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A complex adaptive systems approach to social entrepreneurship business model designs within local government

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Abstract

This research study set out to understand social entrepreneurship business model design paradigms within the complex environments of local governments in South Africa. Although the current theory base suggests that social entrepreneurship ventures in local government also known as public-sector entrepreneurship, is severely limited by regulatory constraints, social entrepreneurs have a mandate to alleviate the service delivery pressures on local government by engaging in robust action and creating alternative service delivery models, especially in the terrain of electricity distribution, water reticulation and waste management services to communities. The research study has found that social entrepreneurs do indeed deliver on this mandate and that they actively see the private sector as a pivotal stakeholder in solving market failures. The empirical research is however very limited and almost absent as to how business model designs within this context should account for the overwhelming complexity of local government services as there exists a paradox between the simple and causal-based business model and the complex nature of the enacted environment.

It can be concluded that the exploratory research has achieved its aim to answer the research problems, namely: To understand the rules and logic of social entrepreneurship business models, how this model creates network value, how stakeholders are included in this model, how it creates social impact, and lastly how the model adapts to complex environments. In summary, the findings show that especially the individual contexts of the social entrepreneur and the content and capabilities of the organisation are focal elements of social entrepreneurship business models. These business models create and capture value by virtue of its network interface and stakeholder management mechanisms and that private sector partnerships have a key role in this network. The social enterprise can be construed as a complex adaptive system that senses and adapts to the contextual environment so that it can create scalable and sustainable solutions. These findings are therefore significant and will consequently be summarised in more depth by the following subsections.

Although an explorative approach was conducted, the qualitative interviews with 15 respondents, five from each sector in the sample group, provided rich insights that could be empirically validated through triangulation. Although it has not been definitively validated by quantitative methods, this could pose an avenue for further research. The study yielded exciting findings that emphasised the value of shifting the design paradigm of business models towards a theoretical frame that aligns praxis with academia. Complex adaptive systems theory provided an invaluable framework for analysing the research problem and has achieved the research aims beyond expectations. One of the key findings has shown that the manifestation of the social business at its heart vests in the rules and logic of the social entrepreneur. Therefore, if the social entrepreneur can grasp the theoretical context of

complex adaptive business models, it could potentially provide a new and exciting avenue for entrepreneurial paradigms.

Finally, the five research questions yielded emerging themes that were aligned with the conceptual framework that was developed by triangulating three different bases of theory and consequently not only validated this conceptual framework, but also yielded deep insights that strengthened and developed the proposed framework into a testable and viable frame of business model design thinking. This new theoretical framework could provide an ontological model that may prove to become an invaluable tool for organisational development practitioners, executive managers and entrepreneurs alike to develop sustainable business models.

Keywords

business models, complexity, complex adaptive systems, design thinking, social entrepreneurship, local government, public services

Declaration

I declare that this research study 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.

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Chapter 1 – Introduction to the Research Problem

1.1 Introduction

Local governments throughout South Africa are in crisis as they seem to be unable to deliver basic services such as water reticulation, electricity distribution and waste management services (Reddy, 2018). Not only has this situation resulted in rampant violent protests in the past two years, but has also choked the economic growth potential for many communities (Akinboade, Mokwena, & Kinfack, 2014). Although social entrepreneurs are attempting to alleviate the pressures on local governments by delivering alternative electricity generation, water purification and waste management services to communities, the lack of empirical data within this context fails to confirm the true socio-economic impact of these ventures (Saebi, Foss, & Linder, 2018). The nature of the problem of public service failures in local government is also an astonishingly complex problem and although a social entrepreneurship business model aims to align its internal activities with the external environment (Baden-Fuller & Mangematin, 2013), it begs the question if the social entrepreneurship business model innovations within this system sufficiently factors in the complex nuances of such a system to be able to create sustainable change at scale. An exploratory research study that uses a complex adaptive systems approach to understand the social entrepreneurship business model design paradigms in the local government services sector of South Africa is therefore warranted.

1.2 Background to the Research Problem

Local governments in South Africa are currently in a state of crisis as they are unable to deliver even the most basic services as mandated by the Constitution (1996) of South Africa. The magnitude of this problem is especially frightening given the resulting increases of service delivery related violent protests that spill over the country (Chigwata, O'Donovan, & Powell, 2017). Furthermore, the scale and scope of inequality and poverty in South Africa necessitate a strong developmental mandate for all stakeholders involved in the local government public services sector (hereafter referred to as LGS) as there is a growing sense of urgency for the creation of a modern developmental state that will be able to address rampant social and economic challenges in South Africa (Khambule, 2018). Local Economic Development (hereafter referred to as LED) should be a central pillar in this endeavour (Nel & Rogerson, 2016). Although local government is tasked to promote LED, communities are however rapidly losing confidence in this system as the majority of municipalities are unable to deliver basic services such as electricity distribution, water reticulation and waste management services to communities (Reddy, 2018). Furthermore, the lacklustre outcomes of LED in local governments are often attributed to a number of challenges ranging from skills shortages of

staff, inadequate financing, an apparent failure to join forces with stakeholders, such as the private sector and an overall bias towards social outcomes at the expense of economic sustainability (Nel & Rogerson, 2016). These challenges have been exasperated by power outages, droughts, corruption and poor governance, therefore resulting in violent protest that could potentially disrupt social order and threaten South Africa's fragile constitutional democracy (Nel & Rogerson, 2016).

It is however important to factor in the significance of the negative impact that poor waste management, water reticulation and electricity distribution services has on local economic development. The neglect of these three core service delivery segments can be disastrous to the sustainability of LED efforts and necessitates special attention and further research.

South Africa is currently severely overexploiting its water resources as less than one-third of the country's main rivers are in good ecological condition (Donnenfeld, Crookes, & Hedden, 2018). This situation is particularly alarming given the fact that less than 40% of South Africa's waste water is treated as more than 25% of wastewater treatment plants are currently in a "critical state", thereby destroying our renewable water resources. (Donnenfeld et al., 2018). Although the agricultural industry remains the largest water user, consuming up to 62% of our available resources, municipalities still remain a significant consumer at 27%, therefore necessitating further investigation into creative solutions in this sector (Donnenfeld et al., 2018). However, speaking at the 2019 Water Symposium, water resource management expert, Dr Anthony Turton, highlighted the necessity of a fundamental paradigm shift; reframing the water scarcity problem as a new paradigm of abundance, as water resources is a dynamic and renewable flux and not a depletable commodity (Turton, 2015). Such a paradigm underscores the need of a complexity theory approach to the water crisis in South Africa.

The issue of local electricity distribution is however a problem that is probably one of the single biggest threats to the economic growth prospects of South Africa and could even become the final nail in the coffin of the country's LED ambitions (Styan, 2019). Two core issues lie at the heart of the inability of the national power utility (Eskom) to deliver reliable and cost-effective power delivery services. These issues are the inability of Eskom to generate sufficient power as less than 66% of its generation capacity can be relied upon, and also the inability of the enterprise to secure funding of its operations as the utility is technically bankrupt with liabilities totalling R387 billion in March 2018 and growing exponentially (Styan, 2019). Furthermore, municipalities contribute significantly to the financial woes of Eskom as the total debt owed by municipalities amount to over R25 billion and is increasing rapidly (Styan, 2019). The inability of municipalities to service their debt is exasperated by the fact that dilapidated infrastructure

and distribution losses undermine their ability to sustainably deliver these basic services to communities. It is also important to mention the fact that the total cost of renewable energy projects as part of Eskom's Independent Power Producer Programme (IPPP) is often significantly underemphasised as the generation and long distance distribution costs related to these initiative are collectively close to 222c/kWh and is thereafter sold at 85c/kWh in 2017 (Styan, 2019). It is fair to conclude that a paradigm shift which factors in the overwhelming complexity of the issue like the water service crisis is also needed for electricity generation and distribution at local government level.

A study in 2019, undertaken by the Department of Environmental Affairs, concluded that up to 74% of municipal waste disposal facilities operated without a license (Godfrey & Oelofse, 2017). This heart-breaking statistic points to the unsustainable nature of our consumption driven economy that increasingly degrades our beautiful natural resources and environments (Godfrey & Oelofse, 2017). Although there is a number of legislative frameworks that seek to regulate waste management practices and create an environment conducive to a recycling economy, the typical municipal landfill gate fees are in order of magnitude cheaper that one might pay in developed countries (Godfrey & Oelofse, 2017). The economic incentives to recycling are therefore insufficient to fast track the transition to a more sustainable and responsible waste management culture. This situation also reinforces the need for a paradigm shift in the waste management sector as waste should also be treated as a resource and not as a commodity. The complexity of the waste management issue furthermore warrants a deeper investigation into the recycling business model design paradigms.

It is therefore predictable that the rapidly deteriorating levels of basic service deliveries will result in further violent civic protests. In fact, since 2013, up to 90% of all civic protests involved some form of violence such as looting, arson, personal attacks, and intimidation (Chigwata et al., 2017). Furthermore, almost 72% of these protests cited grievances that related directly to municipal service delivery issues, with a special emphasis on services of schedules 4b and 5b of the Constitution, such as water and electricity distribution (Chigwata et al., 2017). It is also worrying that the Human Science Research Council concluded in 2011 that up to 45% of South African citizens were highly dissatisfied with LGS (Zondi & Nzimakwe, 2017).

In conclusion, although the Constitution compels local governments to deliver public services, research points out that if local governments truly want to achieve their sustainability goals then the local government should also create an environment that will enable the emergence of sustainable LED and that alternative modes of service delivery should be investigated through partnerships and allowing social entrepreneurs to become change agents (Hendriks, 2018). This statement confirms the importance of paradigm shifts as discussed in the three

segments of LGS. Furthermore, there exists a compelling argument for the creation of social entrepreneurship ventures that focus on the three segments of LGS as discussed. Although there is a high number of private sector companies that operate in these segments, the impact driven output of these firms seems to be fragmented and not well researched. Social entrepreneurship has however been identified as a key component in the change efforts of the LGS sector and are exceptionally well positioned to deal with the issue of complexity (Saebi et al., 2018). The literature also makes it abundantly clear that government is failing to deal in the complex nature of public service delivery issues, therefore strengthening the argument for the need of a paradigm shift and the need for social entrepreneurs to become change agents that broker relationships within the public services ecosystem.

1.3 The Research Problem

Given the overview of the research background, it can be concluded that the context of LGS is a highly complex ecosystem as it contains the following traits of complexity (Cilliers, 2004):

- a large number of simple elements;
- elements that interact dynamically;
- many direct and indirect feedback loops;
- open systems that exchange information with their environments;
- distributed memory of systemic behaviour;
- emergent properties that disprove simple causality; and
- adaptive reorganisation of structures within the system.

It is however not clear how social entrepreneurs have adapted their business models to the complex environment of LGS in South Africa and a deeper exploration thereof is warranted. There is currently no coherent and universally accepted concept of what constitutes a business model as there is a wide range of characterisations, classifications and boundaries of the business model concept (Evans, Vladimirova, Holgado, Van Fossen, & Yang, 2017). There is however general agreement that a business model refers to the logic of how a firm creates, delivers and captures value and that it ultimately functions as a mediator between various actors within a real-world network (Evans et al., 2017). This view is supported by (Baden-Fuller & Mangematin, 2013) who hold that it is not only a real phenomenon, but also a cognitive instrument that links the relationships of internal activities of the firm with the outside elements.

However, the traditional paradigm of the business model concept often appears to be limited to the narrow and simple cause and effect relationships between a firm and its customers and that the need has been identified to further explore the relationships between the business

model and the ecosystem as a whole (Baden-Fuller & Mangematin, 2013). This forms the basis for a more holistic business model construct that incorporates social dynamics as part of a value creation process and can be described as the social entrepreneurship model. Social Entrepreneurship (hereafter referred to as SE) has, just like the business model concept various diverging definitions. Peter Drucker introduced the concept of social enterprise when he explained that even the most die-hard for profit enterprises serve a social function (Urban, 2015). Social entrepreneurship is widely celebrated as a mechanism that attempts to address societal issues that both the private and public sector fail to solve and given the increasing problems of social inequalities not only in South Africa but also globally, social entrepreneurship is an intractable necessity if society wants to achieve its sustainability goals (Bewayo & Portes, 2016).

This need for social entrepreneurship research is further emphasised by Freudenreich, Lüdeke-Freund, & Schaltegger (2019) who hold that although value creation and value capturing stand at the centre of most business model research, the research on the impact of business models on stakeholders has been neglected. Furthermore, a common definition for social entrepreneurship is that it serves as a construct that facilitates the interactions between the social entrepreneur and its specific context (Bewayo & Portes, 2016). This lends some very important insights to our understanding of the social entrepreneurship concept as it infers that if the number of variables in the context is high, it follows that the nature of the interactions between the social entrepreneur and the context also has high variability. This position is supported by (Evans et al., 2017) who contend that if business models are designed to achieve higher sustainability, the process inevitable leads to higher complexity as the business model designers need to understand their business effects on the whole ecosystem.

From a stakeholder perspective, business model designs that account for stakeholder relationships go a long way to develop a more sustainable model (Freudenreich, Lüdeke-Freund, & Schaltegger, 2019). However, a stakeholder theory perspective on business model designs delimit the scope to a narrow set of variables that does not account for the systemic level nuances that underpin the complex environment of LGS. This position is strengthened by research that attempted to determine the influences of the environment on social entrepreneurship success, however, the researcher admitted that not all of the variables within the system cannot be accounted for and necessitates further exploration (Littlewood & Holt, 2018).

The very nature of business models as a framework for designing social entrepreneurship ventures in LGS is therefore severely limiting as is does fails to sufficiently account for the complexity of the LGS ecosystem. Although the stakeholder theory framework strengthens

the ability of a business model design paradigm to account for complexity, a stakeholder analysis is a good but an insufficient method for designing for complexity. It can therefore be concluded that a complex adaptive system approach for business model designs might be able to elevate the responsiveness of social entrepreneurship ventures to its environment by rather following an exploratory approach that aims to create emergent change on a systemic level which will also enable an social entrepreneurship venture to become more agile to be able to adapt to changing complex environments (Holland, Daedalus, Era, & Holland, 2016). Complex Adaptive Systems (hereafter referred to as CAS) are mechanisms that could also potentially be able to create social entrepreneurship systems that are able to manage the tensions between profit and purpose more effectively, therefore creating more sustainable firms that can become transformative in nature. Further research within this framework of thinking is therefore warranted.

1.4 Research Aims

This research aims to understand social entrepreneurship business model design paradigms within the complex environments of local governments in South Africa. Although the current theory base suggests that social entrepreneurship ventures in local government, also known as public-sector entrepreneurship, is severely limited by regulatory constraints (Leyden, 2016), the National Planning Commission stated (Chetty & Luiz, 2014):

> although it is important to balance the political autonomy and exclusive service delivery mandate granted by the Constitution with the realities of limited financial and human-resources capacity. A flexible institutional model should allow continued political oversight of local service provision by municipalities, while taking advantage of other delivery models.

Social entrepreneurs therefore have a mandate to alleviate the service delivery pressures on local government by engaging in robust action and creating alternative service delivery models, especially in the terrain of electricity distribution, water reticulation and waste management services to communities. The research is however very limited and almost absent as to how business model designs within this context should account for the overwhelming complexity of local government services as there exists a paradox between the simple and causal based business model and the complex nature of the enacted environment. The research therefore aims to close this gap.

1.5 Scope of the Research

The scope of this research will be restricted to the social entrepreneurship perspective in local government services with a specific emphasis on electricity distribution, water reticulation and

waste management services, not only to local governments but also to local government constituents. Because of the limited scope, it is envisaged that the business model design paradigms from a social entrepreneurship perspective within the given context will yield rich insights into how these entrepreneurs design for complexity and how the theories of complexity and complex adaptive systems might broaden the scope of the traditional business model design paradigms for social entrepreneurs. The relevant literature that explains the theory of complexity, business models and its application within the social entrepreneurship context, as well as design thinking theories will be reviewed to form the theoretical base for this project.

1.6 Significance of the Research

It is expected that the theories of complexity and complex adaptive systems could potentially add to the theoretical base of business model design paradigms for social entrepreneurs and that a more coherent approach to business model designs within complex environments might result in a conceptual framework that can be tested and replicated to other contexts.

Chapter 2 – Literature Review

2.1 Introduction

This chapter reviews the relevant literature as it relates to the business model paradigms of social entrepreneurs within complex environments. Although it has already been determined that the environment of LGS is particularly complex, the context specific elements of complexity within LGS is outside the scope of this research study and can be supplemented by further research. This chapter therefore explores the literature on the business model construct, how it applies to the theoretical base of social entrepreneurship, and how this construct should be approached from a design thinking and complex adaptive system perspective. This enabled the researcher to gain insights into the characteristics of the sample group that has been investigated in this study. The chapter closes with a newly proposed conceptual framework that aims to incorporate some, but not all the concepts into a single comprehensive framework that enabled a coherent data gathering process aligned with the literature study.

2.2 Complexity Theory

The nature of complexity has been applied to certain contexts in several ways as demonstrated in the discussion of the complex nature of LGS. It is however important to stress the fact that just because a system is complex or confusing, it does not give credence to the position of being vague and apathetic and necessitates the need for being clear on how complex systems behave (Cilliers, 2004).

The essence of complex systems is that it is a set of relationships between parts of the systems which can be individuals or even groups of individuals or non-human elements (Cilliers, 2004). The boundaries of such complex systems are also not obvious because these systems, like the LGS system, have many influences outside of its sphere of control, such as violent protests that disrupt service delivery. However, such violent protests are often unpredictable and rooted in the disruptive historical context of the apartheid regime legacy (Akinboade et al., 2014). Therefore, such unpredictable behaviours and historical contexts are hallmark traits of complex systems and should be accounted for when assessing a complex system (Cilliers, 2004).

