own thing, as I am. He quitted on DL, he is doing photographs. But I called him back to join me on construction company [as a partner] because he has a lot of knowledge.”

**Supplier 4D:** “I look for suppliers. I always tell them they have to look at us as partners because at the end of the day if we are buying right we are going to be selling right and we always ask them to be our partners in everything we do. Not to blow my own trumpet, but myself, I have been at the heart and soul of this business day and night and I have just learnt along the way with auditors and accountants helping me along the way on how to change and certain things that I might have missed.”

**Case E:** “I just start you know? (laughs) I just start. *Ja*, so that guy, they come to me and ask me, ‘Do you have papers for construction?’ And I say, ‘no’, and they tell me they can help me. There were business people coming there, so that guy find me there. They talked to me and start helping me doing the papers. Hm... *ja* now, the other one, I build a shop. *Ja*, but I don’t run the shop myself, I just took someone to run it and then it is paying rent. I decide to get taxi. When the job is down...”

**Supplier 5E:** “My other brother. He’s with me. There are two of us we are partners. From conception, we have been partners. We have expanded this business, if you look behind you, you will see our property. Because I wanted to do architecture and I did a couple of projects in school and I was always interested in building and I learnt [building] by self-taught and by building a house...”

### ***First Mover Advantage***

In the township construction supply chain, being the first mover in the market meant entrepreneurs were in a competitive position from their businesses’ inception. By being the first business to offer the products or services in a specific area, the customers in the area would immediately buy products or services from the entrepreneurs as they would not need to travel far distances with limited transport to get the same products or services in nearby cities or towns. Furthermore, having the status among customers that the business is one of the first or is the first business to open in a township community held significantly more value than younger, less established businesses.

**Case C:** “Because here in Soweto there was no hardware.”

**Supplier 2B:** “The business was established in 1937, it includes fifteen partners and three generations of operation.”

**Supplier 5E:** “Okay so we are here from 1948, truly speaking I think we are the oldest business in Midrand. It was started by my grandfather way back in the Second World War I think. I joined the business in ’87.”



## **Certificate for Trade**

Given the characteristics of the construction industry as a whole, regulation is an important factor to consider when building or doing any construction work that may affect human lives. This is the reason that trade certificates have been created within different sectors of the construction sector, especially for plumbers, electricians, contractors and any other tradesman. In the township construction supply chain, end consumers seemed to be very aware of the regulations involved throughout the building process. As a result, when contractors conducted work for their customers, the majority were asked to check their qualifications. This meant that without the respective trade certificate for a particular trade, businesses would be left in a negative business environment where business opportunities may be difficult to come by.

**Customer 1A:** “Yes, [work is checked for quality by [customers].”

**Case B:** “Oh, *ja*, they do ask that [civil engineering certificate]. It’s very important.”

**Customer 2B:** “Like a construction certificate. [The banks asked for it].”

**Case C:** “They used to test it [brick quality. *Ja*, there was a certificate.”

**Customer 4.1D:** “Sometimes they check, but in my case I am also affiliated to these organisations as a way of safeguarding because sometimes they will ask, “Which organisation are you affiliated to?” If you are not affiliated to any organisation, some people they won’t trust you, but in my case I am also affiliated with Gauteng Master Builders Association.”

**Customer 4.2D:** “Yes they do and for electrical they ask [for the certificate], after [it’s] finished they need a certificate of compliance yes.”

## **Understanding Customer Preference**

Where entrepreneurs displayed customer centricity, their business environment as a whole would be more positive. By ensuring entrepreneurs understood their clients' preferences and needs, customers would have an improved buying experience from businesses. This in turn would translate to repeat business for the businesses, thus sustaining the positive business environment.

**Case C:** "Now they want not bricks, but smaller stuff."

**Case D:** "From my customer side it is to deliver quality."

**Supplier 4D:** "It all depends on the size of the project. A lot of guys looking for credit and we do assist where we can and we try and get cover on some of our guys through credit guarantee just to guarantee payment on our side. If it's a smaller guy then we just give him 30days, a current account. So he will purchase from the first of the month to the 25<sup>th</sup> and he will have to pay it by the 30<sup>th</sup> of the month."

**Customer 4.1D:** "The most important to them is they want someone who is honest and trustworthy. That is the most important thing."

**Customer 4.2D:** "The most important for them is to do a good job and to be honest."

**Supplier 5E:** "Service is key. The rule number one that I learned from my grandfather: you don't have to be the cheapest, you can be the most expensive, but you make sure you are reliable."

**Insights into Case E from Customer 5E:** "I think Lolo is very approachable, so if there is an issue he doesn't become arrogant and he is willing to work with you – and that is what I found with Lolo – so you can sit and talk to him. And if you need to negotiate with him he is happy. *Ja*, and then you also have the personal contact – which is very important from a Lolo perspective; he is a smaller builder, and I think the personal contact and knowing who he is dealing with is very important for him and his building. Because firstly he understands the requirements, if you change the requirements he will also understand if you explain it to him."

### 5.6.2 Challenges Evidence

The sub-headings below represent the challenges in Figure 15. Each section details the evidence of the challenges that create a more negative township environment in which respondents do business in the township construction supply chain.

#### *Operating Hand-to-Mouth*

This challenge was important to understand as it was a factor that hindered business growth and created negativity for entrepreneurs, sapping motivation to grow their businesses under this specific condition. Township construction businesses were found to be structured in such a way that they operate on a weekly basis. This means that week by week, the businesses have to produce enough cash flow to cover all their expenses incurred within that week. This aligned to the challenges faced not only by entrepreneurs in the township environment but among most individuals who live in the township. Without enough money to cover longer term monthly expenses, people and businesses in the township environment live hand-to-mouth, meaning that on a daily basis money needs to be made to be able to cover daily living expenses, most times for an entire family.

**Case A:** “Even salaries also, that is one of the challenges also because every week you have to pay your guys and then at the end of the day you’re not earning a salary – they are earning but it’s fine.”

**Customer 4.2D:** “I wish we could have more work and I have more people to have jobs so that they can also support their families.”

**Case E:** “The challenge is you must work hard, because we’re earning money a week you see? *Ja*, so I must make sure I am making [enough for] salary for the people. Every Friday [pays employees], *Ja*, so I make sure I must make the money.”

#### *Macro-economic Factors*

Macro-economic factors were additional factors that created a negative environment for township business owners. When the macro conditions of a country are not favourable, most business sentiment is down in the entire country, failing to encourage new business start-ups and growth of existing small businesses. This is especially true within the context of the township construction supply chain as additional, industry-specific macro elements need to be considered.

**Supplier 2B:** “Regulations on cement and steel, worsening exchange rates on imported goods and cost push inflation, especially with diesel, are the main challenges we are facing at the moment.”

**Supplier 4D:** “I think the downturn in the economy has put a bit of a hold on us. The political instability in the country is of huge concern if there is no political will to sort out haggling and elections. All this is a huge, huge influence in our business and usually we feel that, the minute the political part comes into play, our business is the first one to feel it.”

**Supplier 5E:** “That’s a hard one; I think negativity as in economic negativity. Sentiment in the country, and that has really killed optimism and people don’t buy and people are broke – you have to admit. People are over extended in their credit and they can’t afford things anymore. It’s [poverty] quite rife out there, people live below the breadline and you don’t know about it.”

### *Appetite for Risk*

This challenge links to the macro conditions identified above. As entrepreneurs in established firms within the construction supply chain get older, their businesses grow to a stage where there is stable returns with no business growth. Given macro-economic challenges within South Arica, risks associated with beginning, running and growing businesses are increased. When risk is increased, entrepreneurs’ appetite for that risk needs to similarly increase in order to realise the opportunities that risk presents. However, when the risks far outweigh the benefits the entrepreneur perceives, appetite for risk is drastically reduced, where low business progression is the result.

**Supplier 5E:** “Difficult is the financing part, you have great ideas, but ideas come at a cost and in this economic climate it doesn’t guarantee success. Yes, so you have a good idea there’s a product out there that you can sell at a good profit, but it doesn’t guarantee you will sell you won’t know if the mass is going to be there for it. I find that the youth, because I was there once upon a time and how maverick I was in my 20s and 30s, now you start to think what if, you know, you become conservative. You are not so hungry anymore and that’s what I find is now lacking.”

**Customer 5E:** “Ja, well I think there is obviously a lot more risk when you are running and managing your own business. In a personal capacity, when you are running your own business there are a lot of other risks that come into play, so you need to calculate your risk all the time, in terms of managing your business.”

### **Government Support**

In South Africa, government support is rarely seen among businesses, especially in the township business environment. Given this lack of support, business owners have lost hope in the government and instead take on for themselves the challenges that government should be subsidising. For this reason, additional pressure is put on entrepreneurs and as a result there is less business efficiency in supply chains.

**Case A:** “And the other thing is, I don’t want to talk about being like support from the government, no.”

**Customer 2B:** “No not at all, no they don’t. You know the protocol of the government... I have tried many times to engage with them, but I think I have just given up.”

**Customer 4.1D:** “It’s difficult. I once actually went into a joint venture with a South African lady and it didn’t actually work out with that lady. So I had to go back again and do it myself. The idea of joining the South African lady was about to go into tendering because without a South African ID you can’t. They cannot accept you, you need to have that BEE.”

**Customer 4.2D:** “Never [had government support]. I would need a lot of things and this and that and then I say, ‘Ah [nevermind]’.”

### **Skills Development**

Entrepreneurs who employed people in their businesses seemed to find development of employees difficult. When entrepreneurs are unable to have the skills and expertise needed to manage people together with running a successful operation, employee morale is drastically reduced. When employee morale is low, entrepreneurs experience low levels of productivity and an unpleasant business environment among the staff, creating a negative environment in which to do business.

**Case E:** “One is skills, skills development is a big thing and I think as a country we are falling behind and I don’t think I put enough effort into that part of the business and bringing new ideas I think I’m lacking in that, I am too scared to take a change.”

### *Absence of Education*

As seen in the explanation of education levels in the enablers, this section presents evidence of those entrepreneurs with a very low level of education.

**Case A:** “Since completing my matric, and that’s when I came into the building industry.”

**Customer 1A:** “I didn’t go to school. *Ja*, I attend primary school, up to form two. In Zimbabwe. *Ja*, I’d consider (going to university) if I have an opportunity I can go.”

**Customer 2B:** “No, [I don’t have a degree].”

**Case C:** “No, [I didn’t go to university].”

**Case D:** “I didn’t go to school, so I was wishing to start a thing to do.”

**Supplier 4D:** “Unfortunately not. I matriculated and straight after I matriculated we had to do our military service.”

**Customer 4.2D:** “No, [I didn’t study a degree after school].”

**Case E:** “No, [I didn’t finish school], only to grade four.”

### *Delayed Payments*

Delayed payments had an adverse effect on the relationships within the township construction business environment. Negativity was created between related parties in the construction supply chain as entrepreneurs did not receive the money they were expecting from their customers. This made planning an impossible task for entrepreneurs and at times hindered the businesses progression. The reasons behind delayed payments were evident earlier as contextual constraints mean most people in the township environment do not actually have the money to carry out building activities and with no way to identify if customers will pay, trust is the only factor entrepreneurs can rely on to get their money out of customers. The negativity created due to the

broken relationships caused by delayed payment contributed further to a negative business environment.

**Case B:** “That’s one, and two is delayed payment. From Government, *ja*.”

**Case D:** “Most of the clients take their time to pay and then they don’t want to pay. So most of the time we are asking for a deposit...”