Furthermore, the magnitude of such unpredictable system behaviours, such as violent service delivery protests are often misaligned with the magnitude of the triggering event in that the system inputs often have a mismatch with the system outputs, therefore emphasising the unpredictable nature of complex systems (Cilliers, 2004). The issue of centralised control in complex systems can also render centralised interventions ineffective as decentralised system

control can have greater adaptability and agility that is needed for a rapidly changing complex environment (Cilliers, 2004). This position of decentralised control in complex in environments is supported by Steiner, Kaiser, Tapscott, & Navarro (2018) who have concluded that the increasing complexity of LGS requires a collaborative system of inclusion and stakeholder engagement between communities, government and the private sector if local government aims to design sustainable service delivery models.

However, to understand the dynamics of such an agile system of inclusion, it was useful to view the issue through a theoretical lens of complex adaptive systems (hereafter referred to as CAS). According to Levin (1998) in essence, CAS have a sustained set of diverse individual components; localised interactions between these components and an autonomous feedback process loop that either strengthen or weaken relationships between such components.

The said components may aggregate into population sets that can become taxonomical species or functional groups of unique components and these aggregation effects are often a result of self-organising activities (Levin, 1998). The construct of CAS can be a useful tool not only for comprehending the complexity of LGS, but also to formulate a contextually relevant paradigm for business model designs.

2.2.1 Complex Adaptive Systems

Complexity science has emerged as a field of study that aims to assess systems through a conceptual lens that can lend greater insight into systems with interactions that are particularly complicated and chaotic with emergent patterns and behaviours that are very unpredictable and confusing (Roundy, Bradshaw, & Brockman, 2018). Complex adaptive systems can also be described as complex systems that exhibit adaptive behaviour based on component interactions and environmental changes (Roundy et al., 2018). Furthermore, complex adaptive systems are similar to neural-like networks of interacting and distinct components that have a cooperative, yet changing dynamic (Uhl-bien, Marion, & Mckelvey, 2007).

Such a notion of complex adaptive systems is also intuitively coherent as the construct can find its expression in various ways, such as biological organisms and even social systems of human interaction and can therefore be described to possess three basic properties (Levin, 2002):

- Diversity of individual components
- Localised interactions and relationships among the said components
- An autonomous process that replicates, enhances or decomposes a subset of interactions between components

Although the description of complex adaptive systems by Levin poses a fairly broad definition, the concept of *entrepreneurship* can therefore be described as a complex adaptive system as a new entrepreneurial entry into an environmental context; it is also emergent in nature as it reconfigures relationships between components within a given context. The latter is especially relevant given the research problem of a fit between a business model and a complex environment fit and is also supported by (Roundy et al., 2018) who argue that there exists a conceptual fit between entrepreneurship and complexity theory. The theoretical fit is further strengthened by the fact that social entrepreneurship as a construct is also intrinsically complex and that entrepreneurship ventures should continuously adapt to the changing social and economic context. Levin further postulates that adaptive change can also be described by the Evolutionary Theory which holds that natural selection depends on two main factors of influence, namely the differential selection among component types and the scope of variation among those components within the population (Levin, 2002). It was therefore important to understand the level of variability of local government service delivery agents such as social entrepreneurs who function within the complex ecosystem of LGS; the level of heterogeneity will create the necessary conditions for emergent change. Furthermore, if this research study found substantive insights into the business model design paradigms of the sample group, the research output could result in a conceptual framework that could potentially increase the survivorship and sustainability of future social enterprises by virtue of the natural selection phenomenon, thereby creating sustainable emergent change within the system.

In conclusion, to sufficiently probe a complex adaptive system, two distinct phenomena were investigated, i.e. the level of emergent relational patterns between components within the system, and the continuous appearance of new types of components (Levin, 2002). It was anticipated that the intended sample group of the study would lend some interesting insights given this theoretical perspective.

2.2.2 Business Ecosystems

Over the past few decades, the notion of ecosystems has become more prevalent not only in academic discussion, but also in board rooms, as the ecosystem view of dynamic interdependence across industries, organisations, and individual activities has raised awareness regarding the need of new business configurations for value creation and value capture (Adner, 2016). This view has resulted in a paradigm shift in business strategy, moving from the dominant view of competitive advantages to the view of alignment within the system; therefore, resulting in a rather clear definition of the ecosystem: To create alignment between a multilateral set of partners that need to interact for a value proposition to materialise (Adner, 2016).

Although this study has already argued that an ecosystem is also a complex adaptive system, it has been challenging to properly distinguish between the different characterisations of ecosystems, such as entrepreneurial ecosystems, stakeholder ecosystems, etc. Adner (2016) has therefore attempted to distinguish between ecosystems by two broad characterisations: (1) ecosystems-as-structure with focal *activities* that are built around a value proposition; and (2) ecosystem-as-affiliation – with focal *actors* that are built around a central identify similar to the "hob-and-spoke" model (Adner, 2016).

It was therefore important to understand the dominant logic of social entrepreneurs from the perspective of ecosystem characterisations as this informs the intrinsic approach to value creation and value capture by virtue of their business model designs. Special emphasis was given to the nature of the interdependent relationships within a specific business model as it determines the method of communicating, creating and capturing value. The need for defining the interface mechanism that governs ecosystem relationships was of special importance as it provided insight into the level of alignment within the system. A good example of such interfaces is how stakeholder relationships are incorporated and managed within a business model.

2.3 Business Models

Although there is currently no coherent and universally accepted concept of what constitutes a business model, as there is a wide range of characterisations, classifications, and boundaries of the business model concept (Evans et al., 2017), it was useful to develop a framework that explains the causal links between the internal elements of the firm and its environment (Baden-Fuller & Mangematin, 2013). Furthermore, the construct of a business model can also be described as a particular configuration of relationships that are cognitively manipulatable (Baden-Fuller & Mangematin, 2013) and aided the researcher in understanding the contextual relevance and alignment between the activities of social entrepreneurship and the complex environment of LGS.

The design and function of a business model are however also dependant on the context of the firm, as the business model of an entrepreneurial venture may be dependent on the resources and capabilities that are available at the time. On the contrary, an established firm, such as a social enterprise, might have achieved maturity to such an extent that its capability to dynamically adapt and reconfigure its business model could determine its sustainability and future business viability (Teece, 2018).

There should also be a strong alignment between the strategy of the firm and the business model that it chooses as market segment. A competitive environment will have a great effect on the method of linking internal activities with the external environment (Teece, 2018).

Furthermore, the business model is an integral part of strategy and that just like any strategy, one cannot predict whether a business model will be successful after implementation, but the ability to fine-tune and adapt the model to its environment will be a great determinant of success (Teece, 2018). It could therefore be concluded that if social entrepreneurship ventures aim to achieve scalable impact in the LGS sector, the complexity of the environment will pose a great challenge to social entrepreneurship in that they cannot merely employ an 'off-the-shelf' business model to their ventures, and that a comprehensive CAS approach to social entrepreneurship business model designs should be employed. It was therefore important to gain a better understanding of how contemporary social entrepreneurship business models are designed to be able to gain the necessary insights that are needed to develop a contextually relevant design paradigm.

2.3.1 Social Entrepreneurship Business Models

Social entrepreneurship and social enterprises as a theoretical base, has recently attracted an increasing number of scholarly attention and although the concept of social entrepreneurship has been researched since the 1950s, it has only become an influential stream of literature in the past decade (Saebi et al., 2018).

There seems to be an agreement in academia that social entrepreneurship is a phenomenon where a particular venture combines the aims of economic value capturing with social or environmental value creation (Rivera-Santos, 2015). However, like the business model concept, there is no universally accepted definition of social entrepreneurship or of the construct of business models in the social entrepreneurship context; although the dual mission of social and economic value creation acts as an essential criterion to describe the social entrepreneurship phenomenon (Saebi et al., 2018). However, the tensions that exist within the need to create social and economic value is a perplexing conundrum; especially given the context of the complex environment of LGS which necessitates deeper investigation. Although social entrepreneurship has been held in high regard as a mechanism for addressing social issues, the lack of empirical data has failed to evaluate the true impact of social entrepreneurship at societal level (Saebi et al., 2018) and reaffirmed the need for this research study. The position of simultaneously creating social value and economic value does however have its merits as it often results in greater supply chain efficiency and sustainability of the firm (Santos, Pache & Birkholz, 2015). There also exists a number of isolated case studies that affirm the ability of social entrepreneurship to create societal impact at a scale such as the microfinance institutions that have enabled 91 million people living in poverty to access over US$80 billion in small loans, thereby creating a more equitable and prosperous society (Santos et al., 2015). Furthermore, collectively the social entrepreneurship ecosystem, otherwise known as the social economy or "third sector" is a phenomenon that has seen

increased growth in the past few decades and can in theory be attributed to the structural and managerial challenges of state run services which are often bureaucratic and resistant to change (Shaw & Carter, 2007).

Social enterprises are therefore vital institutions for the delivery and development of innovative solutions to social problems (Shaw & Carter, 2007), but are fragile organisations that struggle to achieve financial sustainability because of the inherent business model tensions. However, to assess a social venture by applying a typological framework can provide some clarity into how hybrid organisations function in different contextual environments and it has been a useful approach to understand the social entrepreneurship business model/environment fit of the research context (Santos et al., 2015).

The four social business hybrid typologies are (Santos et al., 2015):

- Market Hybrids: Clients are also beneficiaries and have automatic value spill overs. These hybrids have low risk of mission drift and the achievement of financial sustainability is relatively easy. Examples: energy, health, water, waste management.
- Bridging Hybrids: Clients are not beneficiaries and have automatic value spill overs These hybrids have medium risk of mission drift and the achievement of financial sustainability is moderately difficult. Example: Matching jobs for disabled people.
- Blending Hybrids: Clients are also beneficiaries and have contingent value spill overs. These hybrids have medium risk of mission drift and the achievement of financial sustainability is moderately difficult. Example: microfinance service offerings.
- Coupling Hybrids: Clients are not beneficiaries and have contingent value spill overs. These hybrids have high risk of mission drift and the achievement of financial sustainability is very difficult. Example: Dual value chains with clients and beneficiaries.

Given the research context of LGS with a specific emphasis on electricity distribution, water reticulation, and waste management services, it was concluded that the intended business model within the sample group of the study reflects the market hybrid typology. Although this conclusion did not sufficiently explain the core elements of the preferable business model, it however provided some valuable insights into the specific sustainability nuances that were needed to develop a coherent model/environment fit.

It was necessary to probe the exact definition of social entrepreneurship, as there are some definition specific nuances that rendered the sample group disjointed from the theoretical alignment of this research study. Although it is true that some market hybrid social entrepreneurship typologies where the clients are also beneficiaries, the question on how one

reconciles the inherent social value vs. economic value paradoxes within the social entrepreneurship construct was raised.

In South Africa, the Playpump case posited an interesting perspective on this dilemma. Playpump was a children's merry-go-round mechanism that was attached to a borehole water pump, a storage tank, and a tap for drinking water (Purkayastha, 2009). As the children played on the roundabout, they pumped water into the storage tank for rural communities to gain access to clean water (Purkayastha, 2009). Trevor Fields, founder of Playpump, was a former National Sales Manager for Penthouse Magazine (a pornography publication in South Africa) and through his astute marketing tactics, he was able to secure US$ 16,4 million from the Bush Administration in the USA to fund the construction of hundreds of such Playpumps (Purkayastha, 2009). Critics have however soon pointed out that the Playpump solution was far too complicated, expensive and unpractical, as children would have to slave away most of the day to be able to deliver the promised water quantity to the local community (Chambers, 2009). This situation begs for the question whether this social entrepreneurship venture was just another marketing ploy to gain economic benefit from a social solution even though the Playpump idea was widely celebrated as a true social entrepreneurship venture (Chambers, 2009). This position was further emphasised by the diverging ontological views on what constitutes "social value" (Kimmitt & Muñoz, 2018). Thus, the essence of the dilemma was how can one securely define and identify a social entrepreneurship venture?

On the other side of the spectrum, if a for-profit entrepreneur unintentionally solves the social problem of poor electricity distribution of local governments in South Africa by providing renewable energy solutions to the constituents of the local economy, can it then be classified as a social entrepreneur purely based on the market hybrid typology? Furthermore, even if we do classify these ventures as social entrepreneurs, how would one classify such an entrepreneur who has a service delivery contract with a local government? Is that entrepreneur, even if he/she delivers a public service for social good not an extension of the functions of local government? Are local government then classified as social entrepreneurs? One could argue that local governments are social entrepreneurs as they are mandated by the Constitution to deliver public services or social good by generating revenue from its constituents. This view is implicitly supported by Santos (2012) who holds that it would be short-sighted to delimit the theory of social entrepreneurship to only targeting disadvantaged segments of the population, but should rather be defined as a pursuit of neglected problems with positive externalities. Although poverty and education are the main problems treated by social entrepreneurs, there are however a plethora of other social needs or "market failures" (Santos, 2012), such as renewable energy, infrastructure needs, and regional development that have been identified as justifiable domains for social entrepreneurship activities. It was

further strengthened by the fact that academic journals mostly seem to discuss the functional relationships between social entrepreneurship ventures and spheres of government (Bozhikin, Macke, & da Costa, 2019).

The researcher found that the concept of a *social entrepreneur* is confusing (Saebi et al., 2018) with little consensus in academic literature on what exactly constitutes a social entrepreneur and what business models he or she should adopt (Demil, Lecocq, Ricart, & Zott, 2010). One could therefore conclude that social entrepreneurship is a concept with a spectrum of manifestations between purely charitable and purely commercial outcomes with many variations in between (Dees & Anderson, 2006). This spectrum view was further emphasised by (Balbo, Hehenberger, Mortell, & November, 2010) who hold that the unit of analysis in determining if an organisation is a social enterprise, should be assessed at the level of the financial structure of the firm, interrogating the capital flow mechanisms of the business model – Figure I.

Figure I - Returns Continuum (Balbo et al., 2010)

<table>
<tr><td colspan="8">All organisations can create “social value” on the Social Enterprise Returns Spectrum</td></tr>
<tr><td colspan="6">Social Purpose Organisations</td><td colspan="2">Commercial Purpose Organisations</td></tr>
<tr><td colspan="2">Charities</td><td colspan="3">Revenue Generating Social Enterprise</td><td>Social Purpose Business</td><td colspan="2">Traditional Business</td></tr>
<tr><td>Grants Only</td><td>Grants & Trading Revenue</td><td>>75 in Trading Revenues</td><td>Break-even: Trading Revenues</td><td>Profitable Social Enterprise (no dividends)</td><td>Profitable Social Enterprise (with dividends)</td><td>Corporate Social Initiatives as a license to do business</td><td>100% shareholder Interest</td></tr>
<tr><td colspan="8">Impact First — Blended Value — Finance First
-100% Returns — Returns Continuum — Market ++</td></tr>
</table>

Furthermore, grasping the concept of how social value is manifested, was also a somewhat perplexing conundrum and warranted further research (Hlady-Rispal & Servantie, 2018). This had some significant implications not only on the social entrepreneurship concept, but also on the intended research methodology and how it related to the population and sample group of this study, especially if the intention of the sample group was to engage in purposeful sampling

techniques and how one purposefully identifies a social entrepreneur within the research context without being biased and misaligned to the aims of the study. Judging from the Returns Continuum Framework (Balbo et al., 2010), it was concluded that Social Purpose Businesses and Profitable Social Enterprises seem to provide an indication of which type of organisations should be included into the sample group for the purpose of the research context as it relates to institutionalising scalable and profitable solutions to the identified market failures. However, to lend some clarity on the social entrepreneurship business model, a few diverging academic journals on the social entrepreneurship business model concept and its impact on social change were reviewed and (codified) into dominant concepts to enable the conceptualisation of a working definition of social entrepreneurship for the purpose of this study. Table II below summarises the literature definitions of social entrepreneurship components and the supported logic of the social entrepreneurship concept as viewed through the theoretical lens of complex adaptive business models.