### ***Operating as a Foreigner in the Market***

As a foreigner, operating a business in South Africa had fewer challenges as compared to what foreigners were experiencing in their own countries. Fleeing their borders for greater opportunities to better themselves and their families, foreign entrepreneurs began their businesses in familiar territories within the township environment. However, although in a similar environment, foreigners still face difficulties that hinder their business progression and growth. This creates a negative business environment for them to operate their businesses successfully in South African townships. The fact that entrepreneurs are foreigners already puts them on the back foot in South African townships as local businesses who are trying to survive in the township environment feel their business is being taken away from foreigners. Government also does not recognise foreigners for any BBBEE schemes in the country, making it difficult for foreigners to secure government tenders.

**Customer 1A:** “I came here to look for work man, there’s no work in Zimbabwe. There is no jobs in Zimbabwe.”

**Customer 4.1D:** “That’s why it wasn’t easy, because in my case at home actually I did marketing management, but when I came here it wasn’t easy for me to get a job. That’s why I had to do construction because that’s the only way we could actually earn.”

**Case D:** “No, I am not South African, I am Mozambican. *Ja*, it’s to look where to live because in Mozambique it is very difficult.”

## *Transport*

Due to limited infrastructure in township communities, transport is a clear challenge that hinders all business and creates a negative environment in which to conduct business.

**Case C:** “My business challenge... transport I would say.”

## *Managing People*

As per skills development above, not having the correct skills to manage people creates the negativity in the environment.

**Supplier 4D:** “Dedication, loyalty, hard work, staff – your human resourcing has to be the best, you’ve got to make sure you’ve got to get the right human resource. Managing people is a very, very important part of our business going forward, making sure that your staff know what they’re selling, their product. That they know how to liaise with the client and make sure that the client is getting the best product at the best price at all times.”

**Supplier 5E:** “It is a vicious cycle, if I didn’t train you enough to say which cement goes sand, without sand you can’t use cement, without cement you can’t use sand you know that kind of thing if you are building. Yes that’s sales, with me it comes naturally because I’m in sales [can’t really be taught].”

## *Safety*

General safety was also a challenge faced by entrepreneurs in the township community. Rife with crime, township communities’ deal with some of the most dangerous and violent crimes committed in South Africa that often go unnoticed. With this level of fear, operating a business as effectively and efficiently as entrepreneurs would like is in itself a challenge. With limited capital to install security systems, entrepreneurs simply operate their businesses with the hope that no harm will come to them or their businesses, evidence of more negativity within the business environment which is not likely to bring about business model innovation.

**Supplier 1A:** “Yes, [I am scared for my safety].”



## 5.7 Conclusion

The results obtained from in-depth semi-structured interviews have been documented in this chapter according to research question categories. The primary research question's results together with each sub-question's results one and two have been presented. The contextual and resource constraints, levels of business model innovation, mechanics of the construction supply chain as well as the enabling and challenging environments has been thoroughly documented. Each element was described in detail after conducting in-depth analysis into the data that was captured from the predetermined sample. Chapter 6 outlines a discussion of these results to understand the similarities and differences found in the literature review of this research.

## **Chapter 6: Discussion of Results**

### **6.1 Introduction**

This chapter will link the results from Chapter 5 those insights gained from Chapter 2 in the literature review. This provides the opportunity to understand whether the findings of the research are in line with the current literature of academics, or whether there are contrasting findings in the study. In the discussion, the primary research question is analysed with a resource-based view, entrepreneurial bricolage and business model innovation as a conceptual framework. Sub-question one and two are analysed according to supply chain theory and South Africa's formal and informal sectors respectively. Where additional entrepreneurial elements have emerged outside of the scope of the research questions in the township construction supply chain, the business model canvas has been used as a tool to document these. The new elements discovered and those elements that will contribute to more efficient running of the business models of a typical entrepreneur's business model in the township construction supply chain are detailed.

### **6.2 Discussion of Results for Primary Research Question**

Using a resource-based view and entrepreneurial bricolage as a conceptual framework, the aim of the primary research question was to determine the elements of contextual and resource constraints to develop the entrepreneurial orientation found among township construction entrepreneurs, which informed either a high or low level of business model innovation within township construction supply chains of South Africa. The business model innovation part of the primary research question was further viewed under a business model innovation framework to assess the levels of business model innovation, and thus the efficiency of the township construction supply chain. The requirement in the question was to develop an understanding as to whether a resource-based view and/or entrepreneurial bricolage played a role in the levels of business model innovation within a contextually- and resource-constrained environment.

#### **6.2.1 Contextual and Resource Constraints**

It was identified in the data that a variety of contextual constraints exist in the township construction supply chain. These constraints originated from evidence gained through detailed data collected on the entrepreneur's background, key relationships in the construction supply chain, as well as South Africa's history of oppression in the form of Apartheid. Furthermore, resource constraints were identified as financial, physical and

technological constraints. The tables to follow summarise the contextual and resource constraints identified in the township construction supply chain.

*Table 11: Contextual constraints results summary*

<b>Source of Contextual Constraints</b>	<b>Contextual Constraints Identified</b>
Entrepreneurial Background	<ul style="list-style-type: none"> <li>• Source of business and technical skills are gained from low-paid unskilled labour jobs.</li> <li>• Entrepreneurs began working as soon as possible to gain at least one income for themselves and their families.</li> <li>• Entrepreneurs are mainly self-taught within their businesses and learn through trial-and-error.</li> <li>• Family pressures to continue sustaining businesses as families are heavily dependent on the businesses' success to continue providing for elders and next generations.</li> <li>• Attending lower quality technical colleges due to the pressure to begin working as quickly as possible and the lack of funds to attend tertiary colleges or universities.</li> <li>• In line with Akintola (2015), foreigners experience a double effect of contextual constraints due to home country issues as well as the contextual constraints in the township.</li> <li>• Business formality problems.</li> <li>• Entrepreneurs are working late into retirement.</li> <li>• No sources of readily available starting capital.</li> </ul>
Key Relationships	<ul style="list-style-type: none"> <li>• Business and supplier relationships are an important factor to consider. The more suppliers provide favourable payment terms, the more on-time payments are experienced, thus reducing the impact of contextual constraints experienced by both players in the construction supply chain.</li> <li>• Business and customer relationships are important and highlighted contextual constraints as being friendly to customers, providing sound advice, providing fair justified pricing, good quality products or services, promptness, and making each interaction a personal experience were important customer considerations.</li> <li>• Extending credit to customers is avoided as the perception is that most customers in the township do not have the</li> </ul>

	money to pay them back.
South Africa's Apartheid History	<ul style="list-style-type: none"> <li>The historical dispossession of black South Africans into township communities during Apartheid years is still a constraining factor in the minds of entrepreneurs in the township construction supply chain.</li> </ul>

Table 12: Resource constraints results summary

Source of Resource Constraints	Resource Constraints Identified
Financial Constraints	<ul style="list-style-type: none"> <li>Financial insecurities while working as an employee exist, and this insecurity is amplified when entrepreneurs begin and run their businesses.</li> <li>Access to starting capital is difficult to come by for township entrepreneurs.</li> <li>Customers were perceived to have little financial resources available to spend enough money with businesses, prompting most businesses to venture outside the township construction supply chain for more lucrative opportunities.</li> </ul>
Physical Constraints	<ul style="list-style-type: none"> <li>Poor infrastructure within the township communities hinders business performance and growth.</li> <li>Entrepreneurs do not have the opportunity to have access to land in the township. The high density of people in the township community does not allow adequate space for larger operations and long standing family land ownership prevents property sales to entrepreneurs. Rental is the preferred option.</li> <li>A lack of adequate transport infrastructure slows down the efficiency of work done within the township construction supply chain.</li> </ul>
Technological Constraints	<ul style="list-style-type: none"> <li>Lack of internet connectivity and or electricity prevented some businesses from performing their business activities efficiently compared to those businesses which had the</li> </ul>

	<p>infrastructure available.</p> <ul style="list-style-type: none"> <li>• Traditional forms of marketing in use suggest technological constraints extend to include no new forms of vital social media coverage to promote businesses. i.e. Facebook, Twitter and Instagram.</li> </ul>
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### 6.2.2 Resource-based View and Entrepreneurial Bricolage

Given the above contextual and resource constraints identified in the township construction supply chain, a resource-constrained environment has thus been identified and defines the township construction supply chain. Using a resource-based view and entrepreneurial bricolage theories, the next part of this section will identify the entrepreneurial orientation of the typical entrepreneur found within the resource-constrained township construction supply chain to lead on to the discussion of the level of business model innovation found.

In line with the views of Rangone (1999); Barney et al. (2001); Alvarez and Busenitz (2001) and Castanias and Helfat (2001), the data presented contributes to the importance that a resource-based view has in entrepreneurship theory. The contextual and resource constraints summarised in the tables above offers additional resource constraints that need to be considered by entrepreneurs within the context of township construction supply chains. In order to run a sustainable operation that maintains a competitive advantage in this type of business environment, the contextual and resource constraints identified in the current study should form the basis from which skills are developed to handle the effects these constraints have on entrepreneurial activity. In addition, Prashantham and Dhanaraj (2010) and Yli-Renko et al. (2002) debated whether the quality or quantity of resources available create greater opportunity for entrepreneurs for which Sarasvathy et al. (2014) provided an effectual solution which suggests that entrepreneurs who use an effectual process are not concerned about the attributes of the resources available but rather the way in which they are utilised. In the data however, entrepreneurs in the township construction supply chain are faced with both limited quantity and quality of resources, thus making this effectual process less relevant under the identified contextual and resource constraints in the current study.

Perhaps a more accurate set of findings to compare and contrast a resource-based view with results of the current study lies in the results of Sequeira et al. (2016). Their

findings used a resource-based view to understand the factors that contribute to a venture's success, specifically within the context of a developing economy in South African woman-led firms. Although only one woman entrepreneur was interviewed in the township construction supply chain, the factors identified by Sequeira et al. (2016) are still appropriate to compare and contrast given the entrepreneurial and South African nature of both studies. They suggest several individual and environmental factors that contribute to a venture's success. From an individual perspective entrepreneurial skills, social capital, government programmes, fear of failure, respect for entrepreneurship in the country, and a greater number of household incomes all contributed to new venture success (Sequeira et al., 2016). Moreover, environmental factors identified that contributed to venture success consisted of economic freedom, cultural factors, financial support, access to entrepreneurial education, and governmental factors.

Results from the current study revealed resource constraints associated with the individual and environmental factors of Sequeira et al.'s (2016) study, which did not contribute to venture success, thus confirming that these factors are important. If they are constrained or non-existent, venture success becomes difficult. This will ensure that the business model canvas created for a more efficient township construction supply chain considers these important resources. Figure 16 details the resource constraints and other elements found in the current study that align to the factors found in Sequeira et al.'s (2016) findings.

**Individual Factors**

	<u>Current Study Constraints</u>	<u>Sequeira and Gibbs</u>	
New venture is unsuccessful ←	Source of business and technical skills are gained from low paid unskilled labour jobs.	Entrepreneurial skills	→ New venture is a success
	Key relationships found as partnerships, suppliers and consumers, no other extended social capital.	Social capital	
	Lack of government support.	Government programmes	
	Family pressure is evident to continue sustaining businesses.	Fear of failure	
	Poor infrastructure and access to land within the township communities hinders business performance and growth.	Respect for entrepreneurship in the country	
	Entrepreneurs began working as soon as possible to gain at least one income for themselves and their families.	Greater number of household incomes	

**Environmental Factors**

	<u>Current Study Constraints</u>	<u>Sequeira and Gibbs</u>	
New venture is unsuccessful ←	Financial insecurities while working as an employee exist and then this insecurity is amplified when entrepreneurs begin and run their businesses.	Economic freedom	→ New venture is a success
	Apartheid is still a constraining factor that is unfortunately become part of South Africa's cultural and history.	Cultural factors	
	Access to starting capital is difficult to come by for township entrepreneurs.	Financial support	
	Entrepreneurs are mainly self-taught within their businesses and learn through trial and error.	Access to entrepreneurial education	
	The political climate is currently a constraining factor on entrepreneurial intent.	Governmental factors.	

*Figure 16: Current study resource constraint alignment to findings of Sequeira et al. (Adapted from Sequeira et al., 2016, p. 4).*

As defined by Baker and Nelson (2005), the foundation builders of bricolage research, entrepreneurial bricolage is a process something is created using very little resources by exploiting physical, social and institutional inputs in a resource-constrained environment. Given that the township construction supply chain has been confirmed to be resource-constrained in the current study as seen above, entrepreneur’s orientation to bricolage and thus innovation should be evident. This was, however, not the case in the current study as results yielded no significant evidence that supported a bricolage orientation. Baker and Nelson (2005) provided a conceptual framework through which to view entrepreneurial bricolage in a poverty-stricken environment. In the framework,

an entrepreneur will choose one of three alternatives during an entrepreneurial venture under resource constraints including: 1) to seek resources outside of the firm's domain; 2) avoid new challenges by continuing the business process, downsizing or closing down; or 3) take on a process of bricolage by taking on resources at their disposal to new problems or opportunities (Baker & Nelson, 2005).

Where an entrepreneur chooses to take on a process of bricolage, entrepreneurs should display five characteristics in their ventures. These five characteristics involved (Baker & Nelson, 2005):

1. Giving new value to forgotten or undervalued materials
2. Making use of labour including customers and suppliers
3. Using amateur self-taught skills to conduct business
4. Producing products that would not be available in the market without bricolage
5. Not viewing regulations or standards as constraints to what may be possible.

Only one of these five characteristics was clear in the results of the current study which could constitute a bricolage orientation: entrepreneurs only used their amateur self-taught skills and experience to conduct their businesses. The other characteristics were absent. This one characteristic was not enough to motivate a full bricolage orientation of entrepreneurs in the current study. In accordance with the findings of Kickul et al. (2018) and Guo et al. (2018), the current study contributes to the critique of bricolage where the influence of bricolage on opportunity performance is weaker and the effectiveness of bricolage may therefore vary according to contextual factors. These findings further challenge the views of Keupp and Gassmann (2013) and Linna (2013), who suggested knowledge resource constraints and financial resource constraints brings about radical innovation for creative-bricoleurs in an informal economy context.

Entrepreneurs in the township construction supply chain were, however, characterised by a resource-seeking behaviour where standard resources were sourced during entrepreneurial ventures (Baker & Nelson, 2005). This resource-seeking behaviour was evident through key activities:

- Businesses in the township construction supply chain used and sold materials that were bought and manufactured outside of the township construction supply chain.
- Regular labour was used without getting customers or suppliers involved.



- Products and services sold to end consumers were easily and readily available in the market.
- Regulations and standards governed most businesses in the township construction supply chain.

Although all the entrepreneurs that were interviewed in the sample displayed successful business operations, no significant business growth was observed as a result of bricolage for the majority of businesses in the construction supply chain, even under a resource-constrained environment.

Fisher (2012) and Servantie and Rispal (2018) provided a more holistic view of entrepreneurial orientation that combines causation, effectuation and bricolage to assess entrepreneurial behaviour throughout an entrepreneurial venture. The characteristics identified in these results align more accurately compared to those of a bricolage nature among entrepreneurs in the township construction supply chain. According to Fisher (2012), entrepreneurs who identify opportunity by the available resources that they have under their control are more active with customers, build a community of interest around the venture, and operate in a resource-constrained environment to avoid dull creativity to enjoy more entrepreneurial success. Furthermore, Servantie and Rispal (2018) created a conceptual model that visually portrays causation, effectuation and bricolage as a whole.

Three axes define the entrepreneurial behaviour during an entrepreneurial venture; namely the opportunity, expertise and making axes which all fall between causation, effectuation and bricolage. In the current study, evidence suggests that entrepreneurs in the township construction supply chain are mostly placed on the opportunity axis which is the relationship between bricolage and effectuation. Due to the fact that township construction entrepreneurs did not display characteristics of a causation nature where opportunity is identified through alertness, vision and planning, effectuation and causation fitted the orientation of the majority of entrepreneurs the best. In this instance, entrepreneurs believe that opportunity does not exist objectively but must be created through entrepreneurial action (Servantie & Rispal, 2018). Figure 17 illustrates the orientation positioning (red cross) of entrepreneurs within the township construction supply chain on Servantie and Rispal's (2018) conceptual framework.

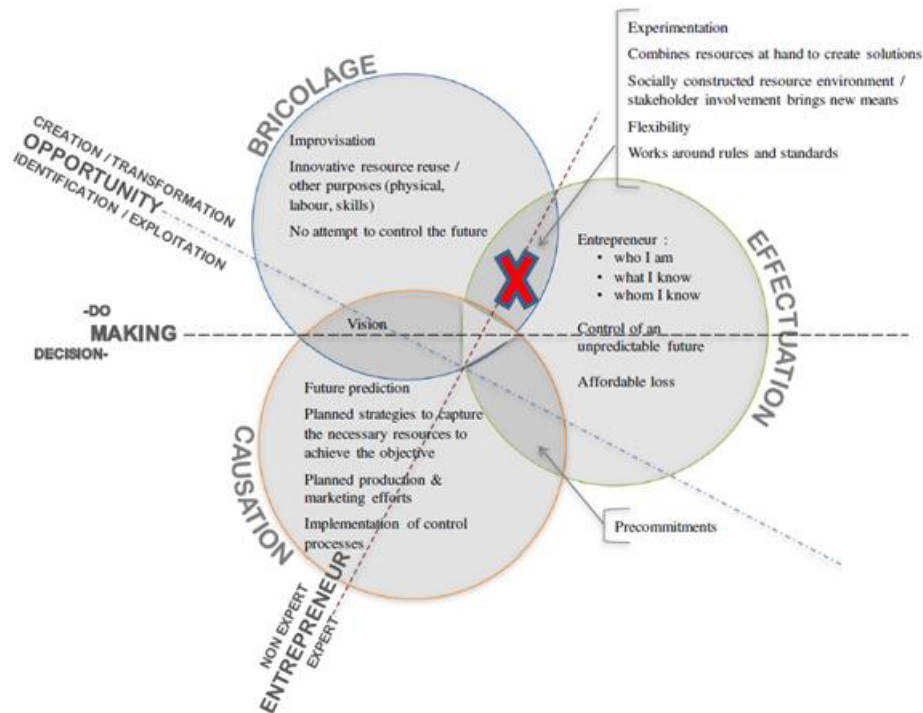


Figure 17: Township construction supply chain entrepreneur’s entrepreneurial orientation and relative activities (Adapted from Servantie & Rispal, 2018, p. 321).

Overall, it has been confirmed through analyses and discussion that although entrepreneurs in the township construction supply chain operate in a resource-constrained environment, they are not pure entrepreneurial bricoleurs, but instead exhibits an orientation that combines activities of both bricoleurs and effectuators which contributes to the venture success. Without a bricolage orientation, the “radical-innovation” identified by Keupp and Gassmann (2013) has not materialised in this context, resulting in little business growth due to bricolage. However, having identified this orientation leads the discussion into business model innovation with a clearer understanding that bricolage alone is not the only contributing factor to any innovation found in entrepreneurs’ business models. Results have revealed additional elements that affect the level of business model innovation found in the businesses within the township construction supply chain.

### 6.2.3 Business Model Innovation

When considering business model innovation (BMI) in the township construction supply chain, two main results have emerged in the current study. Teece (2010), Zott and Amit (2010) and Baden-Fuller and Morgan (2010) agreed that business models need to be viewed as a holistic conceptual framework that test the effectiveness and efficiency of business models which contribute to the businesses success. The conceptuality is achieved by looking at a conceptual framework designed by Wirtz and Daiser (2017).

Firstly, some larger, more established businesses operating in the township construction supply chain have illustrated that BMI is possible in this market. However, these elements of BMI need to be considered in line with a conceptual framework to determine whether the innovation elements found do in fact contribute to genuine BMI. These results inform the elements that need to be considered in new business models (to be documented at the end of the chapter) for new businesses looking to enter the township construction supply chain. In the same light, low levels of BMI have also been observed in the results of the current study. The elements that have presented this low level of BMI consist of business model designs, knowledge resource constraints, as well as market measures of innovation. As importantly as those elements of BMI identified in the current study, the reasons for the low levels of BMI must be taken into consideration when building a more efficient business model for the township construction supply chain.

Although it has been confirmed from the above discussion that entrepreneurs in the township construction supply chain are not considered to be bricoleurs in this context, evidence has suggested that some businesses in the sample displayed interesting elements of BMI. In order to develop an understanding of how these businesses innovatively navigated the complexities of the township construction supply chain and went a level deeper than other businesses who displayed low levels of business model innovation, the conceptual framework from Wirtz and Daiser (2017) can be used. The framework considers the elements that need to be present in a business model which contribute to the different levels of BMI intensity on a sliding scale. Where entrepreneurs consider changing central BMI dimensions at the business's core such as BMI factors, business model components or processes, moderate innovation will result (Wirtz & Daiser, 2017). However, where businesses consider environmental BMI dimensions such as the macro and micro effects on the BMI process together with central BMI dimensions, a higher level of 'radical business model innovation' is the result (Wirtz & Daiser, 2017).

Now that the conceptual framework to be used in the discussion is understood, the elements of BMI found in the results of the current study in the township construction supply chain will be summarised. Once summarised, these results will be overlaid on the BMI framework of Wirtz and Daiser (2017) to determine the level of BMI intensity which these elements created in the township construction supply chain.

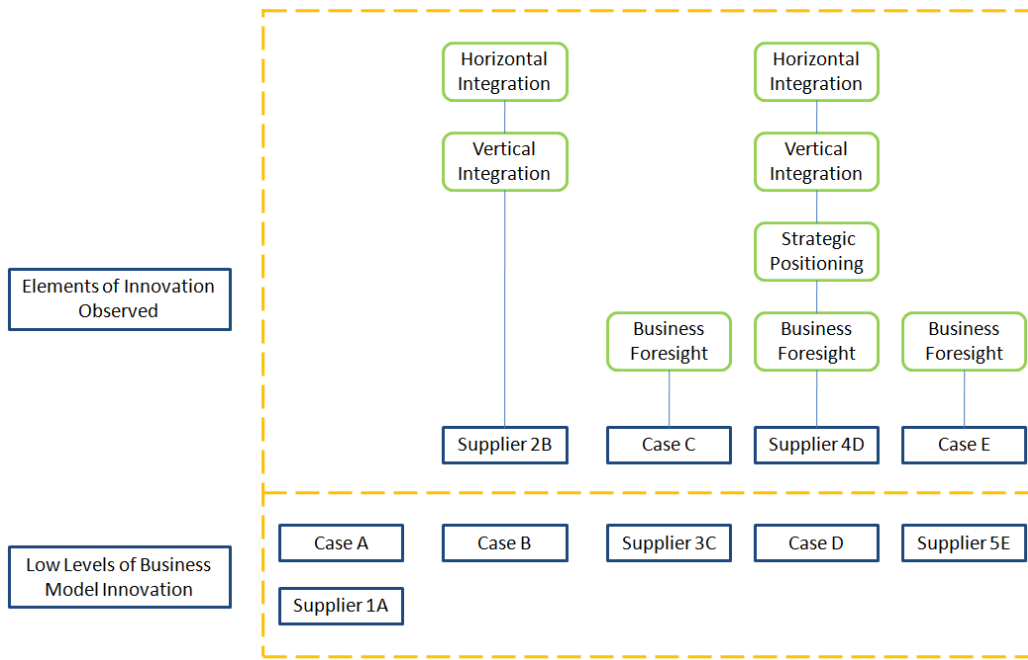


Figure 18: Summary of BMI elements found among businesses in the township construction supply chain