Table I - Social Entrepreneurship components from the literature review

Authors (year)	Key Components	Logic
Bozhikin et al. (2019)	Social entrepreneurship networks (Ecosystem)	"Social entrepreneurship aims to solve local environmental problems such as access to water…waste management …and sustainable energy, all of which have global relevance." (p.744)
Dees & Anderson (2006)	Social Enterprise - Separates social and economic activities (Diverging) Social Innovation – Blends social and economic activities (Converging) Enterprising Social Innovation (Transcending)	Creating innovative, cross-sector market-oriented approaches to addressing social problems and social needs by transcending the traditional views of social entrepreneurship.
Douglas & Prentice (2019)	Prosocial (Social Mission) Profit-making (Value Capture) Innovation (Transcending, Ecosystem)	Rather than viewing social entrepreneurship in binary terms as either commercial or social, a more holistic and innovative approach should be adopted which may be necessary to solve "government failure" problems
Hlady-Rispal & Servantie (2018)	Value Generation (Value Creation) Value Capture Value Sharing (Ecosystem) Social Value Proposition (Social Mission)	"Social entrepreneurship can be viewed as a phenomenon allowing – within a value network – social value sharing through the logics of value generation and value capture" (p. 76)

Kimmitt & Muñoz (2018)	Closed parameters (Linear) Open parameters (Ecosystem)	Social entrepreneurs can indeed engage in action based on their own understanding of the context of the problem and its solution.
Rawhouser, Cummings, & Newbert (2019)	Multilevel (Ecosystem) Multisector activity and outcome (Ecosystem)	"The impact of social entrepreneurship can be conceptualised (and measured) as changes in human well-being…and often has lagged effects." (p. 101)
Sullivan Mort, Weerawardena, & Carnegie (2003)	Virtuous Action (Social Mission) Opportunity Recognition (Value Creation) Innovativeness (Transcending)	"Social entrepreneurship is…a learning approach to capability building for the delivery of social value and sustained competitive advantage." (p. 86)
Saebi et al. (2018)	Multistage, Multilevel (Ecosystem, Transcending)	"Social entrepreneurship is at its core a multistage and multilevel phenomenon; and conducting research on one analytical level not only misrepresents the phenomenon by also risks advancing the theoretical base." (p. 20)
Santos (2012)	Empowerment (Social Mission) Sustainable Solution (Transcending, Value Creation)	"Social entrepreneurship is an innovation process in the economy that can happen in different institutional contexts, is based on value creation, and operates by its own rules and logic." (p. 350)
Santos et al. (2015)	Clients & Beneficiaries (Social Mission) Value Spill overs (Value Creation, Value Capture)	"Hybrid model typologies enable social entrepreneurs…to learn how to best design their social enterprises and organise for sustainable value creation" (p. 56)
Weerawardena & Sullivan Mort (2006)	Environment (Ecosystem) Sustainability (Transcending) Social Mission	"Social entrepreneurship is thus identified as a behavioural phenomenon operating within constraints" (p. 33)
Yunus, Moingeon, & Lehmann-Ortega (2010)	Value Proposition (Value Creation) Profit Equation (Value Capture) Social Profit (Social Mission)	"We suggest that the social business model is one that substitutes shareholders with stakeholders and could empower capitalism to address overwhelming global concerns."(p. 1)
Zahra & Wright (2016)	Social Multiplier (Social Mission, Value Creation) Redefining Entrepreneurship (Social Mission) Blending Value (Transcending)	"Entrepreneurship provides a crucial pathway to economic and social growth…its role as a social catalyst…by integrating social strategies to create blended value." (p. 625)

Based on the literature review on the social entrepreneurship business model concept and its impact on social change, it became clear that there is no consensus in academia on what constitute these concepts. It can however be argued that there are several common themes in the literature that confirm the view that social entrepreneurship is a behavioural phenomenon. Based on the literature review, this behavioural phenomenon has a few common components that provided content to its function within complex ecosystems:

- Social entrepreneurship as a behavioural phenomenon always starts with the micro system values and social mission of the entrepreneur. However, it is crucial to understand that the entrepreneurial actions are based on their own contextual understanding of what exactly constitutes a social problem and how the solution (or business model) should be designed. The business model is therefore an extension of the ontology, rules and logic of the social entrepreneur.
- Social entrepreneurship ventures function on the social value/economic value axis. The level of saturation of these two elements can either diverge into distinct sets, such as a-typical hybrid business models where customers are not beneficiaries and value spill overs are contingent in nature. However, the level of saturation of these elements can also converge into a blended value proposition where the distinction between social and economic values are not as clear.
- The micro-level is the level of the individual in the organisation. Meso is the level of the organisation, its structure and culture. Macro is the level of institutions, the market, government, cultural traditions and the like.Therefore, a meso-level analysis indicates a population size that falls between the micro- and micro-levels, such as a community or an organization. However, meso-level may also refer to analyses that are specifically designed to reveal connections between icro- and makro-levels. The meso-level business model are therefore heavily dependent on the previous two observations. It appears that most social entrepreneurs regress into the linear and single level of analysis that informs their design paradigm. Such a design paradigm with closed parameters of business model designs will therefore most probably struggle to create emergent change on the broader ecosystem as there is a misalignment between the business model/environment fit.
- To truly create emergent change within the macro-level ecosystem, the traditional paradigm of social entrepreneurship should transcend beyond the linear and binary business model design paradigm towards a more holistic, multistage and multilevel approach. Such an approach articulates the social needs and subsequent solutions in

an innovative way that also transcends the rigid sector-specific boundaries toward a more adaptive approach that creates network value within the ecosystem.

- Social impact as a result of social entrepreneurial actions, are also by definition a relative change in human well-being. The unit of analysis for measuring human well-being can be approached on different levels of analysis, for example: the increased access to nutritional food for a poverty stricken individual on **micro-level**; the social entrepreneurship venture that partners with corporate social responsibility initiatives to create access to jobs for disabled persons on **meso-level**; and lastly, where renewable energy companies develop large scale solar plants that integrate on the national energy network to create a more sustainable energy infrastructure that supports industry development which will result in sustainable job creation on **macro-level**.

These different views were synthesised into a single working definition which was used for the purpose of this study:

> *Social entrepreneurship is an extension of the ontology, rules and logic of the entrepreneur who designs a business model either within closed, single level, or open, multilevel parameters of value.*

Furthermore, the concept on what constitutes social impact was defined as:

> *Social impact is in essence a relative change in human well-being and can be measured on micro-, meso- and macro-level of analysis.*

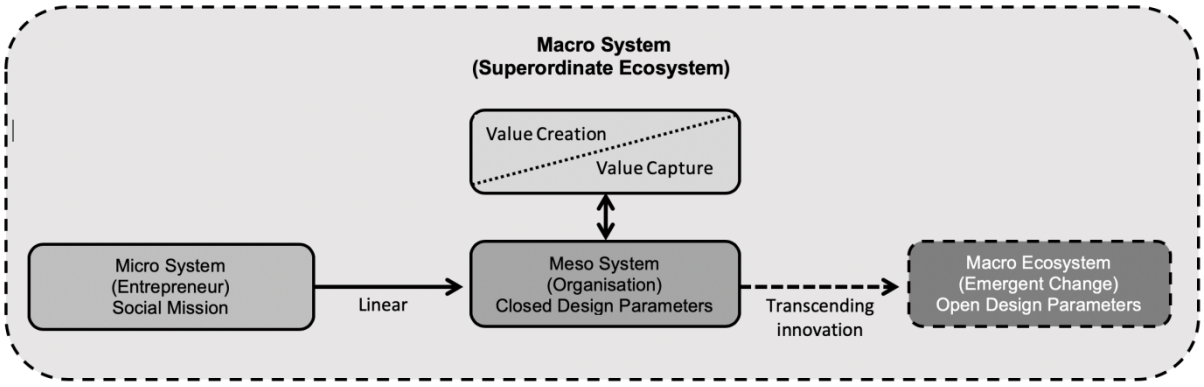
These definitions are represented through an aggregated conceptual framework of a social entrepreneurship behaviour – Figure II. These views are consistent with recent academic literature which holds that the social entrepreneurship construct is a behavioural phenomenon with strong micro contextual nuances that influence the manifestation of the focal firm and can be construed as a design-paradigm-dependent phenomenon (Dees & Anderson, 2006; Douglas & Prentice, 2019; Kimmitt & Muñoz, 2018; Saebi et al., 2018; F. M. Santos, 2012; Weerawardena & Sullivan Mort, 2006; Zahra & Wright, 2016). However, this research study aimed to find empirical data to seek a real-world understanding of this phenomenon. The aim of this study was therefore to analyse the ecosystem from a perspective that transcends the obvious towards a complex adaptive systems approach which seeks a deeper understanding of antecedents of emergent change within the research context.

In conclusion, to clarify the definition nuances of social entrepreneurship, as it relates to the intended sample group of the study, the empirical evidence as portrayed by the literature review, emphasised the position of contextual relevance. Within the research

context of electricity distribution, water reticulation and waste management, the research question was therefore not: “Is this a social entrepreneur sample within the traditional paradigm of serving previously disadvantaged populations?”, but rather: “Do these entrepreneurs understand the complex ecosystem of social needs sufficiently?”; “Did they use this view to design their business model?”; and: “If not, why not?”. This narrative therefore empowered the researcher to critique the closed design paradigm of social entrepreneurship and to transcend into the unresolved realm of complex adaptive systems and emergent social change. The sample group of the study was delimited to this theoretical context to enable theory building.

In conclusion, the social entrepreneurship literature was summarised as a behavioural framework which informed the subsequent sections of this chapter to enable the researcher to gain a better understanding of this phenomenon from the perspective of the theory of complex adaptive systems. This framework is depicted in Figure II and represents the social entrepreneur as the agent which forms the rules and logic of the organisation. Such a social enterprise is often designed from a closed design paradigm and incorporates value creation and value capture mechanisms. However, the academic literature made it clear that social enterprises often transcend their simple cause and effect logic towards an open design paradigm which engages with the ecosystem. It was however not clear exactly how this open design paradigm functions in praxis and how emergent change is created within the ecosystem. The dashed lines represent the open borders of these constructs with process flows depicted by arrows.

Figure II - Social Entrepreneurship Behavioural Framework



2.3.2 Multi-sided Platform Business Models

There is an increasing emergence of professional service organisations that are moving from pure pipeline-based business models towards a more integrated platform-based business model in which suppliers deal directly with customers (Hagiu & Wright, 2015). Fundamentally,

a multi-sided platform model (hereafter referred to as MSP) has two key components that set them apart from other variants:

- They facilitate direct interactions between two or more components.
- Each component is affiliated with the platform focal firm.

The concept of affiliation can be described as a mechanism by which the affiliated components add value to the platform focal firm to ensure that they can continue to directly interact with other components (Hagiu & Wright, 2015). The view that has been expressed in this paper that a business model is analogous to an ecosystem therefore found empathetic support by Adner (2016) and Hagiu & Wright (2015) that ecosystems often exhibit traits of affiliation.

The past decade has also exhibited a substantial proliferation of successful MSP companies such as Amazon, Ebay and Alibaba (Sellers and Buyers), Uber, Lyft, Taxify (Drivers and Passengers), Zapper, SnapScan, Paypal (Merchants & Consumers) and AirBnB (Home Owners & Renters) to name but a few (Hagiu, 2015). The successful implementation of a MSP business is however extremely challenging because of the number of components that are needed to be brought on board to create a sustainable ecosystem, the sheer design challenges of the business model, as well as the governance structure of the organisation (Hagiu, 2015). This provided some very interesting insights into the research problem of how social entrepreneurs design business models for complex environments as it was anticipated. The academic literature that seemed to highlight the need of complex adaptive business model designs for the research context, the challenges of building such a venture seemed overwhelming. It was therefore crucial to find empirical evidence in the research context to be able to gain insights into the real-world nature of such design paradigms. The MSP business model therefore seemed to be well adapted to complex environments and underscored the possibility that MSP models can serve as a viable method of designing business models for complex ecosystems. Empirical evidence was however required within the research context to understand the MSP/Research Problem fit.

2.3.3 The Business Model and Strategy

The business model and the organisational strategy are analogous concepts that are related, yet also distinct from each other (Casadesus-Masanell & Ricart, 2010). Although the sequence of these phenomena are also important as the business model is often the result of the intended strategy (Cortimiglia, Ghezzi, & Frank, 2016). However, for the value proposition of the focal firm to materialise, there needs to be alignment in the structure of the business model configuration that facilitates the interactions between stakeholders and partners (Adner, 2016) and that these choices of business model alignment will have a great effect on the method of linking internal activities with the external environment (Teece, 2018). These views provided

some valuable insights into how organisations should formulate their strategy given the contextual view of complexity.

Firms that are organised as complex adaptive systems seem to achieve higher performance levels and provides support for the view of an organisation as a complex adaptive system and that such a framework should form the basis for a contemporary business model strategy (Eisenhardt & Piezunka, 2011). It could therefore be argued that the business model does not only follow strategy; it is a manifestation of strategy as it can provide a higher level of competitive advantage for the organisation. Furthermore, the simple design of a business model will prove insufficient for the achievement of a sustainable competitive advantage as the business model is a dynamic and emergent phenomenon that needs constant adaptive capabilities and re-alignment to the needs of the ecosystem. It was concluded that a business model configuration that is based on the complex adaptive paradigm can potentially be proven to be a powerful strategic imperative and should be explored by a research study within a specific local context to gain insights into the empirical value of such a view. The conceptual nuances of the business model concept and how it relates to strategy is however outside the scope of this research study.

2.3.4 Business Model Components

Given the myriad of views on the business model concept, 22 academic journals on the business model concept were reviewed and (codified) into dominant concepts to enable the conceptualisation of business model framework. Table II below summarises the literature definitions of key business model components and the supported logic of the business model concept. It is however important to understand that the literature review on business models expanded beyond the linear view of pipeline cause and effect relationships towards a more holistic view of complex adaptive systems which challenges the dominant logic of the traditional business model, especially given the research context of social entrepreneurship business model design paradigms within complex environments.

Table II - Business Model components from the literature review

Authors (year)	Key Components	Logic
Zott, Amit, & Massa (2011)	A unit of analysis (Business Model Design) Systemic Perspective (Network Interface) Value Creation Value Capture	“The business model is a new unit of analysis, as a system-level concept, centred on activities and focusing on value.” (p.1037)
Baden-Fuller & Mangematin (2013)	Customer Sensing (Metacognition) Customer Engagement (Stakeholders)	"Business models are manipulatable instruments that

	Monetisation (Value Capture) Value chain linkages (Value Creation, Network Interface)	can be used to understand cause and effects." (p. 424)
Baden-Fuller & Mangematin (2015)	Value Capture Value Creation Value Delivery (Network Interface)	The business model is an adaptive and emergent model
Casadesus-Masanell & Ricart (2010)	Choices and consequences (Adaptive)	"The logic of the firm, the way it operates and how it creates value for its stakeholders." (p. 8)
Casadesus-Masanell & Ricart (2011)	Alignment with Strategy (Alignment) Self-reinforcement (Alignment) Robustness (Network Interface)	Successful business models create strategic alignment that generates self-reinforcing feedback loops.
Cortimiglia et al. (2016)	Value Proposition (Value Creation) Value Delivery (Network Interface) Value Creation Value Networking (Network Interface) Value Appropriation (Value Creation, Value Capture)	"There is a cross-industry empirical, quantitative validation for the common conceptual claim that the business model is a framework for strategy execution." (p. 427)
Chesbrough (2007)	Value Proposition (Value Creation) Target Market (Stakeholders) Value Chain (Network Interface) Revenue Mechanism (Value Capture) Ecosystem (Macro Context) Competitive Strategy (Alignment)	"A better business model often will beat a better idea of technology." (p. 12)
Dmitriev, Simmons, Truong, Palmer, & Schneckenberg (2014)	Value Proposition (Value Creation) Revenue Model (Alignment) Market Segmentation (Stakeholders) Partners and Resources (Network Interface) Cost Structure and Profit Potential (Value Capture)	Business model development is a dynamic and cyclical process.
Frankenberger, Weiblen, Csik, & Gassmann (2013)	Who? (Stakeholders) What? (Value Creation) How? (Network Interface) Why? (Value Capture)	"Considering the vast scope that is subsumed under the business model umbrella, it becomes clear that, in the real world, a firm's business model is a complex system full of interdependencies and side effects." (p. 6)
Groeger, Bruce, & Rolfe (2019)	Rules (Alignment) Boundaries Agents Feedback	"A business model is an open system that operates to create, deliver, and capture value over time for all stakeholders." (p.103)

	Adaptation Emergence (Adaptive)	
Hagiu & Wright (2015)	Direct interactions (Value Creation, Value Capture, Network Interface) Affiliation (Alignment, Network Interface)	Increasingly, firms are adapting their business models from pipeline to multisided platform models.
Lindgren, Taran, & Boer (2010)	Product (Value Creation) Customer Interface (Stakeholders, Network Interface) Infrastructure Management (Business Model Design, Adaptive, Alignment) Financial Aspects (Value Capture)	"A business model serves as a building platform that represents a company's operational and physical manifestation." (p. 3)
McGrath (2010)	The unit of business (Value Creation, Value Capture) Process Advantages (Business Model Design, Network Interface, Stakeholders, Adaptive, Alignment)	"The business model concept shifts focus from the resources of the firm to how they use them…experimentation is key, within firms and across industries…those who can challenge business model viability will become increasingly important." (p. 260)
Saebi & Foss (2015)	Value Drivers (Value Creation, Value Capture) Relinking of activities (Adaptive, Alignment) Integration of external knowledge (Network Interface)	"The business model structure, content and governance are tightly linked to the firm's innovation strategy." (p. 202)
Santos et al. (2015)	Clients & Beneficiaries (Stakeholders) Value Spill overs (Value Creation, Value Capture)	Social Business Model Hybrids align profits with societal impacts.
Snihur, Thomas, & Burgelman (2018)	Evolving Ecosystem (Macro Context) Emerging Business Models (Adaptive) Incumbent (Maladaptive) Disruptor (Adaptive)	The Business Model should adapt to the needs of the ecosystem.
Teece (2010)	Technology Embeddedness Customer Benefits (Value Creation) Target Market (Stakeholders) Revenue Streams (Value Capture) Value Capturing Mechanism (Value Capture) Design Mechanisms (Business Model Design, Alignment)	"In essence, a business model is a conceptual, rather than financial model of a business." (p. 173)
Teece (2018)	Dynamic Capabilities (Adaptive) Sense Opportunities (Metacognition)	"Strong dynamic capabilities enable the creation and implementations of effective business models." (p.48)

	Seizing Opportunities (Business Model Design, Resources) Transform (Alignment)	
Voelpel, Leibold, & Tekie (2004)	Customer Value Proposition (Value Creation) Core Strategy (Alignment, Value Capturing) Strategic Leadership (Alignment, Adaptive) Dynamic Capabilities (Adaptive)	"The business model reflects the core value proposition, the networks that provide value and strategic capabilities that to continuously reinvent itself to satisfy stakeholder needs." (p. 262)
Wirtz, Pistoia, Ullrich, & Göttel (2016)	Strategic (Alignment) Customer and Market (Stakeholders) Value Creation Resources Network Models (Network Interface)	"A business model is a simplified aggregate representation of the relevant activities of a company…but should always be critically regarded from a dynamic perspective." (p. 38)
Ehret, Kashyap, & Wirtz (2013)	Value Proposition (Value Creation) Value Capturing Network Configurations (Business Model Design, Network Interface) Segmentation (Stakeholders)	"Business models provide frameworks and narratives for navigating a business towards its unique value proposition within a value creation network." (p. 650)
Zott & Amit (2010)	Activity system content (Alignment) Activity system structure (Network Interface) Activity system governance (Value Creation, Stakeholders)	"The business model is depicted by the content, structure, and governance of transactions designed so as to create value through the exploitation of opportunities." (p. 219)

Based on the literature review on business models, it became clear that there is no consensus in academia on what constitutes a business model. It could however be argued that there are several common themes in the business model literature that confirms the view that the business model concept is a conceptual framework. Based on the literature review, this conceptual framework has a few common components that provides content to its function within complex ecosystems, namely:

- All business models function within a macro-level superordinate ecosystem.
- Macro systems can be defined as stakeholder species as there are countless different stakeholder system configurations within the ecosystem, such as communities, suppliers, governments, beneficiaries, informal groups, individuals, and customers.
- The organisation is a meso-level phenomenon that has a similar structure and content as other macro-level stakeholder species and interacts with other systems through its business model. The business model is therefore a manifestation of the organisation.

- Within the organisation, you will find the micro-level governing system – usually the entrepreneur who designs the content and structure of the business model.
- The content and structure of the organisation is strengthened by the micro-level resources and capabilities within the firm. Micro-level subset systems can have functional manifestations such as the marketing team or the financial team. The content and structure of the organisation can grow by virtue of its value network efficiencies.
- The stakeholder species that form part of the value network are connected to the organisation by meso-level network interfaces. A network interface can be thought of as the mechanism that governs the relationships between the organisation and the connected stakeholder species. Examples of network interfaces are for example: a contract that governs a relationship; an IT platform for stakeholder engagements; a negotiation team or even a call centre that manages customer relationships. The number and scope of stakeholder species that are affiliated or structured into the organisation is dependent on the business model design.
- Value is created, delivered and captured through the network interface. The value network configuration between the organisation and stakeholder species is adaptive and can take on several forms. For example, profits can be exchanged for social value, or information can be exchanged on a digital platform for monetary value. The content and nature of the network interface depends on the business model design. This model therefore weakens the traditional position of mutual exclusivity between social and economic benefits as it is by virtue of the network interface configuration where social and economic value exchanges are determined.
- Finally, the business model (which is a value network design) needs to align with the ecosystem's needs and the organisational strategy.

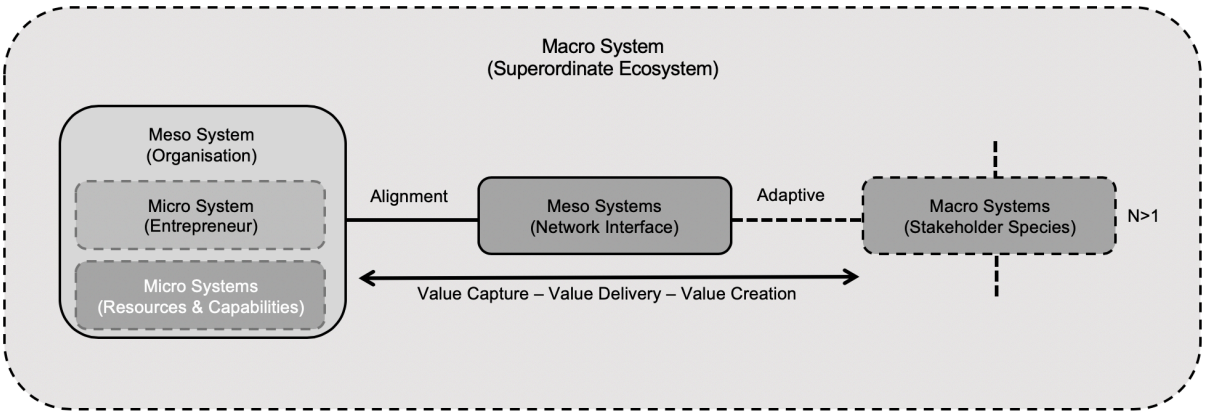
These different views were synthesised into a single definition which was used for the purpose of this study:

> *The business model is a conceptual framework that represents a dynamic system of adaptive network interface configurations that connects the organisation to stakeholder species through which value is created, delivered and captured.*

This definition is represented by a conceptual framework of a Complex Adaptive Business Model (Figure III). This view is consistent with recent academic literature which holds that the business model construct is a dynamic and emergent phenomenon similar to an organism that aligns and adapts its purpose to the needs of immediate ecosystem (Baden-Fuller &

Mangematin, 2015; Dmitriev et al., 2014; Groeger et al., 2019; Snihur et al., 2018; Teece, 2018; Wirtz et al., 2016). This framework expands the previous framework (Figure II) by linking the social enterprise to its external environment. This link is represented by an intermediary mechanism called the 'network interface' which manages the relationships between the social enterprise and the macro-level stakeholder species. Most importantly, the network interface represents the rules of interaction (Levin, 2002) through which value is created, delivered and captured. Conceptually, this process needs to be in alignment with the rules and logic of the social entrepreneur and should be adaptive to the changing needs of the various stakeholder species. These stakeholder species can represent any entity that enables the social enterprise to survive into perpetuity and may constitute customers, capital providers, competitors, or communities. However, this research study aimed to find empirical data to seek a real-world understanding of this phenomenon which will critique the content of this ontological framework as it is merely a conceptual framework that has been developed by the literature review. It is however not clear how this framework is manifested in praxis.

Figure III - Complex Adaptive Business Model



2.4 Design-thinking

Design-thinking has emerged as a desirable process approach to develop the work of designers, although it is a difficult concept to properly define as there are gaps in the coherence between the theory and practice of design-thinking (Carlgren, Rauth, & Elmquist, 2016). It was however interesting to take cognisance of the fact that design-thinking has also sparked deep interest in the strategic and management debates as the 'human-centred' empathetic approach to designing interactions with clients and stakeholders has resulted in significant successes and breakthrough ideas (Carlgren et al., 2016). The question arose that if the assumption holds true that social entrepreneurship ventures have failed to scale because of the lack of alignment between their business models and the complex environment of LGS, does it follow that there exists a possibility that a lack of empathetic interactions with different stakeholders in LGS has resulted in a business model design paradigm that was informed by

the biases of linear thinking. It was therefore important to understand the contextual method of enquiry that informs the business model design paradigms of social entrepreneurs as such insights could point to design optimisations for the given context.

Designing business models within the LGS environment is a fundamentally complex and dynamic process with a multitude of problems and opportunities and therefore, cannot be solved by applying a linear and analytical problem-solving technique. Design-thinking is a complex problem-solving method that utilises a human-centred observational approach to gain deeper insights into the nature of a problem and is a critical precondition for exploring, developing and testing a possible solution (Glen, Suciu, Baughn, & Anson, 2015). It seemed to be a suitable method for the development of a social entrepreneurship business model for the LGS sector. The theoretical position of design-thinking also finds support in other business model design literature that emphasises the alignment between the business model and its ecosystem and stakeholders (Adner, 2016; Casadesus-Masanell & Ricart, 2011; Snihur et al., 2018; Teece, 2018).

The design-thinking process has the following key steps (Glen et al., 2015):

- Problem-finding that identifies the contextual background.
- Observation that emphasises the different stakeholders.
- A visualisation process that seeks to identify the “jobs to be done” that frames the problem into various “what if” scenarios.
- An ideation step that seeks to suspend the evaluation of possible solutions and rather seeks to creatively generate a pool of different solutions and then to select the most promising options.
- Prototyping by using a conceptual framework for business model development.
- Testing and validation seek to generate feedback on the proposed business model or solution. The critical element of a successful business case is that it needs to be desirable, feasible and sustainable.

In conclusion, to properly account for environmental complexity, business model designers need to employ design-thinking methods to their development process if they aim to achieve the needed sustainability. This position is also in coherence with, and strengthens the complex adaptive systems approach to business model development which necessitates an in-depth enquiry into the needs of competing systems to sufficiently factor in the complexity of the environment.

2.5 Business Model Design Process

According to (Casadesus-Masanell & Ricart, 2011), competitive strategies used to be the primary building blocks of sustainable advantages, however, the quest for sustainability has shifted to the focus on novel business models that are hard to imitate. Business models are therefore strategies in themselves, however, not all business models work equally well and the great ones share three common characteristics (Casadesus-Masanell & Ricart, 2011):

- The business model should be aligned with the company's goals.
- There needs to be internal consistency in the firm.
- The model should be robust, agile and sustainable given the rapidly changing complexities of contemporary business environments.

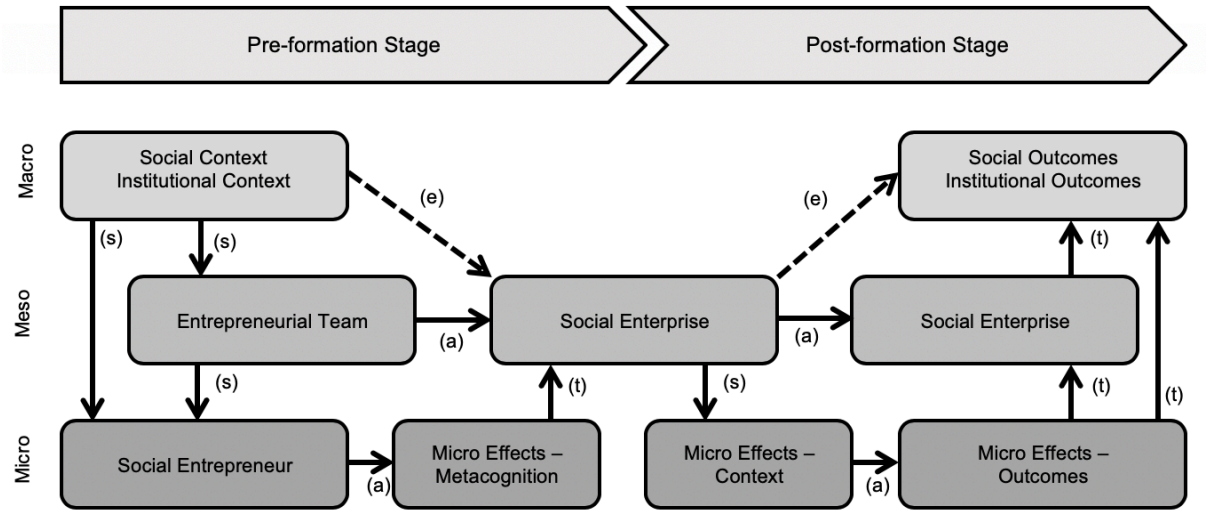
These elements reinforced the necessity to incorporate design-thinking theories in the business model design process as general alignment and consistency between internal activities and the enacted environment are needed. Furthermore, it also emphasised and supported the complex adaptive systems approach to business model design paradigms as the model should be robust, agile and sustainable in a complex environment.

This new paradigm of business model design also emphasised the need for collective engagement at a systems level between as many stakeholders as possible. The latter is strengthened by recent research that concluded that there is a significant positive relationship between collective engagement and organisational success and service prosperity (Eldor, 2019). Although the research by Eldor (2019) was limited to the collective engagement at organisational level and its relationship to customers, it suggested that these findings should also be tested at institutional level of social entrepreneurship as it relates to customers and beneficiaries.

The business model design process is a crucial element in the overall lifecycle of the focal firm, as a good business model will often out-compete a better idea or even a better technology, hence one will often find exciting new technology fails in the marketplace because of bad maladaptive business models (Chesbrough, 2007). The business model design process is however not a static process and quite contrary to the traditional business model design paradigm; it is rather a dynamic and cyclical process (Dmitriev et al., 2014). Therefore, it logically followed that the essence of a business model within complex environments should rather be based on continuous experimentation and adaptation (McGrath, 2010). Furthermore, adaptation should not be an end in itself, but should rather be a process of re-alignment to the needs and pressures of the immediate ecosystem (Snihur et al., 2018). The business model design process is therefore an opportunity to create dynamic capabilities which will lead to a more coherent, effective and sustainable model (Teece, 2018). In conclusion, recent

academic literature on the social entrepreneurship business model development, as a multistage and multilevel phenomenon, is therefore limited by the fact that is seems to be a single cycle process (Figure IV) (Saebi et al., 2018) and should rather be adapted to be a cyclical and dynamic process with multiple iterations of re-alignment. This aggregated business model design process paradigm is also aligned with the theoretical view of complex adaptive systems and strengthens the position of a complex adaptive business model framework. However, the position of a complex adaptive design process has been tested by empirical evidence through this research study to be able to create greater understanding of the current design process paradigms within the research context.

Figure IV - Social Entrepreneurship as a Multistage, Multilevel Phenomenon (Saebi et al., 2018)



2.5.1 Antecedents of Business Model Designs

It has already been established that the design and formation of an entrepreneurial venture is an emergent phenomenon which is in coherence with the theory of complex adaptive systems. Thus, the starting point for understanding the emergence of the social entrepreneurship venture should be rooted in the assessment of the broader social entrepreneurship ecosystem which is conceptually a complex adaptive system (Roundy et al., 2018). It was important not to confuse the different levels of analysis as highlighted by Saebi et al. (2018) which assesses the formation of the social entrepreneurship venture on a micro-, meso- and macro-levels of analysis. The aim of this research study was not to divulge into to detail specific unit of analysis of each level, but to rather highlight the key antecedents of social entrepreneurship business model design processes to form a coherent conceptual understanding. It was very important not to confuse the social entrepreneurship ecosystem with the dominant logic of

entrepreneurship ecosystems as a regional development or strategic paradigms, but rather as a paradigm of complex adaptive systems.

On a micro-level, it was important to understand the individual context of the entrepreneur from a perspective of entrepreneurial preconditions which were intrinsically part of the business model design process. There are however a myriad of theories that describe the entrepreneurial mindset (Haynie, Shepherd, Mosakowski, & Earley, 2010), motivations (Carsrud & Brännback, 2011), perceptions (Renko, Shrader, & Simon, 2012), intentions (Lee, Wong, Foo, & Leung, 2011) and opportunity recognition and evaluation (Renko et al., 2012) as micro-level antecedents to entrepreneurial activities. For the purpose of this project, the researcher argued that the business model design process forms part of the entrepreneurial venture creation process as outlined by (Saebi et al., 2018).

It was however interesting to compare the findings of Shaw & Carter (2007) with the abovementioned literature of micro-level antecedents, as Shaw and Carter concluded that the five main themes of theoretical antecedents in social entrepreneurship development processes are: (a) Usually a group of entrepreneurs that (b) engage in an opportunity recognition process with (c) strong social network embeddedness and (d) who employ rigorous innovation tactics to (e) achieve both maximum social and economic benefit. Although the opportunity recognition element is supported by the dominant literature on entrepreneurial development processes, the other four elements posed some interesting insights into possible novel antecedents for social entrepreneurship business model design paradigms within the research study context. Although the study of Shaw and Carter was conducted within the context of the United Kingdom, this research study could potentially build on their findings.

Furthermore, the assessment of the meso-level antecedents provided very little utility to the research process as the entrepreneurial venture is an outcome of the preceding developmental process steps; the macro-level was however particularly relevant to the research context.

One of the most relevant macro-level antecedents to entrepreneurial activities within a given ecosystem, is the aggregation of individual entrepreneurial activities (Roundy et al., 2018). However, in coherence with the theoretical view of complex adaptive systems, it was important to factor in the environmental effects on the entrepreneurial process. The historical and preceding social and economic context was therefore a very important antecedent to the business model design process and emphasis was placed on the inherent tensions that exist within the macro-environment. The aggregate of the abovementioned antecedents will therefore enable the social entrepreneur to engage in a robust metacognitive practice that will sufficiently align the business model design with the adaptive space between competing

systems, thereby increasing the viability of the business model and the sustainability of the firm.

2.5.2 Creating Social Impact through Emergent Change

One of the most striking challenges of social entrepreneurship ventures is the inherent difficulty in measuring and quantifying social benefits which are often intangible and difficult to accredit to the activities of the social entrepreneurship venture (Hlady-Rispal & Servantie, 2018). This was probably because the unit of analysis from a social impact perspective is systemic in nature and cannot be quantified by simple measures. However, to assess the scope of social impact might be more coherent if the theoretical lens of complex adaptive systems is applied to the given context. This view was supported by (Hlady-Rispal & Servantie, 2018) who reported quite surprisingly that very few social entrepreneurship studies have analysed the effects of social entrepreneurship value creation on the broader ecosystem and they emphasise that organisations should understand the architecture of the ecosystem if they want to create a sustainable venture. This position underscored the need of this research study to probe the ecosystem sensing abilities of social entrepreneurs within the research context of this study and is highlighted by Hlady-Rispal & Servantie (2018) as an area of further study and theory development.

Furthermore, it was also important to understand the role of the entrepreneur as an individual in the business model design process and although a few key attributes were highlighted as antecedents to the business model design process, little has been said about the entrepreneur's propensity to create emergent change at the ecosystem level. The concept of individuals that effect emergence is well documented by the theory of complex adaptive leadership, however, the unit of analysis in this literature was mostly limited to the individual and organisational level and it is a conceptual framework that is often employed by organisational development and Human Resource Specialists (Hinson & Osborne, 2015; Uhl-bien & Arena, 2016; Uhl-bien et al., 2007). Therefore, because the business model is a system that participates and influences the immediate ecosystem (Snihur et al., 2018), it logically followed that if the business model is a result of the entrepreneur design paradigm, it makes intuitive sense that the entrepreneur should employ theories of emergent change to the ecosystem context if the social entrepreneurship venture aims to truly make an ecosystem level impact on society.