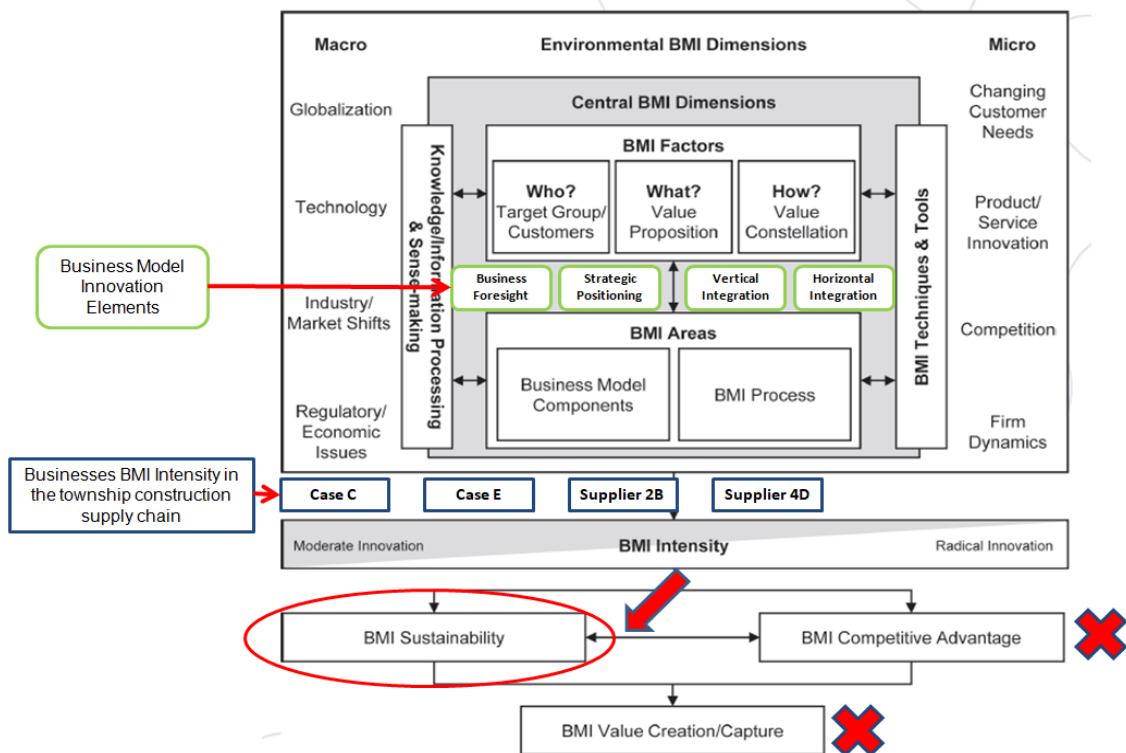


Figure 19: BMI elements and intensity in the township construction supply chain (Adapted from Wirtz & Daiser, 2017, p.25).

As seen above, the elements of BMI of players in the township construction supply chain have been detailed in a conceptual model so that the level of BMI intensity could be determined. When overlaid on the conceptual model of BMI, the BMI elements from the current study are all found within the central BMI dimensions, specifically as BMI components and processes within the businesses. As a result, no elements were situated within the environmental BMI dimension which does not lead to radical innovation, but instead moderate innovation among the businesses that displayed the innovation elements. In the results, Case C displayed only one of the innovation elements while Supplier 4D displayed all four elements during BMI processes. This led to Case C being at the lower level of the moderate innovation while Supplier 4D was further along the intensity scale, closer to radical innovation. Be this as it may, all the businesses remained within the moderate innovation section of the scale as no innovation elements that were present fell into the environmental dimensions which would have had a greater impact on the innovation intensity. The result of the conceptual framework if full radical innovation is achieved suggests that BMI leads to value creation or capture. This was not the case for the township construction related businesses, however the businesses did managed to achieve BMI sustainability as there was more moderate levels of innovation between all four businesses.

#### **6.2.4 Low levels of Business Model Innovation**

Now that elements of BMI that were identified in the current study have been conceptualised, the low levels of BMI found in the majority of the sample needs to be discussed and documented. Frankenberger et al. (2014) defined open business models as four basic types during BMI. These types are identified as open innovation, open R&D, full open business models, and open business architecture (Frankenberger et al., 2014). However, Berglund and Sandström (2013) view an open systems perspective as restrictive due to businesses behaving as actors that only provide resources to other firms in the open system. The result of low levels of BMI is in line with Berglund and Sandström's (2013) views on these types of business models that produce lower levels of BMI.

The low levels of BMI among businesses in the township construction supply chain are as a result of business model design, knowledge resource constraints, as well as the market indicators that prove low levels of innovation. Evidence found in each of the business cases that showed a low level of BMI are integrated into the three categories that show a low level of BMI. This low level of BMI is best documented as a visual

representation to understand each category's impact and importance on the low levels of BMI being experienced in the township construction supply chain.

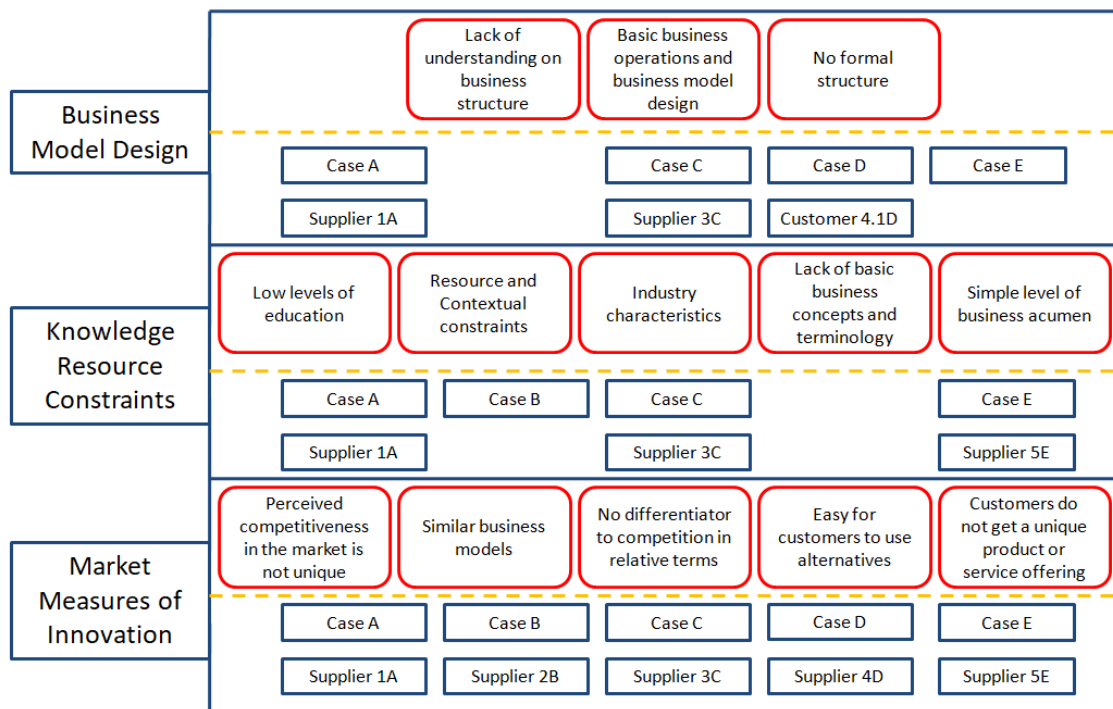


Figure 20: Elements showing the low level of business model innovation found among businesses in the township construction supply chain.

### 6.3 Discussion of Results for Sub-question 1

#### 6.3.1 Formal Construction Supply Chains

Construction supply chains are generally complex systems of multiple resources and stakeholders that need to coherently work together in order to ensure efficiency over the construction process. According to Lönngren et al. (2010); Papadonikolaki et al. (2017), and Segerstedt and Olofsson (2010), construction supply chains are characterised by strong strategic alliances where supply chain management and business information modelling encourage innovation to manage complexities over prolonged periods of construction projects. Ke et al. (2015) and Sundquist et al. (2018) added to theory on construction supply chain efficiency where positive performance is a result of co-operation among players, forward planning, and organised logistics operations within the construction supply chain. Furthermore, strong long-term relationships among actors in the construction supply chain contribute to greater value throughout the purchasing process in the construction supply chain (Bildsten & Manley, 2015). It is clear to see that construction supply chains in the context of formal

economies in developed countries possess a sense of organisation along traditional supply chains that fragment into smaller units from project to project. The uniqueness of projects and long lead times mean those relationships between players in the construction supply chain each have a particular purpose and grow stronger as times goes on and as new projects are introduced into the supply chain.

### 6.3.2 The Township Construction Supply Chain

Although the construction supply chain environment has been defined above by academics as an organised and efficient chain where players within the supply chain deal with multiple complexities when dealing with construction projects, in the current study, a much more simple, traditional and broader supply chain was discovered among players in the context of the township construction supply chain. This was in line with results found by Rogerson (2000), where the majority of the supply chain in the informal sector of South Africa lies in retail and services, while the smallest proportion lies in manufacturing. This was clear in the composition of the township construction supply chain as results in the current study revealed that there is an undeniable link between South Africa's formal and informal sectors due to low or no manufacturing capabilities in the township construction supply chain. These findings are in line with Petersen et al. (2018) and Kedir et al. (2018), who confirmed township supply chains are short and linked to formal wholesale sectors. In addition, the current study has expanded on the work of Beneke et al. (2011) to understand the complex dynamics and factors of a supply chain in South African townships.

Lizarralde and Root (2008) suggested that the construction supply chain in South Africa is inefficient as the value of the informal sector's products becomes less valuable compared to the overpowering formal sector. However, this was not the case in the current study as it was found that the overlapping formal and informal construction supply chains were fundamental to ensure the township construction supply chain's success. Work done by Khan and Kazmi (2008) and Srivastava (2006) suggested that supply chain management in construction was made difficult in an informal economy due to the regulatory and economic environment, quality of infrastructure, and competition with other supply chains which aligns more closely to the results found in the township construction supply chain.

Due to the township construction supply chain's uniqueness, the most effective way to build an understanding of the supply chain's composition was to illustrate it visually. Two figures have been developed to show the differences in supply chains from the interviewed sample compared to the actual supply chain composition of the township

once data was collected from Cases A through E. In the supply chain figure detailing the interviewed sample, suppliers in the figure are the actual suppliers that were interviewed specifically on recommendation from each case respondent to keep within the parameters set out for the research. In the actual diagram, data from the cases suggested that the majority of their main supplies are sourced outside of the township, where smaller items were instead sourced from those suppliers within the township construction supply chain. The diagrams have allowed for a comparison of results to show the importance of the co-dependence that exists between the township construction supply chain and the formal construction supply chain of South Africa. These differences have been documented and displayed below.

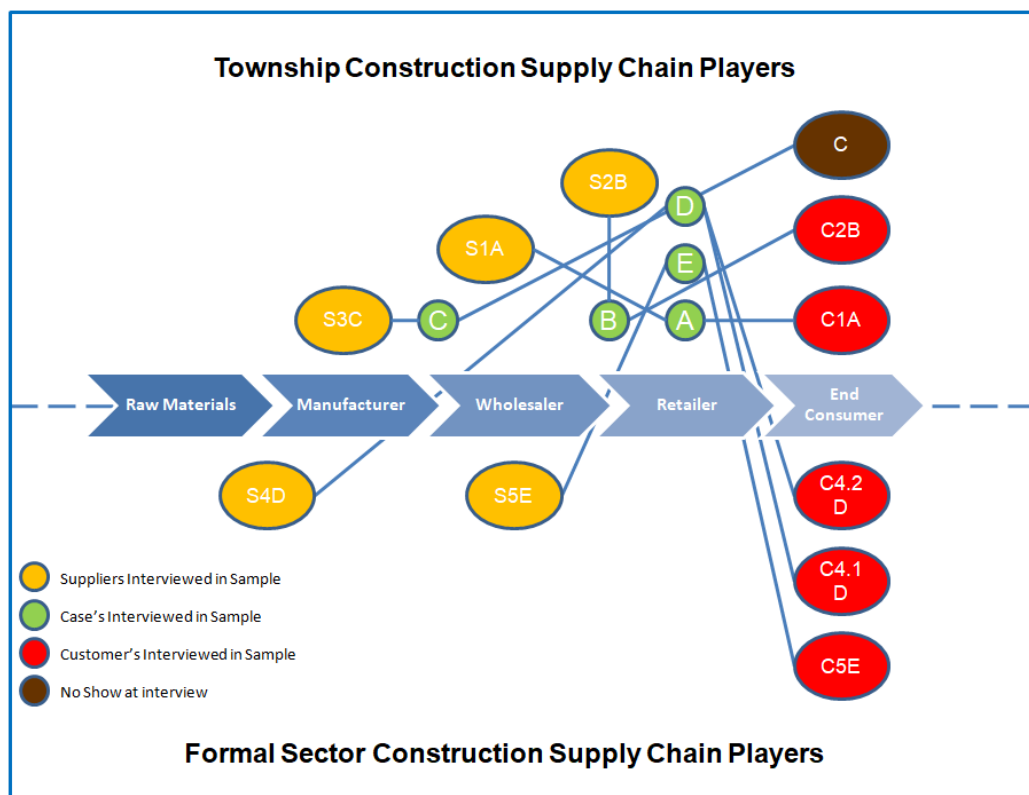


Figure 21: Composition of the township construction supply chain from interviews



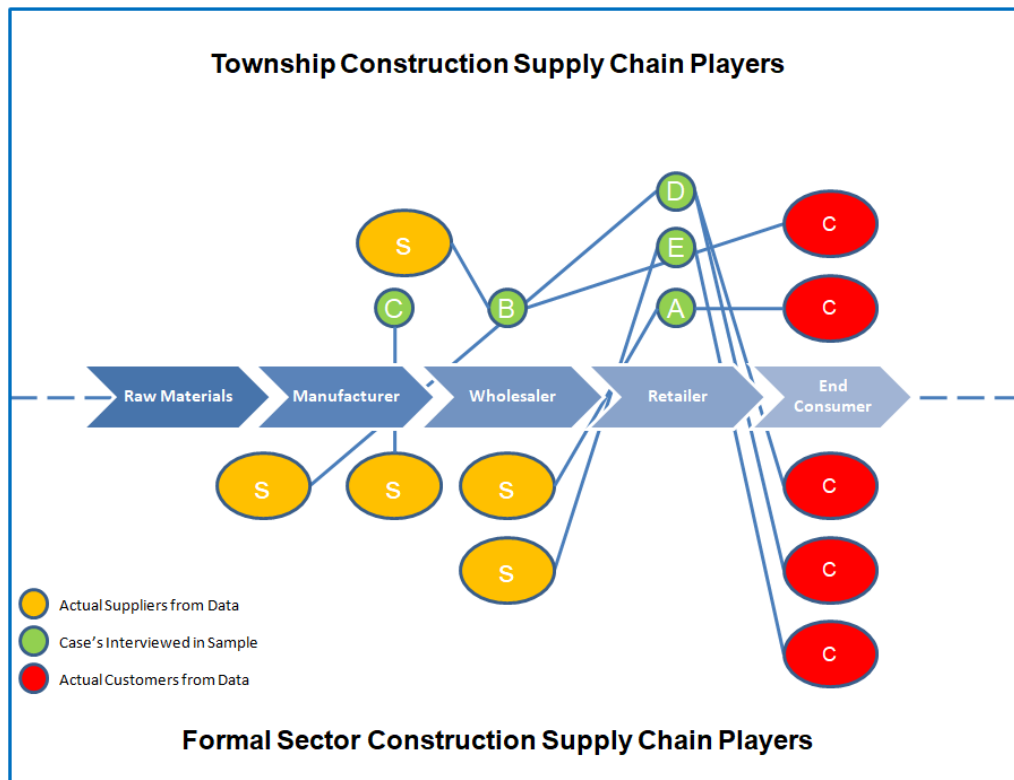


Figure 22: Actual composition of the township construction supply chain from data collected.

Now that the township construction supply chain's composition has been documented and includes a co-operative relationship between the formal and informal construction supply chains, sub-question two will provide insights into the actual immediate environment in which the construction supply chain operates. Together with literature on South Africa's formal and informal economy and data gathered from the current study on enabling and challenging circumstances found in this environment, a more in-depth evaluation of context can be developed.

#### 6.4 Discussion of Results for Sub-question 2

The previous chapter documented the different levels of impact that either an enabling or challenging environment had on the township construction supply chain. This helped to determine how operating in the context of a challenging or enabling environment affected business performance and thus supply chain efficiency in the context of the informal economy. The results revealed that in a challenging environment, the factors identified as challenges shadowed the supply chain with negativity and hence business performance was low and the supply chain perceived to be less efficient. However, the environment that was defined by enabling factors filled the business environment with positivity and provided entrepreneurs in the supply chain with better business performance and a more efficient supply chain.

Overall, it was found that the majority of entrepreneurs operating in the township construction supply chain were faced with a challenging business environment which hindered business performance and did not encourage any more innovation than what was currently occurring in the businesses. However, entrepreneurs did express that if an enabling environment was dictating the construction supply chain, business as a whole would become easier and result in better business performance. Ultimately this would create an environment that promotes more innovation among business models in the construction supply chain. These findings once again challenge the bricolage findings of Baker and Nelson (2005); Keupp and Gassmann (2013) and Linna (2013) in the context of South African township construction supply chains.

### **6.5 Creating an Innovative Business Model**

It has been identified and confirmed that very little entrepreneurial bricolage takes place, even in an environment that is contextually- and resource-constrained. In addition, those individual and environmental resources that were indicative of venture success in this environment have been documented. Although these resources were present and businesses in the township construction supply chain were generally successful, the business models found within the construct supply chain are basic with little structure, causing inefficiencies in the broader township construction supply chain. Due to the fact that little business model design or structure exists among township construction related businesses, it is difficult for significant BMI to take place in the township construction supply chain. In addition, the results of the current study have provided the opportunity for the composition of township construction supply chain to be built. The current study also enabled the researcher to gain insights into the challenging environment that cause business inefficiencies, as well as the enabling environment that improves efficiencies in businesses and therefore the entire supply chain.

Given that there is a low level of BMI found in the township construction supply chain and the rich set of results achieved from the current study, an innovative business model using the business model canvas was developed for a typical township construction related company. By following this business model canvas, entrepreneurs who are interested in beginning, or who already run a township construction related business can use the canvas as an insightful formalised structure to be able to run their businesses more efficiently, achieve a competitive advantage, and improve business performance through BMI. The business model developed here can be a factor contributing to ultimately helping improve township construction supply chain efficiency.

Osterwalder, Pigneur and Tucci (2005) carried out research on business model theory to clarify its origins and begin to develop more of an understanding as to the actual effectiveness of studying business models as a theory and in practice when running businesses. They view business models in three categories where authors describe business models as an abstract overarching concept, as an abstract classification scheme, or as a conceptualised real-world business model (Osterwalder et al., 2005). Although Osterwalder et al. (2005) did not disagree with any of the three categories, their belief was that to achieve a common understanding of business models they need to be distinguished conceptually. For this reason, Osterwalder et al. (2005, p.19) outlined the use and practicality of a business model where a business model should help business people to “capture, understand, communicate, design, analyse and change business logic” as time goes on in a firm’s life time. To do so, Osterwalder and Pigneur (2010) developed business model generation as a concept using the business model canvas to describe, analyse and design business models which helps with more accurately planning of an entrepreneurial venture.

The business model canvas together with the elements in the canvas and each of their descriptions has been summarised in Figure 23. This figure was used as a guide to develop the business model canvas for a typical township construction related business.

<p><b>KEY PARTNERS</b></p> <p>Who are our key partners? Who are our key suppliers? Which key resources are we acquiring from our partners? Which key activities do partners perform?</p>	<p><b>KEY ACTIVITIES</b></p> <p>What key activities do our value propositions require? Our distribution channels? Customer relationships? Revenue streams?</p>	<p><b>VALUE PROPOSITIONS</b></p> <p>What value do we deliver to the customer? Which one of our customers' problems are we helping to solve? What bundles of products and services are we offering to each segment? Which customer needs are we satisfying? What is the minimum viable product?</p>	<p><b>CUSTOMER RELATIONSHIPS</b></p> <p>How do we get, keep, and grow customers? Which customer relationships have we established? How are they integrated with the rest of our business model? How costly are they?</p>	<p><b>CUSTOMER SEGMENTS</b></p> <p>For whom are we creating value? Who are our most important customers? What are the customer archetypes?</p>
<p><b>KEY RESOURCES</b></p> <p>What key resources do our value propositions require? Our distribution channels? Customer relationships? Revenue streams?</p>		<p><b>CHANNELS</b></p> <p>Through which channels do our customer segments want to be reached? How do other companies reach them now? Which ones work best? Which ones are most cost-efficient? How are we integrating them with customer routines?</p>		
<p><b>COST STRUCTURE</b></p> <p>What are the most important costs inherent to our business model? Which key resources are most expensive? Which key activities are most expensive?</p>			<p><b>REVENUE STREAMS</b></p> <p>For what value are our customers really willing to pay? For what do they currently pay? What is the revenue model? What are the pricing tactics?</p>	

Figure 23: Description of the elements contained in a business model canvas – Sourced from Blank (2013, p.4), developed by Osterwalder and Pigneur (2010).