It was therefore logically feasible to employ complex adaptive leadership theories to the early stage business model design process so that the ecosystem sensing and adapting abilities of the social entrepreneur can manifest in the business model design. This was also aligned with the theory of design theory and complex adaptive systems theory that emphasised the need

to align the business model design to the needs of the ecosystem and also to the strategy of the focal firm (Adner, 2016; Casadesus-Masanell & Ricart, 2011; Glen et al., 2015; Teece, 2018).

By utilising some of the design components of the conceptual framework of the complex adaptive business model (Figure 5), the social entrepreneur therefore needs to leverage the theory of complex adaptive leadership and the theory of design-thinking to the business model design process. This is also aligned with the pre-formation stage in the business model design process of Saebi et al. (2018) which emphasises the social and economic context sensing abilities of the social entrepreneur. By applying the theory of complex adaptive leadership to the theory base, the social entrepreneur therefore needs to sense the needs of the ecosystem and especially given the complex nature of competing systems, such as the social and commercial ecosystem, should create an adaptive space between these systems (Uhl-bien & Arena, 2016). This can be achieved by filling the adaptive space within the ecosystem through stakeholder engagements that apply the following complex adaptive leadership principles (Hinson & Osborne, 2015):

- Drive for “fitness”: Create alignment or a business model/ecosystem fit (Snihur et al., 2018).
- Diversity of views: Apply design-thinking principles to the iterative and cyclical business model design process and engage with as many system stakeholders as possible (Carlgren et al., 2016; Dmitriev et al., 2014; Glen et al., 2015).
- Connectivity: Use a robust network interface to increase the quantity and quality of value and information exchanges between stakeholders (Groeger et al., 2019).
- Safety: Business models with dynamic complex adaptive capabilities require a psychological safe environment that supports risk-taking and experiments (McGrath, 2010).
- Edge of chaos: Emergent change will not happen in stable environments, hence by following the preceding principles, the edge of chaos will ensure business model innovation (Baden-Fuller & Mangematin, 2015).
- Control: The level of system governance should modulate the creative energy levels within the firm to form coherent structure and content in the business model (Zott & Amit, 2010).

2.6 Conclusion

Given the myriad of approaches to designing business models as discussed in the literature review, it was advisable that a coherent framework be developed that incorporates the complex adaptive systems approach to a business model design and its design process within

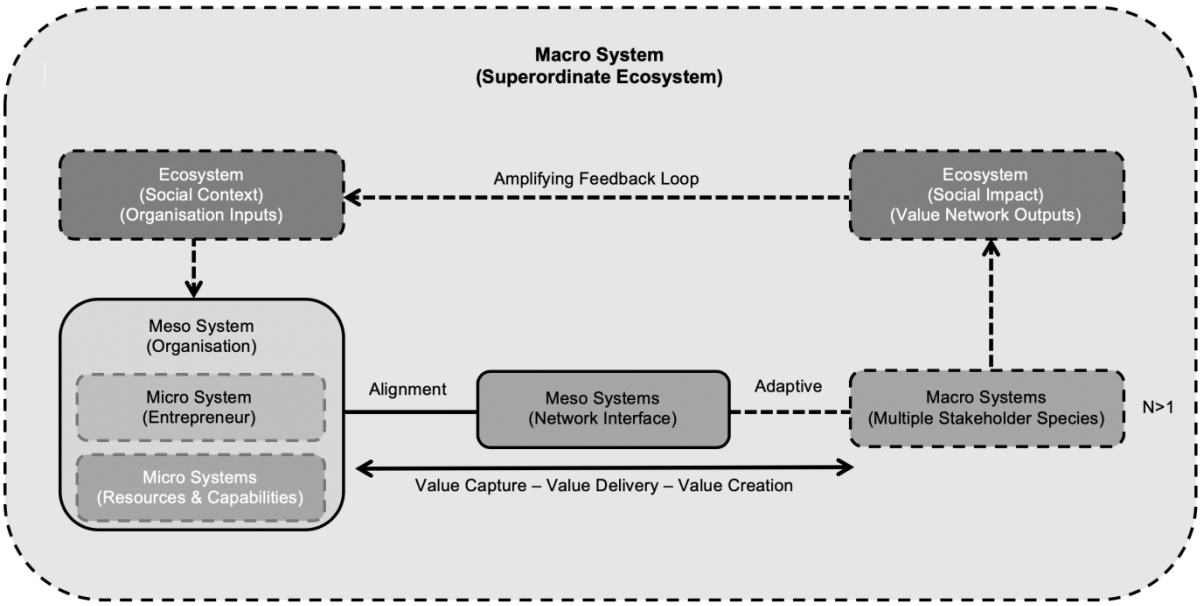
the context of the research problem. This need was further strengthened by the fact that most research on the situational mechanisms to social entrepreneurship theory development focuses on singular levels and stages of the social entrepreneurship phenomenon (Saebi et al., 2018). Furthermore, the multistage, multilevel framework (Saebi et al., 2018) assessed the social entrepreneurship phenomenon at micro-, meso- and macro-levels within the pre-formation and post-formation stage process (Figure 6). The framework was insufficient given the need of utilising design-thinking and complex adaptive system theory approach to the identified design paradigm. However, the Saebi framework served as an excellent starting point for theory building within the context of this research study and was supplemented by the complex adaptive business model framework that has been developed through the literature review of contemporary business models.

One of the most obvious shortcomings of the Saebi framework is its lack of consequent design iterations because of the fact that the business model as a conceptual framework is a dynamic and cyclical process (Dmitriev et al., 2014). The business model design process, as described in this study, also needed to be supplemented by other theoretical imperatives, such as those that have been highlighted in the sections relating to design-thinking, antecedents to business model designs, the alignment of the business model and strategy, and the theory of emergent change. It could therefore be concluded that by supplementing the Saebi business model design process with the mentioned theories and by building the process around the complex adaptive business model, it was anticipated that by synthesising and aggregating these converging theories, it would provide a coherent and articulate framework for social entrepreneurship business model design paradigms within complex ecosystems.

The complex adaptive business model therefore needed to be supplemented by a design process approach that is cyclical, iterative and dynamic in nature (Figure V). This framework was therefore consistent with the academic literature with a special emphasis on the cyclical sensing activities of the focal firm which is informed by the ecosystem context and the emergent ecosystem impact which is a result of the value network outputs of the business model. The open design paradigm of this framework therefore is represented by dashed lines around macro-level ecosystem constructs with a cyclical flow represented by arrows. However, although the academic literature provided conceptual support for this framework, it was however adapted from three diverging bases of theory: social entrepreneurship, business models, and complex adaptive systems. This research study aimed to test the conceptual coherence and validity of this proposed conceptual framework to aid theory building. The core elements from this aggregated synthesis (Figure V) could be summarised as five integral steps in the iterative process, namely:

- The individual and organisational context of the focal firm.
- The network interface that connects the focal firm to its network through which value is created, delivered and captured.
- The ecosystem which has a various number of diverging stakeholder species.
- The ecosystem impact which should be measured by the focal firm.
- The ecosystem context which informs the adaptive capability of the focal firm.

Figure V - The Business Model – a complex adaptive design process



Chapter 3 – Research Questions

3.1 Introduction

This chapter outlines the research questions that serve as the guiding framework of this study and are based on the review of the literature as presented in Chapter 2. The literature review concluded with a proposed conceptual framework which posits a complex adaptive design process for social entrepreneurship business models (Figure V). This framework has five predominant themes that informs the model and was used to articulate the preferred research questions. These five themes are namely: (1) to understand the rules and logic of social entrepreneurship business models; (2) how this model creates network value; (3) how stakeholders are included in this model; (4) how it creates social impact; and (5) how the model adapts to complex environments.

The research questions are therefore derived from these five themes and were used to develop the research methodology, interview schedule, and code book to be able to test and expand on the proposed conceptual framework.

3.2 Research Question 1: Social Enterprise

What are the rules and logic of social entrepreneurship business models?

3.3 Research Question 2: Value Network

How does the business model of the organisation create network value?

3.4 Research Question 3: Stakeholders

What is the role of stakeholders in the business model of the organisation?

3.5 Research Question 4: Ecosystem Impact

How does the business model of the organisation create social impact?

3.6 Research Question 5: Ecosystem Context

How does the business model of the organisation adapt to complex ecosystems?

3.7 Conclusion

These research questions form the basis of the study. It is anticipated that the answers of these questions will create a better understanding of the business model design paradigms of social entrepreneurs in the local government services sector. The following chapter will outline the preferred research methodology that was used for the research process.

Chapter 4 – Research Methodology

4.1 Introduction

This chapter outlines the research design of the research study and aligns the content of this chapter with the research questions that were posed in Chapter 3. This study employed a qualitative approach to study the business model design paradigms of social entrepreneurs in local government, with specific emphasis on the social entrepreneurs that function within the electricity distribution, water reticulation and waste management services sectors of local government in South Africa. The study of this population yielded rich insights into how a business model fit into complex environments and resulted in the expansion of the theory base.

4.2 Research Design

Most social entrepreneurship and business model literature highlights the lack of coherent definitions of these concepts (Saebi et al., 2018) (Evans et al., 2017). Although the literature review attempted to create a frame of reference for these concepts, there was a need for a better understanding of the apparent paradox between the simplicity of a business model and the complexity of the contextual environment in which the model needs to function. An exploratory research study aimed to seek new insights on a topic that was not clearly understood by the researcher (Saunders & Lewis, 2012) and was appropriate for the research problem as there is a lack of literature within the given context as outlined by the research problem. There was however the possibility of incorporating a deductive approach from a social entrepreneurship literature review as it was anticipated that some of the social entrepreneurship business model frameworks, such as the Saebi et al. (2018) model could form the basis for adapting the model to the contextual complexity that would also aid the formulation of the research questions, therefore stimulating the theory building process. An inductive research approach involved a “bottom-up” approach to theory development by analysing data that was already collected and which generated conclusions that created a better understanding of the research context (Saunders & Lewis, 2012).

Although a combination of methods promised deeper and richer data than a single method (Saunders & Lewis, 2012), a mono-method qualitative approach was chosen for this study as was envisaged that in order to develop a better understanding of the research problem, an interview strategy was followed. It was very useful in generating data for theory development (Saunders & Lewis, 2012). Furthermore, the researcher had potential access to a wide variety of social entrepreneur respondents within the three identified sectors of public services and also enriched the research findings.

However, the researcher encountered time constraints and a cross-sectional time horizon was used in collecting data as interviews could be completed in a relative short period (Saunders & Lewis, 2012). A semi-structured interview method of data collection is a method in which a set of themes are covered by predetermined questions that are asked in varied chronological order (Saunders & Lewis, 2012). This technique was appropriate given the fact that it complemented the qualitative exploratory nature of the study and that the data enabled purposeful theory building.

4.3 Population

The population of the study consisted of social entrepreneurs in the South African local government context as they have a thorough understanding of public service dynamics and therefore were in a good position to understand the challenges, enablers, and critical elements of successful public service initiatives. The working definition of what constitutes a social entrepreneur, as viewed from the relevant conceptual frameworks of complex adaptive systems and business model theories, was delimited by the construct specific literature review in Chapter 2 and was assessed within the parameters of the proposed conceptual frameworks.

Social entrepreneurs presented a rich population for research as there are a myriad of social entrepreneurship theories that highlight the tensions of engaging in business models that have both a social and an economic mission, and also to probe how the business model design relates to emergent change from an ecosystem perspective of complex adaptive systems. Engaging with the social entrepreneurs in the public services sector of local government therefore presented compelling insights into the key elements of success that are needed for creating a business model for sustainable social ventures with systemic emergent change and invites closer academic attention. It was anticipated that by engaging a population that represents a wide variety of opinions on the role of social entrepreneurs in LGS and how they strategically design business models for this purpose, could potentially result in a rich research output that will build on current business model design theories. The researcher was confident in the accessibility of the proposed population and was validated by the concluding interviews and findings.

Furthermore, as a developing economy, South Africa is a prime location for conducting research in social entrepreneurship as a model for creating social and economic change because of the fact that even though South Africa has almost insurmountable social and economic challenges (Akinboade et al., 2014), these challenges are not unique to South Africa and that the theory building process of this research study could potentially create a social entrepreneurship business model design paradigm that could be transferable to other socio-economic contexts. However, the researcher is cognisant of the fact that the transferability

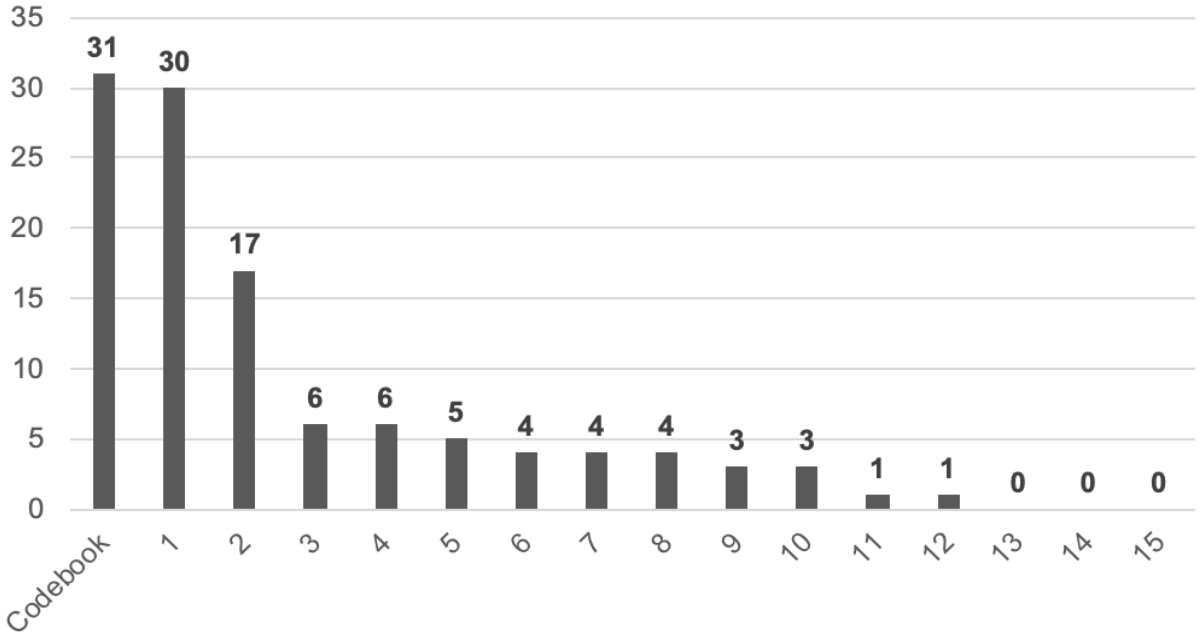
and generalisability of the research findings are severely limited by the qualitative research method and should be supplemented by further research.

4.4 Sampling

The sampling frame depended to a great extent on the research questions that needed to be answered and whether the total size of the population was known (Saunders & Lewis, 2012). Because the research methodology was of a qualitative nature, a non-probabilistic sampling technique was preferred in that no statistical analysis was required (Saunders & Lewis, 2012). The researcher applied judgement and actively chose a sample from the population and therefore employed a purposeful sampling technique. Purposeful sampling is a frequently used form of non-probabilistic sample in qualitative research (Saunders & Lewis, 2012). Purposeful non-probabilistic samples are generally selected given the predetermined criteria relevant to the research purpose and that data saturation usually is reached by the time twelve interviews have been analysed given the assumption of sample homogeneity. (Guest, Bunce, & Johnson, 2006). However, to ensure a higher level of respondent variability and to align the sample group to the contextual research background of poor electricity distribution, water reticulation and waste management services, the sample was purposefully selected from social entrepreneurs that operated within these three sectors. The sample also specifically consisted of social entrepreneurs that delivered renewable energy, water treatment and waste recycling services not only to local governments but also to local government constituents such as communities, businesses, industries and individuals. The sample group was specifically selected from three different geographic locations, namely Pretoria, Johannesburg and Cape Town to further strengthen the validity of the research findings. These sampling tactics also enriched the data and was supported by the sample specific definitions as discussed in Chapter 2.

The path to sustainable business models rests on the ability of social entrepreneurs to adapt their business models to the environment (Santos et al., 2015), therefore, by employing a theoretically-based construct sampling strategy, the selection of a social entrepreneur sample was justified (Patton, 2002). However, given the possibility of generating many new codes from open-ended questions, it was important to select a relatively homogenous sample group and although 15 social entrepreneurs were purposefully selected as participants, data saturation was reached after 12 interviews were conducted (Figure VI) (Guest et al., 2006). The sample group therefore yielded enough data within the theoretical constraints of the measurement instrument, thereby strengthening the validity of the research method.

Figure VI - Number of new codes by interview



4.5 Unit of Analysis

A key consideration when selecting a unit of analysis is the academic intent of the researcher (Patton, 2002). Given the fact that the selected population of the study were social entrepreneurs within the local government context, the unit of analysis was the senior managers or executive management individuals within the organisations of the sample group. However, it was important to take cognisance of the fact that although the key individuals of social enterprises provided valuable insights into how social entrepreneurs design business models within the context of complex environments, the findings also provided insights into the organisational and institutional levels of analysis which were subsequently discussed in Chapter 6 as the strict boundaries of the individual unit of analysis would fail to sufficiently answer the research questions.