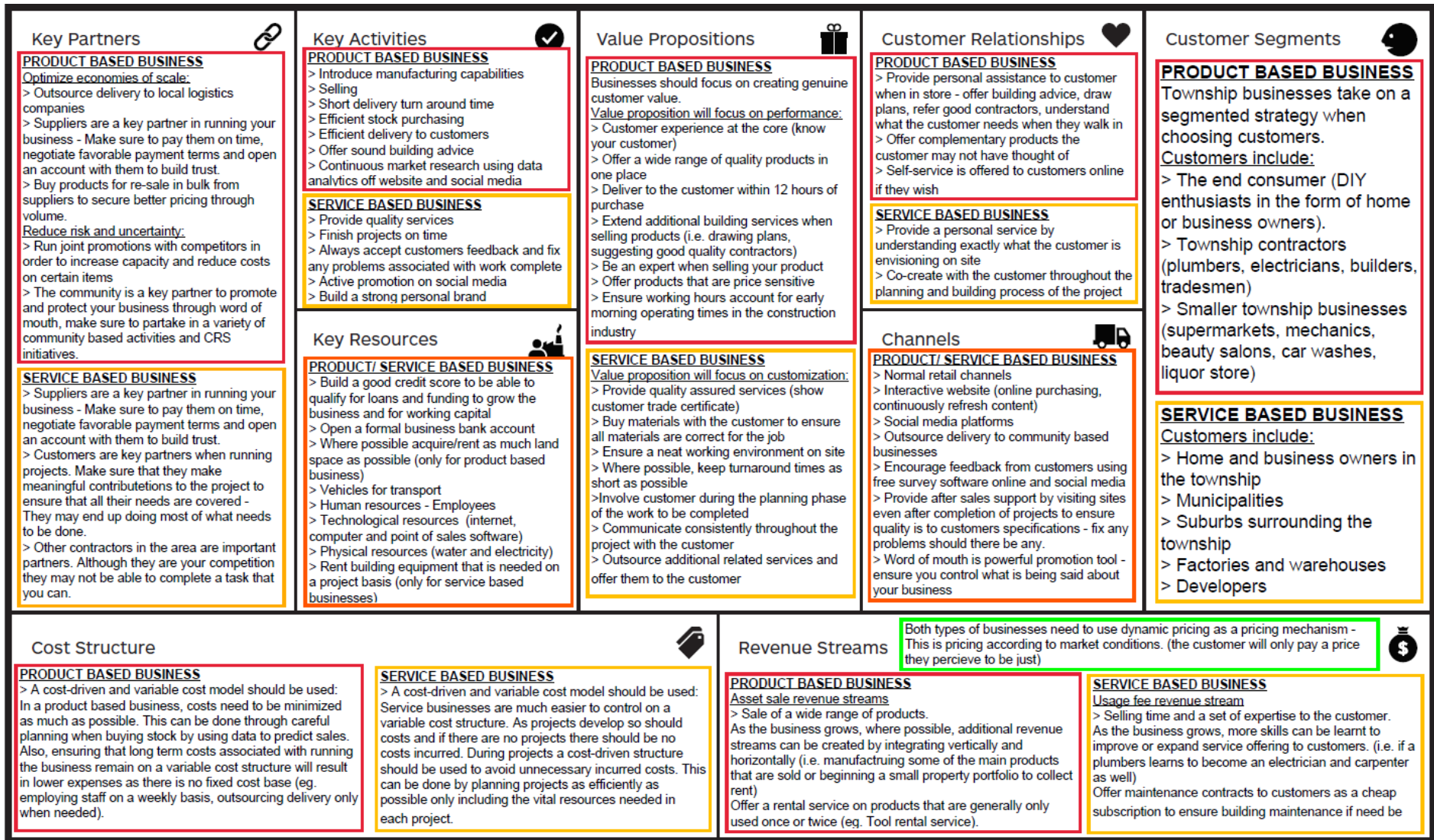


Figure 24: Completed business model canvas for a typical product or service based business in the township construction supply chain (Adapted from Osterwalder & Pigneur, 2010).

## 6.6 Conclusion

This chapter presented a discussion of results for the current study. The findings of the current study have been scrutinised, compared and contrasted to literature that already exists in the context of entrepreneurial theory, BMI, supply chain theory as well as formal and informal sectors in the South African economy. It was revealed that in line with Rangone (1999); Barney et al. (2001); Alvarez and Busenitz (2001) and Castanias and Helfat (2001), the resource-based view of entrepreneurship has been expanded to include additional resources that need to be considered when entrepreneurs are operating businesses in the context of the township construction supply chain. In addition, results confirmed and added to the findings of Sequeira et al. (2016) on venture success when entrepreneurs conduct business in the developing economy of South Africa.

A number of discrepancies were found between the current study and research conducted on entrepreneurial bricolage. It was not expected that the results of the current study would suggest that very little entrepreneurial bricolage takes place in the resource-constrained environment of the township construction supply chain. This was proven using a conceptual framework developed by Baker and Nelson (2005) that provided a set of characteristics entrepreneurs should display under a bricolage situation. Instead, the results of this analysis revealed that entrepreneurs in the township construction displayed resource-seeking behaviour. In line with Kickul et al. (2018) and Guo et al. (2018), but challenging Keupp and Gassmann (2013) and Linna (2013), an entrepreneurial bricolage orientation in the township economy was not evident.

Having confirmed that bricolage was not the sole factor that contributed to business model innovation in the township construction supply, entrepreneur's orientation needed to be properly understood in order to understand the reasons for the levels of business model innovation. Fisher (2012) and Servantie and Rispal (2018) offered this opportunity where causation, effectuation and bricolage could all be tested together to determine the combined orientation of township construction supply chain entrepreneurs. It was found that township construction entrepreneurs were situated on the opportunity axis between bricolage and effectuation in Servantie and Rispal's (2018) conceptual model. As a result, the activities that described this area between all three entrepreneurial orientations in the model matched the results found in the current study. These activities included experimentation, combining resources on hand to create a solution, large stakeholder environment, flexibility, and working around rules and standards during a venture (Servantie & Rispal, 2018).

The discussion proceeded to understand the levels of BMI in the township construction supply chain. Once again, a conceptual model developed by Wirtz and Daiser (2017) was used as a tool to assess this level of BMI. Those cases in the current study that revealed certain elements of BMI were mapped on the conceptual framework to comprehend the BMI intensity within these cases. Business foresight, strategic position, vertical integration and horizontal integration were the key elements found in the results of the current study that displayed business model innovation. When mapped onto the conceptual model, these elements fell into the central BMI dimensions and none into the environmental BMI dimensions. According to Wirtz and Daiser (2017), this shows only a moderate level of business model innovation as compared to the radical innovation found in elements that fall into the environmental BMI factors. Due to only moderate levels of BMI, the full benefits of innovation are not felt in the township construction supply chain. BMI sustainability is achieved, however BMI competitive advantage and value creation is not.

The discussion continued to the low levels of BMI observed in the rest of the sample of the current study. In contrast to Frankenberger et al. (2014) but in line with Berglund and Sandström (2013), open systems models observed in the current study fostered little to no innovation. These open systems were revealed to have elements of poor business model design and structure, knowledge resource constraints, as well as market indicators that prove low levels of innovation in the business models of the township construction supply chain.

Further discussion detailed results found under sub-question one. Here, the township construction supply chain and its components were documented. In line with Rogerson (2000); Petersen et al. (2018) and Kedir et al. (2018), the results revealed a composition that was mainly centred on the services and retail sector, where manufacturing was the smallest contributor in the construction supply chain. An interesting dynamic was made evident in the results which contradicted findings by Lizarralde and Root (2008), whereby formal supply chains overshadow informal supply chains in a developing economy. This was not the case in the township construction supply chain as there was an important co-existing relationship that, had it not been there, would cripple both the formal and informal parts of the township construction supply chain. These two parts of the supply chain were documented visually to display the interdependence of both the formal and informal sectors together with the summarised composition of the township construction supply chain.

The final section of the discussion deepened the understanding of the enabling and challenging environments that entrepreneurs needed to navigate in the township environment. Once again it was found that instead of a challenging environment's elements

encouraging innovation and business growth, elements that were linked to an enabling environment provided entrepreneurs with a more positive environment in which BMI could transpire and business performance could improve.

Having identified the above findings during the discussion, a proposed business model design could be developed using Osterwalder and Pigneur's (2010) business model canvas as a guide that incorporated all the elements found in the current study. This business model was designed for a typical service or product based business in the township construction supply chain. When implemented, the business model designed in the current study is intended to be used as a foundation business structure that entrepreneurs can use when running their businesses in the township construction supply chain. This will help solve the business model design and structure problem by formalising business models in the minds of entrepreneurs and encourage deeper levels of innovation once each of the aspects within the business model canvas is understood thoroughly. This model is not set in stone and is encouraged to be moulded and changed according to the entrepreneur's unique capabilities, and not used as a set model generalised for all construction related entrepreneurs.

The following chapter presents the conclusions and recommendations for the current study.

## **Chapter 7: Conclusion and Recommendations**

### **7.1 Introduction**

The current study set out to gain insights into whether contextual and resource constraints addresses how the level of business model innovation is considered by entrepreneurs through supply chain's multiple components, enablers and challenges experienced by entrepreneurs that make up the township construction supply chain. As seen in Chapter 1, the negative macro-economic factors that are impacting the developing economy of South Africa can be improved through entrepreneurship activity (Brière et al., 2014). Equally, Beneke et al. (2011); Teece (2010); Zott and Amit, (2010) and Adner (2016) identified these macro-economic challenges and constraints in the context of South Africa's informal economy, specifically in township communities, where supply chains are generally inefficient, and innovation through business models is not equal to those found in the formal sector. Adner (2016) constructed the formal construction supply chain as a vast network of suppliers, service providers, professionals and administrators who together rely on one another to form an efficient ecosystem that creates value for the end consumer. However, this type of efficiency is not seen in township construction supply chains and business models, and the reasons for this need to be identified. Often, an entrepreneurial bricolage orientation is assumed to be the grounding principles for business model performance, innovation and growth within the context of the current study (Linna, 2013; Keupp & Gassman, 2013), however critics of bricolage in literature are weary of the sustainability that this radical innovation orientation brings to the business models of entrepreneurs in this context (Kickul et al., 2018; Guo et al., 2018). This discrepancy in entrepreneurial literature and the efficiency of business models relative to the formal sector within the construction industry in the township economy therefore needed to be understood conceptually to fill the gap in literature. For this reason, the current study examined business model innovation in construction supply chains of South African townships.

### **7.2 Principle Findings**

The current study has successfully accomplished what it has been set out to achieve as stated in the research problem in Chapter 1. The resource and contextual constraints, a lack of supply chain efficiency, as well as discrepancies and similarities between the South African formal and informal sectors that presents challenges in a complex construction supply chain have been identified. Low levels of business model innovation in the township construction supply chain have transpired and cannot sustain township businesses growth and development in the broader competitive landscape of South Africa.



The principle findings of this study can thus be categorised in three sections; namely low levels of business model innovation, components of the township construction supply chain, and the enabling and challenging environments that impact business model innovation.

### 7.2.1 Low Levels of Business Model Innovation

A variety of contextual and resource constraints confirmed that the township construction supply chain was a constrained business environment. From a contextual constraint perspective, entrepreneur's background, key relationships and South Africa's Apartheid history confirmed contextual constraints that cause challenges for entrepreneurs in the business environment. Likewise, resource constraints in the form of financial, physical and technological constraints further intensified the difficulties faced by entrepreneurs. Analysing entrepreneurs through a resource-based view and bricolage lens helped identify that certain resources were essential for venture success (Sequeira et al., 2016), while there was little evidence that showed entrepreneurial bricolage as a source of innovation alone in the township construction supply chain (Baker & Nelson, 2005). Characterised by resource-seeking behaviour, township construction entrepreneurs were seen to instead be orientated as both effectuators and bricoleurs (Servantie & Rispal, 2018). These findings have added to entrepreneurial literature by identifying that a resource-constrained environment does not always result in bricolage. Also, entrepreneurs in these environments can display different entrepreneurial orientations that need to be assessed as a whole.

Having identified that innovation in this context does not necessarily extend from bricolage alone; the level, source and intensity of business model innovation needed to be tested to determine whether township construction supply chains are efficient enough to be sustainable in the long term. It was confirmed contextually in the current study that the business model innovation elements found in a few of the cases only contributed to moderate levels of business model innovation, which resulted in some business model innovation sustainability, but did not extend to create extended competitive advantage or true value creation (Wirtz & Daiser, 2017). Overall, even though these cases displayed some sustainability in their business models, the township construction supply chain as a whole was neither efficient nor sustainable. Elements of business model innovation were documented and contextually tested for the township construction supply chain.

The low levels of business model innovation captured in the majority of the sample confirmed the lack of sustainability and efficiency within the township construction supply chain. The elements identified here were a lack of formalised business model designs, knowledge resource constraints, as well as market measure confirming low levels of business model innovation. The low levels of business model innovation have been

identified into three categories which will add to literature when considering how to improve supply chain performance and efficiency in the township economy.

### **7.2.2 Components of the Township Construction Supply Chain**

Before the results were captured in this section, it was understood from existing literature that formal construction supply chains were characterised by strong strategic alliances where supply chain management and business information modelling encourage innovation to manage complexities over prolonged periods of construction projects (Lönngrén et al., 2010; Papadonikolaki et al., 2017; Segerstedt & Olofsson, 2010). However, the results of this section showed that the township construction supply chain is characterised as a simple, traditional and broader supply chain that aligns with the views of Rogerson (2000); Petersen et al. (2018); Kedir et al. (2018) and Beneke et al. (2011).

An additional element to add to the principle findings of this section is the co-operative relationship that was found between the formal and informal construction supply chains in South Africa. This added to the findings of Khan and Kazmi (2008) and Srivastava (2006), but challenged the views of Lizarralde and Root (2008) when understanding the dynamics between formal and informal sectors in a developing economy. The township construction supply chain from both an informal and formal perspective could then be mapped to illustrate the co-dependence of players in both formal and informal contexts.

### **7.2.3 Enabling and Challenging Environments**

Results in this section detail the enabling and challenging elements of the business environment in which the township construction supply chain operates. Once again, it was confirmed that a challenging environment does not entice bricolage among entrepreneurs but instead promotes a negative environment that hinders innovation and efficiency within the township construction supply chain. Instead, it was found that elements which create an enabling environment were more conducive for business performance and improved entrepreneurs' perceptions around business growth and innovation. These elements were needed, together with the above principal findings, to develop a business model that can be used by entrepreneurs in the township construction supply chain to improve business performance and hence overall efficiency in the township construction supply chain.

### **7.2.4 Proposed Business Model for Innovative Businesses**

The business model proposed using Osterwalder and Pigneur's (2010) business model canvas at the end of Chapter 6 outlined a formal structure for product and service based businesses in the township construction supply chain to follow. This was done to compliment and conceptualise the findings of the current study. Given that the township construction

supply chain is defined by a resource- and contextually-constrained environment with low levels of business model innovation due to a lack of formalised business model design, knowledge resource constraints and a lack of sustainable competitive advantage, it has been proposed that entrepreneurs follow the business model canvas as a foundation for established or new ventures. The business model canvas has been designed ensuring elements of the findings of the current study have been included, keeping in mind the orientation of entrepreneurs in this context, components of the construction supply chain as well as the enablers and challenges that make the business environment more favourable for business model innovation to take place. It is encouraged by the author of the research that the business model canvas presented here is a framework be used, moulded and changed creatively by entrepreneurs to suit their individual styles of conducting business on the township construction supply chain.

### **7.3 Implications for Entrepreneurs**

The current study has brought the township construction supply chain to life by understanding the complex environment in which it operates and identifying the levels of business model innovation that create more efficiency and sustainability in the chain. Together with the proposed business model canvas presented for entrepreneurs, the research provides additional insights into how business model design, structure and innovation in the township construction supply chain creates a sustainable competitive advantage for businesses and therefore the entire supply chain as a whole.

- The study has revealed that entrepreneurs face a barrage of contextual and resource constraints. These constraints have been documented and should be considered by entrepreneurs before beginning a new venture in the township construction supply chain. Planning can be done by entrepreneurs to ensure that these resource constraints are managed effectively to not be constraining factors as their ventures grow.
- Entrepreneurs in the township construction supply chain now have a formal understanding of their entrepreneurial orientation when conducting business in this context. Provided entrepreneurs understand their orientation, better decisions can be made that improve business acumen. These activities will help entrepreneurs to make better-informed decisions and not allow their difficult business environment to dictate the success of their ventures.
- Entrepreneurs also have the opportunity to learn from those elements of innovation found within some cases of the current study. By implementing these elements into their businesses, they will immediately increase the intensity of business model

innovation to create sustainable business model innovation. Entrepreneurs can take this one step further and achieve radical innovation by considering the environmental dimensions of business model innovation to improve the intensity of their business model innovation and ultimately achieve a sustained competitive advantage and true value creation in the market.

- Having understood and visually displayed the players and components of the construction supply chain in the current study, entrepreneurs are at an advantage to add elements to this foundation that improve the chain's efficiency.
- Finally, entrepreneurs are in a position where they are able to create an enabling environment for themselves and their business ventures. This is due to the challenging environment in which entrepreneurs currently operate that hinders business performance and business model innovation. However, having identified both these environments and their elements, entrepreneurs are able to ensure that an enabling environment is maintained while a challenging one is avoided.

#### **7.4 Limitations of the Research**

The current study is an exploratory study that was focused in a specific context. For this reason the generalisability of results is limited and should be noted. Further limitations of the current study are listed as follows:

- Due to the context and language differences in which the study was conducted, respondents in the research sometimes struggled to articulate their responses therefore affecting the quality of responses that were given.
- One of the respondents interviewed was a family member of the researcher and may have contributed to some form of researcher bias.
- The subjective nature of qualitative research means that the current study may have been affected by researcher bias.
- Originally, to ensure the quality of the research, one township community was to be the focus area of the study which avoided too many contextual influences unique to multiple township communities. However, given that access to entrepreneurs in the township of Soweto alone was limited; the researcher had to resort to using additional township communities in the Johannesburg area to gather data.
- A respondent who was originally supposed to participate did not show to the interview, and had to be replaced with other respondents from an alternative case in the study. As a result, triangulation could not take place in Case C which may have limited the results gained in that particular case.

## 7.5 Suggestions for Future Research

There is potential for additional avenues of future research to be developed from the current study. The potential for future research for this study is as follows:

- The case study approach of this study can be used in a variety of different contexts in developing countries globally to assess business model innovation in a variety of different industries.
- The construction industry can further expand this research to look at the individual different sections of the broad construction industry to understand business model innovation in more specialised supply chains.
- A quantitative study can also be conducted from the current study in order to quantitatively measure the effectiveness of the business model canvas designed for the township construction supply chain.
- The business model canvas can be tested in other industries within the context of the township construction supply chain to assess its effectiveness in bringing formal structure to informal economies.
- Explorative research can also be conducted to determine additional elements of strategy that may impact innovation in the township construction supply chain.
- Further explorative research can be conducted to analyse the effects that foreigners have on the township construction supply chain and whether their additional hardships have an impact on the level of business model innovation experienced in businesses.
- Skills development in the township construction supply chain can also be assessed to determine the factors that influence the levels of business acumen in the township environment.
- Explorative analyses could be conducted into the co-operative relationship between South Africa's formal and informal sectors.

## 7.6 Conclusion

The study allowed the development of insights into the resource- and contextually-constrained environment of South African Townships. More specifically, the study has created an understanding as to why a bricolage type entrepreneurial orientation is not observed in the township construction supply chain and how entrepreneurs in this setting consider their business models and business model innovation. Currently, the township construction supply chain is not performing optimally and has a low level of business model innovation among players in the chain, making the supply chain less efficient than what it could be. Value has been shown to exist between the formal and informal sectors where the relationship between formal and informal player is vital for both the formal and informal construction supply chains to exist. With an enabling environment in place and a structured business model, entrepreneurs in the township construction supply chain will be able to drastically improve the low levels of business model innovation and thus the township construction supply chain efficiency as a whole.

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## **APPENDIX A: Example of Business Case and Supplier Interview Schedule**

### **General Information**

**Name of Respondent:**

**Age:**

**Company name:**

**Type of business you own:**

### **Background**

1. Please can you tell me a little about yourself as an entrepreneur?
2. What is the story behind how you started a business in the construction industry?
3. If any, what other businesses have you started?
4. What did you do before you began this business?
5. What motivated you to begin a business in the construction industry in your township?

### **The township construction supply chain**

6. Tell me about what your business does.
7. Who is/are your main customer/s?
8. Where do you buy your supplies?
9. What do you consider to be your role in construction within the township?
10. Who are the other businesses that help you to make your business a success?
11. Do you manufacture anything you sell? Why/why not?
12. Who do you sell most of your products/services to?

### **Business model innovation and design**

13. How is your business structured?
14. What/who has influenced the structure of your business the most?
15. Please describe the purchasing process in your business.
16. How competitive do you think you are relative to other businesses?
17. What do you do differently compared to your competition?
18. Have you ever considered manufacturing?

## **Enablers and challenges in the township economy**

19. What is your biggest challenge while running your business?
20. What resources do you have access to and control over?
21. When trying to improve your business, what makes it easier and what makes it more difficult for you to do so?

## **Contextual and resource constraints**

22. If you are able to improve your business's performance – who benefits the most?
23. What is holding your business back from progressing further?
24. How do you think you could improve your relationships with suppliers and customers in your target market?



## APPENDIX B: Example of Customer Interview Schedule

### General Information

Name of Respondent: Respondent C1A

Please tell me a little about yourself (Background / History)

Age:

Business owner: Yes / No (Follow up question – Motivation for your answer)

Type of business you own:

Are you from Gauteng? – Follow up

Do you live in Soweto? – Follow up

Please answer the following questions in as much **detail** as possible:

#### **Experience buying from this establishment and competition:**

1. What do you usually purchase from this business?
2. Why do you choose this business over other businesses in the township who sell the same product?
3. Do you mainly buy your products on credit or cash?
4. How often do you buy from this store?
5. What do you think makes this store different from other stores?
6. Do you enjoy coming to the store?
7. Would you consider purchasing this product outside of Soweto?

**What does the customer do within the township and why is he/she buying from the business?**

8. Where did you attend school?
9. Did you go to university to complete a degree?
10. If not, what skills have you learnt in your life that has helped you to build your career?
11. Where did you learn these skills?
12. Has local government in Soweto ever helped you in learning the skills you described

above?

13. Are your qualifications / skills checked before you do work for anyone?

### **Perceptions of running a business in the township community**

14. Do you feel it is it difficult to begin and run a business in Soweto? Why do you feel that way?

15. Are there many opportunities to begin a business in Soweto? What types of opportunities exist?

## APPENDIX C: Business Case, Supplier and Customer Consent Form

**Title of research project:** Business Model Innovation among Construction Supply Chains in South African Townships.

**Name of principal researcher:** Marcio De Abreu

**University/Institution of researcher:** Gordon Institute of Business Science (GIBS), University of Pretoria, Illovo, Johannesburg

**Cell phone:** 072 176 3787

**Email:** [marcio@rmmgroup.co.za](mailto:marcio@rmmgroup.co.za)

**Nature of the research:** A qualitative study will be conducted, using a case study approach, to further explore elements of business model innovation within construction supply chains in South African Townships. Interviews will be set up to identify the township construction supply chain, business model innovation and design, enablers and challenges in the township economy as well as contextual and resource constraints.

**Participant's involvement:** Verbally answering questions under interview conditions.

**What is involved:** Semi-structured interviews will be used in the interview process, as well as an audio recording device. The duration of each interview will be approximately 45 minutes – one hour.

**Benefits:** Contributing to the body of knowledge on business model innovation, supply chain theory and the construction industry in the context of South African townships.

**I, as the participant, acknowledge the following:**

- I agree to participate in this research project.
- I have read this consent form and the information it contains and had the opportunity to ask questions about them.

- I agree to my responses being used for education and research on condition that my privacy is respected, subject to the following:
- I understand that my personal details will not be included in the research.
  - I understand that I am under no obligation to take part in this interview.
  - I understand I have the right to withdraw from this interview at any stage.

**Signature of Participant:** \_\_\_\_\_

**Name of Participant:** \_\_\_\_\_

**Signature of person who sought consent:**

  
\_\_\_\_\_

**Name of person who sought consent:** Marcio De Abreu \_\_\_\_\_

**Date:** \_\_\_\_\_

## APPENDIX D: Business Case, Supplier and Customer Consent Letter

Good Day,

My name is Marcio De Abreu and I am a Masters student in the field of Business Administration at University of Pretoria's Gordon Institute of Business Science. As part of the requirements involved in the master's program, I am tasked with completing a dissertation to contribute to business knowledge and literature. In particular, my research will involve Business Model Innovation among Construction Supply Chains in South African Townships.

As an entrepreneur in the construction supply chain of a South African township, you are **invited** to take part in this interview. The purpose of this interview is to gain an understanding into the complexities of township construction supply chains and articulate the business models that make up these supply chains.

Your responses are important and there is no right or wrong answers. The data from this interview will be kept confidential and safe from unauthorized access once it has been collected. Confidentiality is guaranteed by not using the actual participant's name in the research. Participants will be referred to as 'Respondents' with a corresponding code e.g. Respondent A, Respondent B etc. This will ensure that all participants' identities are not exposed in the research paper. ***Your participation is voluntary and you can withdraw at any time without penalty.***

The first part of the interview schedule requires general information about you and your business. The rest of the interview schedule contains 23 open-ended questions pertaining to the township construction supply chain (7 questions), business model innovation and design (6 questions), enablers and challenges in the township economy (3 questions) and contextual and resource constraints (3 questions). Please respond to each question to the best of your ability. The entire interview should take between 45 minutes - one hour to complete.

Thank you for taking the time to participate in this interview. Should you have any questions, or should you wish to obtain a copy of the results of the interview, please do not hesitate to contact me

**Supervisor details:**

**Supervisor's name:** Dr Jonathan Marks

**Cell number:** 082 469 0104

**Email:** [marksj@gibs.co.za](mailto:marksj@gibs.co.za)

**Date:** \_\_\_\_\_

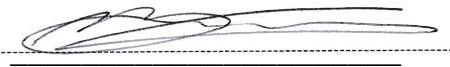
  
\_\_\_\_\_

**Researcher details:**

**Cell number:** 072 176 3787

**Email:** [marcio@rmmgroup.co.za](mailto:marcio@rmmgroup.co.za)

**Date:** \_\_\_\_\_

  
\_\_\_\_\_

Sincerely,

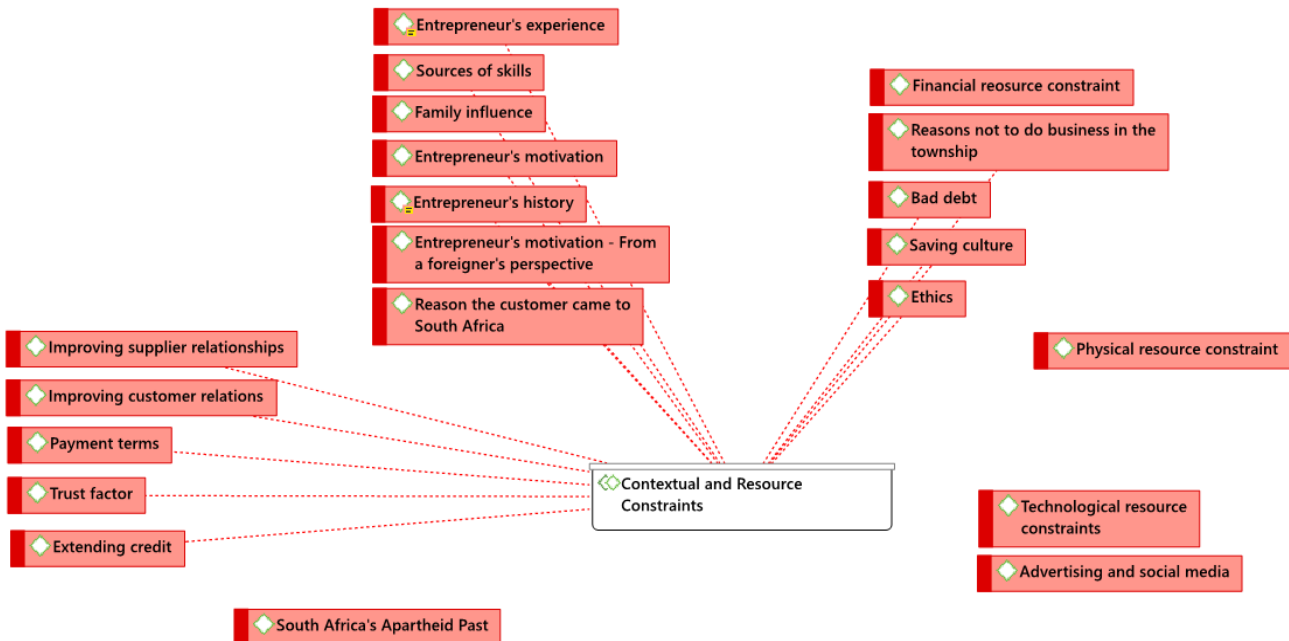
**Marcio De Abreu**

Masters Student: University of Pretoria's

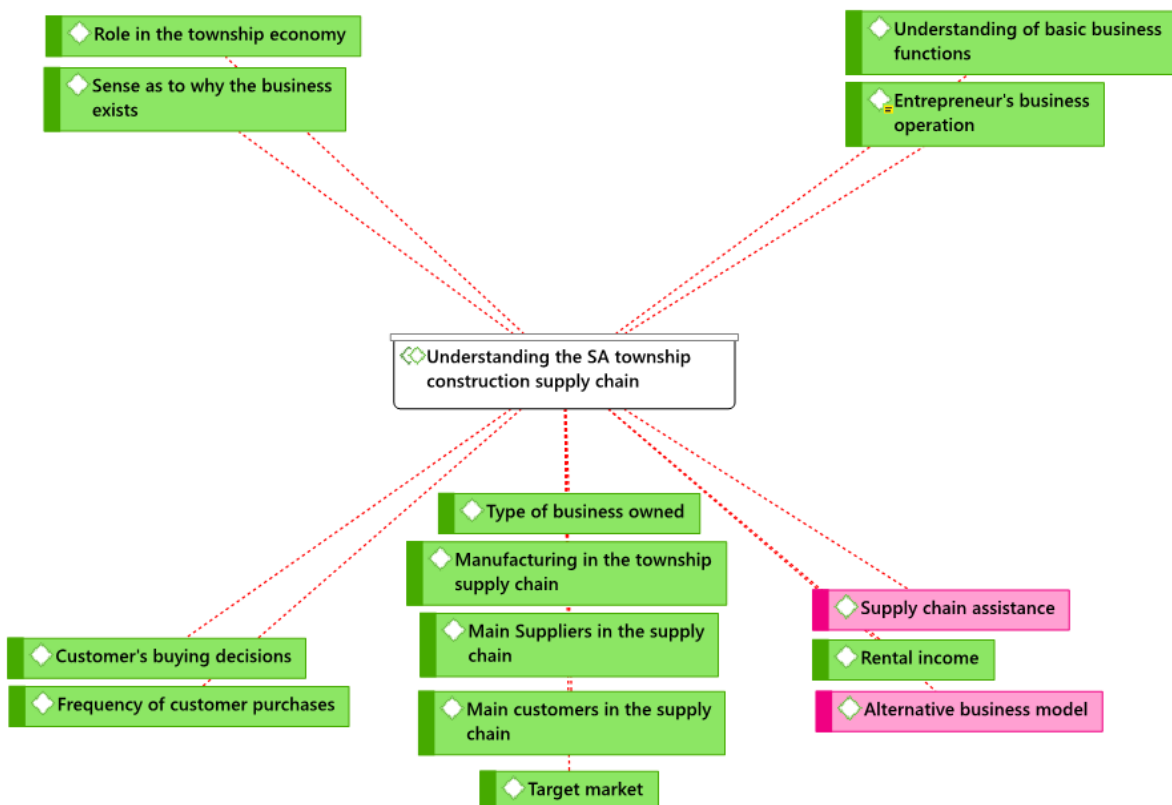
Gordon Institute of Business Science

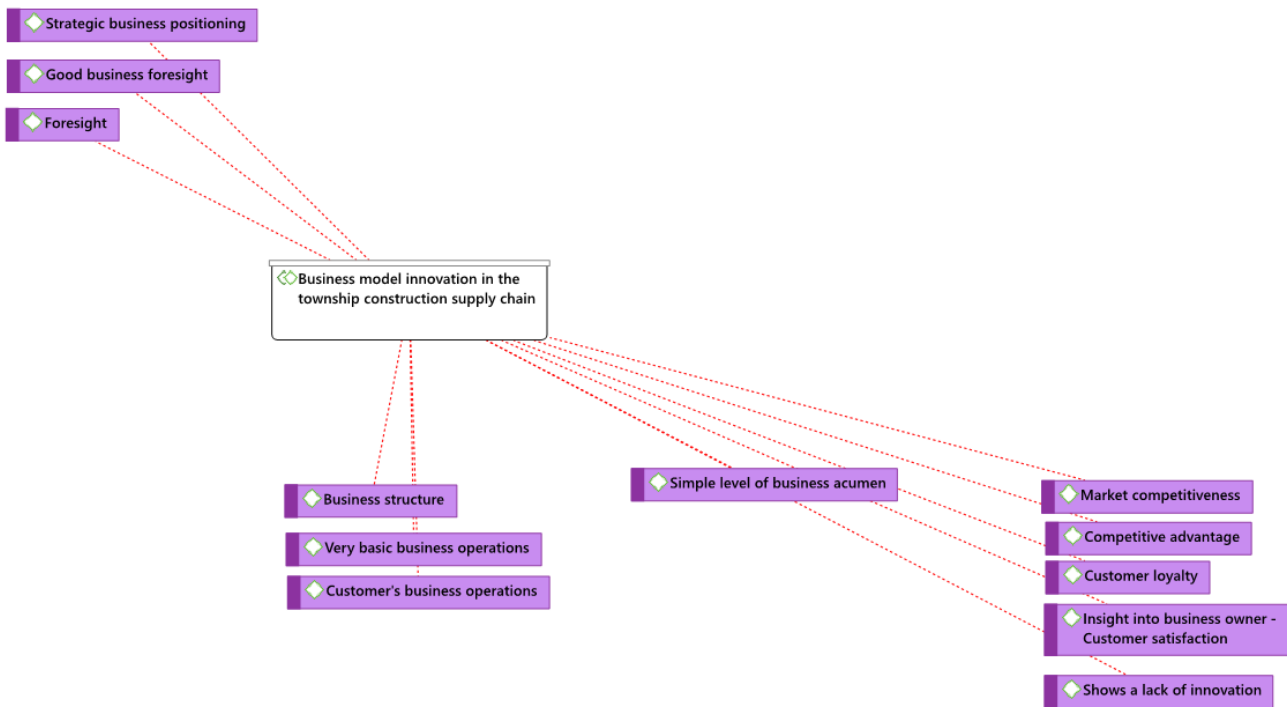
## APPENDIX E: Code Networks

### Code Network for Primary Research Question:



### Code Network for Sub-question 1:





## Code Network for Sub-question 2:





## APPENDIX F: Ethical Clearance Letter

**Gordon  
Institute  
of Business  
Science**  
University  
of Pretoria

21 September 2018  
De Abreu Marcio

Dear Marcio

*Please be advised that your application for Ethical Clearance has been approved.*

*You are therefore allowed to continue collecting your data.*

*Please note that approval is granted based on the methodology and research instruments provided in the application. If there is any deviation change or addition to the research method or tools, a supplementary application for approval must be obtained*

*We wish you everything of the best for the rest of the project.*

*Kind Regards*

GIBS MBA Research Ethical Clearance Committee