4.6 Measurement Instrument

As mentioned before, a semi-structured interview method was used in the research study. These interviews were rooted in a purposeful topic that was informed by the literature review, such as the proposed conceptual framework. The selected measurement instrument therefore employed an interview guide approach and entailed the following three elements (Patton, 2002):

- The guide covered specific topics and the interviewer decided the sequence and wording during the interview. The application of such an approach therefore ensured comprehensive data by anticipating any logical gaps in the data that should be closed.

- The flexibility of this approach resulted in divergent responses and different perspectives which was inevitably a weakness, but it resulted in varying perspectives and richness of the data, therefore enabling a greater propensity to validate findings.
- The logic of employing triangulation strategies to create rigor and enhance the quality of data analysis was based on the premise that a single method usually had intrinsic biases and that the use of multiple sources substantially overcame the inherent scepticism that underpins single perspective interpretations (Patton, 2002). Sample triangulation was therefore employed by selecting three different sample typologies as highlighted in the sample section and also by introducing geographical triangulation of the sample group. This technique significantly strengthened the reliability of the measuring instrument and ensured the validity of the data analysis output.
- Furthermore, although the research methodology was not designed from a single theoretical perspective, and although the research design did not attempt to use grounded theory research methodologies, the literature review was composed of three diverging theoretical bases of social entrepreneurship, business models and complex adaptive systems. The introduction of theoretical triangulation therefore would also enhance the probability of concluding with novel findings that would overlap these bases of theory, therefore enabling a greater propensity for theory building (Patton, 2002). It can be concluded that these tactics yielded favourable results.

A sample interview guide has been attached to this study (Appendix B).

4.7 Pre-test

A pre-test was conducted with a social entrepreneur in the local government environment and represented the characteristics of the population of the study. The aim of this pre-test was to determine if the interview questions were clearly understood and that no leading questions were asked which might have influenced the responses so that the data aligned with the theoretical requirements of the study (Saunders & Lewis, 2012). A diagram of the conceptual framework (Appendix B) has been used as a conceptual frame of reference to support and strengthen the logical coherence of the interviews. The pre-test resulted in a coherent interview with articulate responses, therefore justifying the proposed interview schedule as a reliable instrument, and thereby strengthening the validity of the data output.

4.8 Data Collection

The research study purposefully selected and scheduled face-to-face interviews with all the individuals within the sample group and was supported by an interview guide and a diagram of the conceptual framework. The researcher utilised a professional network within the three relative sectors of the sample group and the purposeful sampling technique held true. The

data that was collected is therefore classified as primary data (Saunders & Lewis, 2012) and is supported by audio recordings. It was anticipated that most interviews would last 60 minutes, although investigator responsiveness and trustworthiness were ensured by being flexible and sensitive to the participants during interviews to ensure the reliability and validity of the data gathering process (Patton, 2002). The interviews consequently lasted between 32 and 95 minutes, with most falling within the range of 60 minutes.

4.9 Data Analysis

The audio recordings of the interviews were transcribed and uploaded to ATLAS.ti for data analysis. The procedure broadly comprised a deductive category formulation in which the content of the literature review was summarised into five themes that informed the five research questions. The data was then consequently categorised in manageable short text strings and attributed to the categories in a pre-developed 'codebook' (Appendix C), which formed the basis to further build the categories that could consequently be amalgamated into umbrella themes to enable a structured and systematic contextual analysis (Flick, von Kardorff, & Steinke, 2004). The deductive nature of the research study therefore aided the development of testable propositions (Saunders & Lewis, 2012) and because the aggregated literature review theories guided the discussion of findings, it further extended and enriched the applied theories (Saunders & Lewis, 2012). These findings were thematically explained through a cross-sectional analysis and were explicitly tied to the research objective in order to ensure a valuable and relevant research report (Saunders & Lewis, 2012). It was therefore an imperative to align the five themes that emerged from the literature review which informed the research questions, and to align the analysis, discussion and conclusion to these five bases of theory. This significantly contributed to the generalisability and transferability of the research findings, although the research output should always be assessed within the context of the project.

4.10 Researcher Bias and Reliability

To achieve reliability, the methods for data collection and analysis should produce consistent findings and the preconceptions and biases of the researcher can be detrimental to the reliability of the research output (Saunders & Lewis, 2012). It was therefore important to test the researcher's interpretation of the data to determine if the report is a true reflection of the interview nuances. In conclusion, although the researcher is confident about the coherence and reliability of the findings and conclusions of this report, it is highly recommended that the research output should be tested by further research.

4.11 Limitations

The qualitative nature of this research study was limited by the subjective nature of the findings and was in essence influenced and informed by an ontological worldview of the researcher (Saunders & Lewis, 2012). The study however attempted to diminish the effect of researcher bias by presenting justifications of the various research methods and logical interpretations by providing a rich set of context-specific data. Several reliability and validity strategies were employed as discussed in the previous sections. The research report limitations can however be supplemented by further quantitative research studies which will test the validity of the study. The process of interviewing experts within the sample group also strengthens the transferability of the findings to other contexts such as developing countries, regions, cities and towns and could be tested by further research.

4.12 Validity

Validity refers to the alignment between the research measurements and what has been intended to be measured by the research design (Saunders & Lewis, 2012). Although the research instrument was informed by the five emerging themes from the literature review that required further research and which consequently informed the five research questions, it could be concluded that the measurement instrument yielded rich data from all five bases of theory and that the relevance of these fives research themes emerged as highly relevant to the respondents in all three sectors, thereby validating the alignment between the measurement instrument and the research questions. The use of a diagram of the conceptual framework (Appendix B) and by presenting the interview schedule to the participants in the interview process, strengthened the validity of the measurement instrument in that it clarified the frame for the thought processes of all the participants during the interviews. Furthermore, the use of triangulation in the sample group also strengthened the validity of the findings if the results found coherence across the various sample groups.

4.13 Ethical Considerations

An ethical research study was conducted by first obtaining ethical clearance from the Ethics Committee of the University of Pretoria (Appendix A). The data collection process was consequently conducted in strict coherence with the terms and conditions of the ethical clearance agreement.

Chapter 5 – Results

5.1 Introduction

This chapter presents the key findings from the interviews with 15 respondents from renewable energy companies, waste management and recycling companies, and also from water and wastewater engineering companies. The individual respondents were in the upper echelons of the organisational structures and included business owners, directors, executives and senior managers. Interestingly, all the respondents associated themselves with social entrepreneurship or identified their company as a social enterprise. This fact therefore achieves the research design aim to purposefully select social entrepreneurship respondents from three diverging industries.

These findings depict the interview responses as they relate to the research questions as outlined in Chapter 3. The research questions are aligned with the concluding conceptual framework as discussed in Chapter 2 (Figure V) and aim to either validate, disprove, or build on the proposed conceptual framework which was informed by the literature review. The conceptual framework therefore requires insights into how social entrepreneurs give content to the business models of their organisations, how this model creates network value within the context of stakeholder relationships and lastly, how the business model creates social impact and adapts to complex environments.

The conceptual framework was applied deductively to the research data analysis process to aid theory building and is represented by the following sections which starts with a description of the participating respondents and thereafter followed by a presentation on the qualitative analysis outputs.

5.2 Description of Participants and Context

Table III - Participants and Context

Company Pseudonym	Industry	Company Age	City
Solar A	Solar & Renewable Energy Company	17	Pretoria
Solar B	Solar & Renewable Energy Company	3	Johannesburg
Solar C	Solar & Renewable Energy Company	17	Pretoria
Solar D	Solar & Renewable Energy Company	2	Johannesburg
Solar E	Solar & Renewable Energy Company	16	Cape Town
Waste A	Waste Management & Recycling Company	40	Johannesburg

Waste B	Waste Management & Recycling Company	10	Pretoria
Waste C	Waste Management & Recycling Company	36	Johannesburg
Waste D	Waste Management & Recycling Company	9	Cape Town
Waste E	Waste Management & Recycling Company	33	Johannesburg
Water A	Water & Wastewater Engineering Company	17	Pretoria
Water B	Water & Wastewater Engineering Company	7	Pretoria
Water C	Water & Wastewater Engineering Company	4	Pretoria
Water D	Water & Wastewater Engineering Company	19	Johannesburg
Water E	Water & Wastewater Engineering Company	35	Cape Town

The names of the participating companies were replaced with pseudonyms to ensure the anonymity of the organisations and their representatives (Table III). As highlighted in Chapter 4, the sample group was purposefully selected from three different industries to strengthen the validity of the research output and five respondents from each industry were interviewed to reduce the relative quantitative bias from the sample group (Table III). This also enabled the researcher to conduct a robust triangulation analysis to test the coherence of the data output. The sample group was also represented by a high variance of company ages and was furthermore varied in terms of location, therefore significantly increasing the heterogeneity of the sample group and thereby increasing the richness of the data collection process which also strengthens the validity of the data outputs (Table III). There was no significant deviation from the sample group typology except for Water D which was not profitable. All other companies can be described as profitable social enterprises.

All 15 interviews were conducted face-to-face at the respondents preferred location; either at the office of the participant's company or in a public setting to reduce measurement bias and increase data richness across the sample group. All the respondents gave consent to an audio recording of the proceedings and a digital copy has been stored electronically. Each participant received the interview schedule, a diagram of the conceptual framework and a consent form before the interview (Appendix B). This was done to aid their understanding of the research aims and to mitigate any possible concerns the respondents might have had.

A pilot interview was conducted prior to the commencement of the data collection process to ensure that the interview questions were properly understood. The pilot interview resulted in a coherent dialogue and the interview schedule was consequently used for all the other interviews. A concerned effort was made to keep the dialogue focused to the bounds of the conceptual framework although a slight deviation was allowed in the case where the respondent passionately wanted to deliver a particular narrative which was deemed important.

5.3 Results Overview

Table IV - Overarching Themes, Categories and Code Frequencies

Themes	Categories and Subcategories	Total Code Frequencies in Categories
Social Enterprise	• Individual Context • Resources and Capabilities • Innovation • Organisational Structure and Processes • Human Resource Strategy • Mission & Vision	159
Value Network	• Network Interface and Stakeholder Management • Value Creation • Product Value • Service Value • Value Delivery • Value Capturing • Adaptation	127
Stakeholders	• Private Sector Relationships • Public Sector Relationships • Civil Society Relationships • The Role of Institutions • Legislation and Regulation	96
Ecosystem Impact	• Measuring Impact and Performance • Scalability • Sustainability	93
Ecosystem Context	• Sensing Mechanism • Opportunity Identification and Evaluation • Adaptive Strategy	99

Although the data was analysed deductively, given the proposed conceptual framework which aims to develop a coherent approach to the way in which social entrepreneurs design business models within complex ecosystems, the emerging themes and categories of the data provide preliminary support for such a framework. Furthermore, the associated code frequencies are evenly spread among the different themes, indicating relational coherence of the measurement instrument which gives a fair representation of all the research questions (Table IV). Furthermore, by triangulating the themes within the various sectors (Table V), it can be concluded that the different sectors have low levels of variability between the different themes, therefore strengthening the coherence of the proposed conceptual framework. However, the supporting data of the proposed framework is analysed in this chapter which will form the basis for deeper interrogation and the analysis in Chapter 6 where the data is compared with relevant academic literature. Furthermore, Chapter 5 and 6 will refer to findings being *validated;* this expression makes reference to the fact that a finding has been cited in all three sample groups and should be interpreted from this context.

Table V - Triangulation Analysis

	Total Code Frequencies		
Themes	**Solar & Renewable Energy Companies**	**Waste Management & Recycling Companies**	**Water & Wastewater Engineering Companies**
Social Enterprise	54	58	47
Value Network*	**56**	39	32
Stakeholders**	37	39	**20**
Ecosystem Impact***	33	45	**15**
Ecosystem Context	32	38	29
Totals	**212**	**219**	**143**

* Solar and Renewable Energy Companies seem to care a lot more about product value and service value.

** Water and Wastewater Engineering Companies seem to care less about legislation and regulation.

*** Water and Wastewater Engineering Companies seem to struggle to solve for scalability because of the high capital requirements of water and wastewater infrastructure.

5.4 Results: Research Question 1

What are the rules and logic of social entrepreneurship business models?

The research question aims to understand the underlying self-identified rules and logic of the social enterprise business model. Although a working definition of the social entrepreneur and the business model constructs have been developed by the literature review in Chapter 2, the research question aims to understand how the social entrepreneur construes the content of the business model from the perspective of their own ontological worldview. Most importantly, the literature review has highlighted the meso-level context of the organisation, individual context of the entrepreneur, and the resources and capabilities of the firm as important elements of the business model of the social enterprise (Table VI). This section will therefore report on the findings as they relate to this theoretical context to aid the subsequent discussion of these findings.

Table VI - Social Enterprise Theme: Categories and Codes

Theme: Social Enterprise				
Rank [AVF]	**Categories and Subcategories (S)**	**Codes**	**Validated**	**Code Frequency**
1 [56]	Individual Context	Association	Yes	15
		Ambitions	Yes	13
		Motivations	Yes	11
		Metacognitive Process	Yes	11
		Values	Yes	6
		Religious Intent		2
2 [35]	Organisational Structure and Processes	Business Model Design Process	Yes	11
		Corporate Governance	Yes	9
		Company Strategy	Yes	8
		Alignment	Yes	7
		Organisational Culture		2
		Culture of Excellence		1
3 [15]	Resources and Capabilities	Capital	Yes	10
		Technical Skills	Yes	6
		Big Data and Analytics		5
		Intellectual Property		4
		Localisation		3
		Complex Skillsets		1
		Family Values		1
4 [10]	Innovation (S)	Alternative Solutions	Yes	6
		Adaptive Capability	Yes	4
		Network Collaboration		4
5 [9]	Mission and Vision (S)	Sustainable Impact	Yes	5
		Economically Viable Solutions	Yes	4
		Awareness and Education		3
		Market Leading Growth		2
		Self-reliance		1
6 [8]	Human Resource Strategy (S)	Training and Development	Yes	8
		Social and Culture Fit		4
		Outsourcing and Collaboration		2

- **Code Frequency:** *Sorted number of respondents in which the code has been cited.*
- **Validated:** *The code was cited in all three sample groups (solar, water and waste).*
- **[AVF]:** *Aggregated Validated Frequencies; the total number of validated frequency counts per category which is used to rank the relative importance of the categories.*

5.3.1 Individual Context

The context of the social entrepreneur as an individual has featured very prominently in the data. The categorical elements of the individual context were not only validated by all three sectors, but it was also the most cited category in the social enterprise theme. All the respondents who were interviewed self-identified with being a social entrepreneur or identified their organisation as a social enterprise. Although some were not sure exactly what those definitions mean and associated themselves with the concept according to their own understanding of what they entail:

> *"the definition of social enterprises is pretty loose, certainly in my mind… so I would say yes, and I would say that by my definition"* – Solar B

In constructing their own definitions of what constitutes social entrepreneurship, some of the core elements that were identified by two respondents were to position the organisation somewhere between charities and pure for-profit companies:

> *"this is not a charitable offering, but it's not driven by a profit motive"* – Solar B

> *"we are not a conventional type of business… because if you are a social entrepreneur and you think profit strictly according to business principles, you will never become a true social entrepreneur"* – Water E

The respondents mostly identified with the focus on social involvement and upliftment and emphasised the need to be an active participant in their respective communities by creating a social impact:

> *"the pure scope of our involvement in society justifies the fact that you could say that it's a social enterprise… and also the impact we make in terms of waste management"* – Solar E

> *"you like to uplift people and improve their living conditions"* – Water B

The respondents' association with social entrepreneurship then informs their metacognitive processes which is a category that was identified in the majority of the interviews. Two respondents' propensity to act on given opportunities within the social enterprise sector was the cognisance of poor products and services:

> *"if something goes wrong, there's no support… I decided to pursue my own company because there is absolutely no after-service"* – Solar A

> *"they put on a lot of mark-up and I feel for people because especially in South Africa, many people don't have the money to go solar"* – Solar A

"we don't like the products they offer" – Solar B

This metacognitive process also caused the respondents to provide insight into their values that drove them to become social entrepreneurs and is a category that is validated by all three sample groups. The most prevalent value driver of social entrepreneurship was identified as a strong moral obligation by four of the respondents with two of them citing their religious values as a key driver for their endeavours:

> "*I thought that if I didn't start a company that was reducing co2, that I was part of the problem and not part of the solution. So, it was a moral decision*" – Solar E

> "*But if you look at the values of the business, we build, the margin that we make out of the material should be a result of doing the good thing*" – Waste E

> "you have a *religious foundation that informs your values… So, the more you give it the more you give the more you get if you put God first in your life before your business before your family before your husband before your kids, you're going to just be successful.*" – Solar A

> "*how did we get through this? you know, it must have been a higher hand. But we don't do things, to gain the favour of God, we know that he paves the way for us, and we pray for this*" – Water E

Solar A also had a strong view on the value of integrity in their life, which links back to the apparent lack of integrity in the sector which was identified in a previous part of the analysis:

> "*I don't like how other companies handle business… if I see something that is wrong in a company, I was taught to be true… the way I run my personal life affects my business.*" – Solar A

The importance of integrity-based values in business therefore emphasises the emergence of a strong self-concept that was highlighted by three of the respondents:

> "*So, it wasn't an economic decision. It was how do I want to define my life? I want to define my life by my environment,*" – Solar A

> "*I'm going to say the environment is in my blood*" – Water B

> "*I'm totally sold out into what I'm doing… I believe in miracles*" – Water D

One respondent then went further to emphasise the value of having an entrepreneurial spirit of innovation in solving complex problems:

"*For us, it comes from the heart, the entrepreneurial spirit to venture into unknown territory… and then the spirit of innovation actually started in the spirit of innovation and self-determination, and you know, pushing the boundaries, breaking barriers*" – Water E

Although one respondent, after 16 years in the Solar Industry, became cynical because of the lack of scalable impact on the environment which can be construed as a fervent passion to create impact at scale which can often leave the social entrepreneur cynical and exhausted:

"*I don't want to make an impact anymore, what I want to do is make as much money as I can. So, my goal now is purely economic. I no longer think the planet has a chance against humanity*" – Solar E

This lead the analysis into the motivations of social entrepreneurs, a category that was explained by most of the respondents. Three respondents indicated that they were primarily motivated by their passion and sense of self-actualisation which is being associated with entrepreneurship:

"*Look, I work very hard. I work seven days a week, 10 to 16 hours a day. I mean, my weekends are my favourite because nobody's bothering me the whole time. And I can just get my work done. So, for me, it was being able to work with other people and the way I brought everyone together… And honestly, I'm not doing it for money*" – Solar D

"*I built the business because of passion. I didn't make any money for three years*" – Solar E

However, most of the respondents had a fairly strong motivation for solving problems that relate to social needs and market failure and argued that they are motivated by community engagements to be able to be attuned to their needs:

"*I think this is going to work. And I've been going at it 14 years. I believe in my solution, my product and the way it is implemented, because it involves people*" – Water D

"*But what motivates me is the fact that you're either part of the solution, or you are part of the problem. And I would rather to be part of the solution.*" – Waste D

"*I think we understand this; this country is going through some massive difficulties. And we have to, we have to try and make a difference.*" – Water A

The intrinsic motivations of the respondents inform their ambitions and 13 out of the 15 companies cited their primary ambitions as scaling their business. The main motivation for scaling the business is to impact as many people and communities as possible. Some of the

mechanisms which enabled them to scale is scaling by means of innovation, partnerships, and excellence:

> "*We'd love to have a big impact on government projects that help communities.*" – Water A

> "*ambition is a better life for all of us out there, at the end of the day is you know it gives you satisfaction when you can see that you've tackled a project, tackle a problem, and you come out on top at the end of the day.*" – Water B

> "*our drive is to expand our horizons, and to become one of the top water treatment companies in South Africa."* – Water E

5.3.2 Organisational Structures and Processes

This section reports on the various organisational structures and processes of social enterprises. The business model design process has been highlighted as the second most important process of social enterprises as 11 out of the 15 participants mentioned such a process as part of the rules and logic of their business. Of these processes, six respondents have validated the process of designing business models together with various stakeholders, or by providing a platform to which the different stakeholders can connect to:

> "*But it's that the realisation or the acknowledgement of that, that from a business point of view, you need to operate with all the stakeholders, you can't alienate isolate, whenever they will. You've got to accept. Maybe that's the word where this acceptance of all the stakeholders, and that they part of your business model."* – Waste A

> "*So, we just reach a gap between the consumer or the house owner, homeowner or the business owner who wants to recycle."* – Waste A

> "*The business model at the moment keeps quite simple. You know, giving the getting customers is basically the main focus is keeping the customer happy and getting the customer involved with the whole process."* – Water C

> "*of course, ourselves as the platform operator, we would be, and then you know, there are various partners that you use to bring this to market."* – Solar B

This approach was further strengthened through the emphasis on network designs that make is easy for stakeholders to interact with and do business with the organisation:

> "*So again, we've said we've really tried to design a business in a way that we make it easy for anyone to make to do business with us."* – Waste E

"*you basically just focusing on the platform model, we link all the different suppliers and entrepreneur does is an entrepreneur is not an inventor is Okay, he takes trades things off the shelf industry packages, and as we're done, you have taken off the shelf technology. I've taken a venture guys already in the industry, and I brought them together with a unique proposal."* – Solar D

This, to some extent, enables the companies to design their models with sustainability in mind, and that the business model should aim to influence the cultures and behaviours of society as Waste A and Waste B explained:

"*I think it kind of were initially we were forced into it. I think we knew, and I think but I think over time, we realize that we're going to have to do this differently to survive and the day we actually put the business model together, we've actually got it in, I think, especially on ethics committees. So, I just want to understand what the trigger events was, where you came to that realization of that it becomes a sustainability issue."* – Waste A

"*so, the return business is a way and also getting a customer that will sign up to your service and be your customer for good. Like I said, but customers a bunch of customers that are signed up in 2008, 2009, they are still our customers… That's one of the risky parts of my business model, that I place the bin, but I have an expense I'm only going to cover that expense in four months. But why am I doing it? I'm doing it because once you've got create that habit, people will continue recycling."* – Waste B

As Waste A put it, the specific ethical trigger events create the necessity for creating an ethically sustainable business model. This lead the analysis into the importance of corporate governance of social enterprises which has been validated by all three sectors where nine respondents discussed the corporate governance of their ventures. The duty of compliance was also discussed in brief:

"*There's a very strong sort of legal compliance, all of that stuff, it's the world we live in, and you've got to keep yourself on the right side of all that stuff."* – Solar B

"*I've been in the business two years. So, first two years, I was clueless as to what in the world corporate governance was. And then as you see the bill and the penalties, you get more acquainted with what's required and by whom it is required… when you're dealing with bigger players, so because I'm pushing into the onsite waste management, the requirements by large corporates have this huge checklist. And you can't even get in the door if you don't tick and supply all these things. So, in terms of corporate governance, health and safety, compliance, legislatively compliance, tax*

wise, whatever, just becomes a norm. And there are due dates for everything. So that helps you keep you in check." – Waste D

Waste D therefore also alluded to the barriers to entry from a compliance perspective, which puts a financial burden on the business model. This is supported by Solar C:

"*I think it's very, it's very unfortunate, is a little bit of a conflict between those two years to be to be compliant. And to be the competitive does not necessarily go hand in hand Because it's costing money."* – Waste E

However, the importance of ethical corporate culture was emphasised by Waste E:

"*Because ultimately as not a sin to make a profit however you want to do proper business and transparent business and ethical business."* – Waste E

The ethical culture of the organisation enabled Waste E to be more efficient from a compliance perspective, thereby cutting down compliance control costs and therefore reducing the financial burden of corporate governance on the business:

"*a strong human capital focused culture that enables you not to spend a lot of money on corporate governance, yes because it's not necessary. no, and we don't spend time on those secrets, because you have a strong trust relationship with accountability."* – Waste E

It can therefore be inferred that a strong human resource strategy enabled Waste E to be a more sustainable organisation. This view set up the analysis for a deeper interrogation into how social entrepreneurs formulate their company strategy. This category has been validated by all three sectors and was discussed by eight respondents, most of which conceptualised their strategy as a need to grow and scale their company:

"*If you look at our five-year strategy, I think what we've always said is, we want to retain our leadership position. And with that comes, challenges, you know, in terms of where we need to play and how we need to play. These are growth plan in terms of you know, so we said, we would just to retain a leadership position, there needs to be growth in terms of what we do. But, it's also now to offer a more holistic way, of waste management service."* – Waste A

"*The strategy of the company is to become the leading water wastewater treatment company in in South Africa, the largest, and to expand the entire group to be become a major employment creation entity and as diversified as possible."* – Water E

Three companies had a strong strategic drive to be a company of excellence which can create truly sustainable solutions:

> "*My strategy is just to bring as much value as I can to as many people as I can, and not compromise the quality of that."* – Solar D

> "*Our strategy will definitely be to create a sustainable solution to anybody's needs... and to be able to service the best we possibly can every single day."* – Waste C

Others were much more nuanced in their strategy with diverging approaches. Most interestingly, these three companies also cited Awareness and Education, a Compliance Advantage, Customer-centricity and a strong Innovation Focus as part of their company strategy:

> "*awareness, awareness, awareness. If I don't make a sale, I want people to talk about it. So, when you talk about sanitation, alternatives to water for flush,* Water D *must come up. If people don't know that it's being done, or that it's possible, then they can't think about it and they can't talk about it."* – Waste D

> "*the main strategy given the market environment is that we simply make sure that our installations are compliant to regulations."* – Solar C

> "*I think the biggest strategy at the moment is getting a customer getting them involved in the whole process. And, you know, telling them, asking them, obviously, what their needs are."* – Solar C

> "*Based on the human capital, instilling that entrepreneurial spirit in them as well. Not stopping at anything, you know, looking for, solutions with our innovation… because our preparation has always been because we have to be four times better than our competitors to this specific time in order to be recognized... So, we are we are looking at things that gives us motivation to excel, to be pioneers and to creating new things"* – Water E

However, to have a strategy is not enough, as the social enterprise needs to create strategic alignment between the elements of the organisation and the strategy to be able to execute on the company strategy. Although there are multiple ways to create alignment, the need for alignment has been validated by all three sectors and seven respondents discussed strategic alignment in brief. Two companies highlighted awareness and training as important concepts when asked about strategic alignment:

> "*So, I think, to start, we're very aware of it at all levels. But more than that, it's not just talks. So, we run as flat a structure as possible. We have, literally a team of people*

who is sole job is to walk around the building, and relieve, you know, bottlenecks. So, you know, there's different teams trying to do things. So, they create that alignment, and, you know, bring people together." – Solar B

"*But everybody understands what you actually do on a day to day basis, and teaching people every single day about your business… and obviously, having, you know, meetings, having stretch sessions, having, you know, compulsory training sessions, and I'll go through product training. There's a whole lot of things we do to improve ourselves."* – Waste C

It can therefore be inferred that the need for awareness and training also reinforces the need of business leaders to take responsibility for and ownership of strategic alignment. The view of total ownership of the social entrepreneur was expressed by Solar D:

"*I'll be delegating points to other people, but I'll be ultimately responsible."* – Solar D

One of the waste management companies also expressed the need of re-alignment or restructuring to be able to execute the growth strategy of the firm:

"*to adapt the structure so I can tap into the to the resources that are available to grow. So, we would need a forklift, we would need a bigger baling machine, we would need to improve operation on site, etc, etc. to get that funding, I need to need to restructure."* – Waste B

This necessitates some kind of "loose alignment", or business model adaptability as discussed earlier and interestingly, it was supported by Waste C who emphasised a 50/50 approach to alignment and adaptation:

"*so, it's a bit of both. It's almost like a 50/50 concept way, you have, let's say 50% of your business model where you need to have alignment, and the other 50% is in terms of adapting to changing circumstances it may be environmental, or legislative, or regulations or whatever, or technology, or customer needs."* – Waste B

However, the organisational culture of the firm needs to facilitate and enable a continuous learning and adapting environment as explained by Waste C and Water E:

"*that joins basically your motto your drive to grow, and I think first and foremost, this business is built on family it's a family business, we portray that out to all our all our staff and then obviously through our clients."* – Waste C

"*We will also ensure a long after we are gone, that people will carry on with it, and it's a culture that is based on growing. But, responsible in the way to do is not just growth*

that it's also sustainable, but also contributes to the development of our people. That's paramount... you know we spoke about earlier that as well the trust around this table is very strong... that creates a certain spirit." – Water E

5.3.2.1 Mission and Vision

In the analysis of organisational structure and processes, the mission and vision of the social enterprise became a fairly dominant theme. The importance of a company vision and mission was validated by all three sample groups. The mission to create sustainable impact was the most frequently cited code group in this subcategory and was validated by four respondents:

"*it's about that long-term sustainable business… and how that translates is to say, you know, if you look at a large entity chasing the share price for the next quarter, next quarter over the course of 400 years is totally irrelevant."* – Solar B

"*if you look at just attached to our vision and our mission kind of together, but really, you know, as we say, environmentally responsible waste management is for us, it's about sustainability."* – Waste A

"*Our vision is to create employment, enjoy the fruits of, of what we have what we achieving, to empowering people, There is nothing no money can pay for what you see what you have a you know, a team to the empowerment of people, You know, if you put value back into people's lives, and you see the transformation, and you see the impact that it has on the family, whatever, This is what it's all about."* – Water C

And a sustainable impact can be construed as a result of economically viable solutions to complex problems:

"*And then if you look at our mission, in its kind of summarize the, you know, says to offer an effective, economically viable solution."* – Waste A

"*the vision of the company is to purify water to look at pollution solutions. That is to with either septic tanks or wastewater treatment plans, or grey water systems. That's basically how we try to come up with solutions for pollution in the environment."* – Waste A

Water C went further to create market awareness for and education on the social problems and potential solutions:

"*Our mission of the company is basically, you know, to make people aware of what's actually in the water. So, to make people visualize and see what actually what's contaminated real time invested in their lives. So, in the long run, the short term is*

basically just telling them that the water coming from the tap is not as clear as it is." – Water C

Waste D purely wants to grow the business into one of the best waste management companies with a special emphasis on job creation:

"*in terms of vision and mission for the business, I would say it is to grow the business to be one of the top ten waste management companies in southern Africa to assist people to recycle, and do so in environmentally responsible manner, at the same time of creating jobs and creating employment.."* – Waste D

5.3.3 Resources and Capabilities

The resources and capabilities of the social enterprise was the third most cited category of the research question and was also validated by all three sectors. All Solar companies as well as one of the Water companies emphasised the importance of technical capabilities in their firms, highlighting the necessity of technical capabilities to be able to run their business:

"*this business has a very strong technology component; we would often describe ourselves as a technology company."* – Solar B

"*we have a resource of 12 different engineers, electrical engineers, mechanical engineers, chemical engineers, we work together when we're building. So, we are increasing that knowledge base."* – Water E

An emphasis on technical capabilities enabled a few companies to build their intellectual property throughout the company's lifetime:

"*I would say that the biggest value or the biggest asset that I can actually bring to the party constantly is the expertise or the experience of it of what I've done before. And like I said, it's not just about the team cleaning of the water systems we need to put in place and, and love to see technology change as well. So, keep updated with everybody about what everybody else is doing and fixing some people's problems because in our game there are plenty of fly-by-night companies."* – Water C

"*the director that started the business 32 years ago, he's still in our business... we've got a lot of intellectual property that's been built up over a vast number of years"* – Water E

However, these skillsets are not limited to technical capabilities and are often much more complex in nature as even technicians need to be able to cope with complex social settings as highlighted by one of the Waste Management Company respondents:

"*And we will say landfill site managers are such difficult people to find, because you expect this poor person to manage people operate and emphasize as a technical understanding, deal with the communities deal with the authorities. So, it's a complex skill set that we have."* – Waste A

Three Water Engineering companies emphasised that their skillsets enable them to drive economic localisation to be able to manufacture products that fit the local environmental context:

"*I think we could import Chinese sewage plants probably cheaper than we can make them locally, but they're not designed for our conditions. And Why should we do that? We need to grow an economy, we need to employ workforce, we need to keep it in house… it's very easy to import products. You know, importing is easy, but innovating locally, under local conditions. And we also have localised because we understand different challenges."* – Water A

One of the key capabilities of two Solar and three other Water companies was the ability to capture data on their operational model. These big data and analytic capabilities enabled them to gain insights into stakeholder needs, to quantify the volume and scope of their operations, and determine how it impacts communities, as well as how to become more efficient:

"*So, if you walk around here, you'll see this, you know, a lot of strong data driven… if we understand where those stakeholders are at, it allows you to not only react but pre-empt any issue… that single view of our entire business allows us to do very sophisticated reporting."* – Solar B

"*I think your database that you've build up over a number of years. You recognize waste streams that you collect on a daily basis… we're a very statistic orientated business and industry."* – Waste E

However, the majority of respondents cited access to capital as a constraint for their business because of the high capital costs of Solar, Waste and Water solutions and lack of funding opportunities for such solutions both from private and public institutions:

"*one of the weak points in the sector and also the projects associated with it is the funds at the end of the day, the funding of the project. That's one of the weaknesses."* – Water B

"*we never, ever could get access to one. Not even a single funding opportunity."* – Water E

Access to funding for projects from government was specifically listed as a severe constraint by one of the Water companies that tried to establish water and wastewater management solutions for communities:

> "*because it was like an entrepreneurial venture you know, we started with our own capital."* – Water E

For the abovementioned reason, five companies in the various sectors used "bootstrapping" to start and fund their ventures:

> "*Listen, we've put many proposals on the table to water affairs and to municipalities, you go out and you have solutions for the problems of the day, but they said they welcome your company, but they don't have money."* – Water B

5.3.3.1 Innovation

One of the subcategories that featured very prominently in the resources and capabilities category was the necessity and ability to innovate and was validated by all three sample groups. The most prominent code group was the need for alternative solutions to difficult problems and has been cited by six respondents. The latter is primarily driven by the general lack of innovation and insight of the respective sectors as Solar D, a fairly young and innovative company explains:

> "*A big problem in the industry is because people refuse or are scared to change… Let me tell you, there's nobody that innovates you can write that down… the competition doesn't understand what I'm trying to do. The engineers are very set in their ways and arrogant. And they don't want to change. They disregard everything that I have to say… and they said it was impossible to build the exact system that I wanted, but it's working perfectly. And I was told that can't work. It's impossible."* – Solar D

These frustrations often force social entrepreneurs to think and develop differentiated alternatives to the current solutions in the market, such as Solar B, a company that developed a successful alternative solution for providing capital and funding for renewable energy projects:

> "*That is, outside of the normal financial services realm… So, what we actually started with sort of, on a blank whiteboard, we said, how do we offer something different?"* – Solar B

and Waste C, who are developing an innovative alternative for organic waste and dirty plastics:

> "*I would say in the last 15 years, 20 years everyone is aware of the normal generic recyclables so that your normal box and your plastics. But the challenge, and the*

adventure actually way we act at the moment is finding alternative for food products. Finding alternatives for dirty plastics." – Waste C

and Water E, that have developed world class solutions:

"*We developed the first in the world Line production system for mobile water purification, the first in the world is here, The first one the first in the world Line production system for mobile water purification,"* – Water E

But, the solutions must be suitable for local business environment conditions:

"*We have a very unique product. And it's been developed over many years. And it's been designed for African conditions for Africa, because it's been designed for African condition. So, it's, it's hardy, it's simple. It's for your level, users, no chemicals and such."* – Water A

Some emphasised the need for self-sustainable solutions that do not depend on legacy infrastructures:

"…*but, in the long run, you will find that with a product that we're processing sewage; what you call the closed loop water system, where you have full control of your own water."* – Water B

It is important to take note of some of the antecedents of innovation for social entrepreneurs and network collaboration to solve complex problems that was cited by four respondents:

"*You need to be open with sharing with other stakeholders, listening to them, creating a trusted relationship, to enable you to be innovative."* – Solar D

"*We talk about collaboration, and innovation is really collaborating with as many of us stakeholders as much as customers, but communities, legislators, and then many suppliers that we have that ensure that we comply to legislation and talk about innovation."* – Waste A

"*The network, you know what, in and around our area you always have your, your normal clients I've got a, they've got a landfill site and they know they're going to have the volumes coming through to the landfill site, they're the only one in a certain area, but the more you talk about the industry, the more people trying to find ideas and net network gives you an opportunity to come across people that might give you an idea or a solution. And that's why the right relationships are so important, very important."* – Waste C

This need for collaborating and sharing knowledge and information posits the question into how companies protect their intellectual information, but Solar D provided some insight on this matter:

> "*We aren't scared at our little bit of IP. And let me tell you one thing, if your company is that one sentence secret, and you don't have much of a company, the company is based on its ability to keep redefining itself and innovating."* – Solar D

It is therefore very important to continuously innovate and employ hypothesis testing. This was validated by all three sectors:

> "*You need a creative system, because something that was decided on in 2016 is now the wrong, I can guarantee you the wrong technology."* – Solar D

> "*So being curious, being innovative, solving problems, you have to be innovative to solve problems not just taking things at face value."* – Waste D

> "*the challenges we face, brings opportunities. So, we put if one thing doesn't work. We've got many other things to do… and adaptability, getting the people so fired up, they what they are thinking out of the box and we distinguish ourselves from the rest of the market… the vision of empowering people to do not to stop at any, any barriers or challenges or whatever creates businesses, and it grows, and also to achieve that impact."* – Water E

5.3.3.2 Human Resource Strategy

In the analysis of resources and capabilities of social enterprises, the Human Resource Strategy of the organisations became a dominant theme and the importance of such a strategy was validated by all three sample groups. Training and development was the most frequently cited code group in this subcategory and was validated by eight respondents:

> "*It talks to a lack of education in terms of this industry in the space and that's why send workers to training sessions. We did train on Saturday."* – Solar A

> "*I think in any business, the biggest asset that you have is people. So, we've got very good experience in the business,"* – Waste E

> "*One of our big challenges is that and obviously skills, but we do have a lot of skills transfer, we have a substantial workforce, and we do a lot of training and we do empower, we do a lot of empowerment,"* – Water A

> "*We cut their hair we will put dentures in their mouths, I'm serious, and we dress him properly. And then we give them a mentor, and say, this guy is going to mentor you,*

you have to make him feel like a king, because that is the way that he's going to share information with you. You know, that works like a charm. Some of those guys are better today than their mentors. And the benefits that delay derived from net is that they grow in stature. And together with it, their renumeration… it's a behavioural change, Yes, we underestimate the influence that something simple can make to an entire generation of a specific person." – Water E

However, it is important to ensure a good culture fit of the employees which expressed by four respondents:

"*A set of values that kind of show me what makes us different from our competitors, because if you put there will be seen as we kind of employ a lot of people with a similar set of values. Because that's at the end of the day, what makes it tick, if you bring in somebody that conflicts and operates out, it won't last long."* – Waste A

"Because we, we wouldn't be able to do it without them. We manage them is through developing that culture of ownership. And, you know, with the, with the view for them to become the best that they can ever be you know the authors of their own future." – Waste E

Respondent Solar D also explained the value of hiring external capacity and the sharing of knowledge in your network:

"*and the willingness to bring all those people in, I mean, if you look in the market, it's always to hire your own internal capacity, don't talk to anyone don't work with anyone, whatever little secrets we have is our little secrets. And I happily share this with so many different people. Because It's the moment I do one installation, everyone's going to know this already…So I went to a number of different places and chatted to them, made sure I could bring the best people together. And so, what makes us unique is the fact that we're not afraid to work with other people."* – Solar D

5.3.4 Summary of the findings of Research Question 1

This summary provides a high-level overview of the various constructs within the social enterprise theme that were validated by all three sectors. The rules and logic of the social entrepreneurship business model designs are predominantly dependent on the ontological worldviews of the social entrepreneur. All the respondents self-identified as social entrepreneurs and are thus motivated by their ambitions to create impact at scale. These motivations and ambitions are driven by their own norms and values. The metacognitive process of social entrepreneurs enables them to find alignment between these different individual contexts. This is manifested in the organisation by the mission and vision of the

organisation which emphasises the need for sustainable impact and economically viable solutions to complex problems.

The organisational structure and processes of the social enterprise is also a very dominant category within the theme. Most importantly, the business model design process is based on a network design that involved most stakeholders of the organisation, but it is also designed from the perspective of an ethically and sustainable design that often has a strong focus on the corporate governance mechanisms of the business model. This informs the strategy of the organisation and social entrepreneurs aim to achieve alignment between the structures and processes of the social enterprise and the rules and logic of the organisation.

Furthermore, the access to capital and technical skills seems to be a core competency of social enterprises as it enables them to achieve their goals. This is supported by a human resource strategy with a focus on training and development. A strong emphasis on innovation was observed in the data which enables the social enterprise to adapt to changing environments by creating alternative solutions through network collaboration.

5.4 Results: Research Question 2

How does the business model of the organisation create network value?

This research question aims to understand how the business model is designed from the perspective of creating value for the network of stakeholders that are connected to the firm. Although the literature review in Chapter 2 highlights the importance of stakeholders as it relates to having a more holistic view of the interconnectedness of social enterprises, it is not clear how this relationship with stakeholders manifests itself. This section therefore reports on the findings as they relate to this theoretical context to aid the subsequent discussion of these findings and the results from the code analysis provides an overview of the most frequently cited categories and codes (Table VII).

Table VII - Value Network Theme: Categories and Codes

Theme: Value Network				
Rank [AVF]	**Categories and Subcategories (S)**	**Codes**	**Validated**	**Code Frequency**
1 [28]	Network Interface and Stakeholder Management	Stakeholder Relationship Network	Yes	11
		Network of Trust	Yes	7
		Formal Engagements	Yes	6
		Communication Mechanisms	Yes	4
		Contracting		3
		Relationship Broker		2

		Hope and Faith		2
2 [24]	Value Creation	Design Thinking and Customer-centricity	Yes	11
		Social Value	Yes	7
		Stakeholder Value	Yes	6
3 [19]	Value Capturing	Brand Equity	Yes	8
		Economic Gains	Yes	7
		Social Equity	Yes	4
4 [8]	Adaptation	Business Model Evolution	Yes	8
		Business Model Redesign and Adaptation		6
5	Product Value (S)	Reliable and Sustainable		6
		Value for Money		5
		Modular and Scalable		3
		Simple and Understandable		2
6	Service Value (S)	Valuable Customer Engagements		5
		Trust Relationship and Low Risk		5
		After-sales Support		3
7	Value Delivery	Distribution Channel		3
		Pull Model		3

- **Code Frequency:** *Sorted number of respondents in which the code is cited.*
- **Validated:** *The code was cited in all three sample groups (solar, water and waste).*
- **[AVF]:** *Aggregated Validated Frequencies; the total number of validated frequency counts per category which is used to rank the validated importance of the categories.*

5.4.1 Network Interface and Stakeholder Management

The context of how the social enterprise interfaces or manages its stakeholder network featured very prominently in the data. The categorical elements of the social enterprise network interface were not only validated by all three sectors, but it was also the most cited category in the value network theme with 11 respondents underscoring this phenomenon. All the respondents who were interviewed identified the importance of network interfacing and the stakeholder relationship management process and the social enterprise network was the most dominant code group of this category. The respondents highlighted the building of trustworthy relationship to enhance network awareness:

> "*So, in terms of the evolving nature of your business model, you're actually putting mechanisms in place to strengthen that relationship with stakeholders and we were previously, it was almost as a required basis, where it's now much more formal is regular meetings, regular interactions… all that happened over time, is the dimension*

has deepened up and, and, and the number of stakeholders that we have to touch and engage with to make this happen is just, you know, burst out of it seems… when we look at a stakeholder, we try to engage with that stakeholder holistically… It gets exhausting, But It's okay, because you're repeating the same issues all time then you don't have to worry about your messaging. Because, you know, if I'm just telling a story, I can say that again tomorrow will be the same" – Waste A

"*So that it's, I wouldn't call it a friendly, but it's a relationship with mutually beneficial in one way, where we all sit and converse around the table freely to me, and everyone feels that they put has been valued and nobody feels cheated."* – Solar D

Waste E even incorporated active stakeholder management mechanisms into their management processes:

"*And so they all get allocated a customer or list of customers, which they need to interact, not just to do what the customer wants them to do, but to interact to a point where we can give them advice, show them how to do stuff better, what we could maybe divert. And then also we've got nine branches and all those branch managers also one of the one of the KPIs is actually to manage those relationships."* – Waste E

This enables most companies to gain deeper insights into their value network:

"*So, you needed a deep understanding of the costs and benefits for each stakeholder in the business model... actually designing the business model to enable better communication and insight or data insights into the relationship action with your stakeholders."* – Waste E

The need to create a network in which there is a strong trust relationship between stakeholders was the second most referred to statement in this category with seven respondents who validated the value of having a network of trust as part of the business model:

"*so, there's actually a critical component, when you design your business model is to say that we need to build a trust network within this model from the get-go, this is extremely important... And I think it's, it's one of the trickiest things for start-ups, particularly in this type of a space, you know, when you, you're asking someone to sign up for software as a service, and you give them a one-month free trial, there's no risk for them. Whereas when you're asking someone, look, we need to put money and it has to have 20 years, and it has to have a strong inherent trust component. Okay,"* – Solar B

> "*It's really important that I can trust someone say, Okay, give you my word, sometimes not even necessary to sign a piece of paper. But I mean, to say, it's very important that you can trust someone,"* – Water B

From the perspective of creating a consistent mental model of the social enterprise, the following was said:

> "*That's why you having the weather you having it with the community where you're having it with the authorities within you having it with the customer is a consistent messaging and also with communities realizing that our staff are part of this community"* – Waste A

This strategy not only moderates the risk in the network, but also facilitates learning:

> "*it takes a lot of courage to do this. So, it talks also about your culture in that in the company, not only their entrepreneurial spirit, but also creating a safe environment for your staff to be able to say Listen, don't worry, we're going to have the courage to try new things."* – Water E

Furthermore, several companies stressed the importance of having formal engagements with stakeholders to strengthen the network. Six respondents validated this view:

> "*You also have very formal agreements. Yeah, we also have a relationship with council members in regard to future planning and rollouts of recycle projects because what is in vision for the future is that guys like us will be designated areas and we will then just operate in that specific area. So, there is a collective planning component."* – Water B

The formal engagements of Waste A are even organised in the form of a Community Forum:

> "*We now have a, you know, a manager responsible for the portfolio. We have community liaison offices at our facilities, we have community forums, at our facilities, we've got monitoring facility, or, you know, monitoring communities at our facilities. And via these forums, we've had community empowerment, we have training happening with job creation through that CSR projects, all of them happening through those formulised, structures that we've set up now."* – Water B

The format and frequency of stakeholder engagements are therefore diverse and iterative as highlighted by Waste D and Water B:

> "*Surveys, communication, newsletter, use the emails, telephone calls, keeping giving them absolutely beautiful service."* – Waste D

> "*Make appointments and go see them. Basically, that's what it is just basically, you know, get in touch with them, contact with them stay in communication, frequent communication."* – Water B

Some relationships with important stakeholders have however been formalised by means of contracting:

> "*You know, I always try and formalise it as much as I could. Okay, so I try to have the most corporate contract I can in place, even if it's companies that are both controlling, they've got a very onerous contract between one another, okay, because if I get hit by a bus, and they decide to replace me with two people, within they have to have rules set up. The investors need to know what happens."* – Solar D

> "*I don't think trust is enough. Because with all the corruption going on, I mean, to say you need to get something on paper, even if it's on paper, or whatever it is, you know, where at the end of the day, you know, what's the outcome going to be? So, it's important to formalize the relationship."* – Water B

Formal relationships also improve the sustainability of the relationship and the network:

> "*As stated earlier, unless it's a good deal for them, we're not interested. Because if it's not a good deal for them, they're either not going to do it, or they're going to leave it after a year, or whatever it is, or they won't be able to meet it because it's not sustainable. structuring the deal that's actually there to last."* – Solar B

Two respondents used relationship brokers as an intermediary to facilitate difficult links or stakeholder relationships that will create new opportunities:

> "*Absolutely in order to create value, you need to create a network, sometimes you need relationship brokers that can broker relationships with difficult links to open doors that would not normally open."* – Water A

> "*In Limpopo, we have activated the chiefs, and thereby 6 000 households by speaking to the community, I couldn't do that... To keep involved and to keep the relationship going and to have the support, they support me, and I support them. So, it's a two-way street, as far as, you know, just emotional support at this point. It's emotional support. mutually beneficial, yes. Okay. I love it when the Chief says, don't worry, don't worry, this is going to work"* – Water D

This network of trust increases the levels of hope and faith of some respondents:

"*You know being an entrepreneur, you venture into the unknown territories, Whether to believe firmly in your God given capabilities, you know, believing in the people that support you, But Most of all, trusting God, to take us through that process because you know, that something that comes out of your heart."* – Water E

5.4.2 Value Creation

The second most cited category in the value network theme was the importance of value creation. Design-thinking and customer-centricity was the most cited code group in this category and was also validated by all three sectors by 11 respondents. Design-thinking or customer-centricity mostly focuses on the unique needs of stakeholders and customers within the value network and can sometimes even reinforce the financial model of the firm:

"*On the customer side, with a lot of the business it was actually more about them and their needs. So, if a customer said, Oh, we need this, and we need that. So, can we do it? Does it make sense to do it? Yes, we can, let's do it."* – Waste D

"*I'm very customer focused this question a good strength to have I would say that's one of our biggest strengths... the best thing for me is, obviously, listen to what the customers' needs are…use a customer-centric approach to see how you can create more value in terms of recycling, and that will automatically give you the financial needs."* – Waste D

Solar B did some market research on the specific nuances of financial market preferences with impact investing as they relate to social enterprises, illustrating that by merely doing "social good" is not sufficient for a sustainable enterprise:

"*When we ran a lot of our market research, people are interested in doing good, but not It means sacrificing returns... So, for example, it is, you know, option one with 10%. Option two is 10% that's doing good. They're interested in the one that's doing good... As soon as it becomes 10% versus 8%, arbitrary numbers, they're less interested in doing good."* – Solar B

This poses the question of how much society values address market failures, which was the second most cited code group in the value creation category with seven respondents validating this notion across all three sectors. The mechanisms of creating social value however varied throughout the sample group:

"*50% of my, my staff, or might sound strange, but there are unemployable. The ladies that are doing the sorting. There's not one South African Mozambicans Zimbabwe. Malawians and they cannot you know do domestic work; they just don't have that skill*

set. And I found them pushing trolleys. So, I said right, the easiest way to get them a job is to instead of them going scrounging and different Bin's let's bring it to one place." – Water B

"*…the bigger picture, there are three basic needs: food, water and clothing and somewhere to stay. A couple of basic needs of human beings. Okay. And we can, we can provide each and every one of those aspects."* – Water E

"*So, I just like to make it more affordable to people in in all areas of South Africa to be able to afford solar. So, I keep our packages well priced and competitive."* – Solar A

However, the need to create not only social value, but value that transcends product value, aims to deliver value for as many stakeholders as possible by creating a valuable service:

"…*but we've tried to see, look, how do we grow the business? But, how do we also add value to the community?"* – Water A

"*We are service-focused instead of a product-focused. If we were solely reliant on the product, we would have been out of business."* – Waste B

This lead the analysis into the next two subcategories of value creation which are Product Value and Service Value.

5.4.2.1 Product Value

Product value has been construed to have a few prominent elements that were deemed important to respondents. Six respondents indicated that a product needs to be reliable and sustainable:

"*We have in water and wastewater treatment industry made major inroads. The products that you will see outside is of the highest quality in the world is equate to military standards… even the Germans have a respect for what we have achieved here "* – Water E

"We aspire to be the Rolex watch of the solar energy industry. We're not cheap. Because we don't want to go back and fix our systems" – Solar E

"*We are differentiated more in terms of a trustful relationship with our clients given products they can actually believe in"* – Solar B

Furthermore, the product value is also more than just about quality, it is about value for money and affordability and was highlighted by five respondents:

"*Suddenly, because the people are squandering so much these massively valuable cash flows annuities to Eskom. So instead of just giving them a very valuable assets, the aim is also to give them value for the money... Honestly, I want to give people the best value for their money."* – Solar D

"*Because the material that we use is a very durable quality product and not really that expensive. So, it is affordable."* – Water B

Two respondents emphasised the need for products to be modular and scalable, which enables them to provide a more affordable product:

"*Absolutely. It's scalable, it's the beauty of this model and it becomes affordable."* – Water A

"*We will start with a scale system and a larger inverter add panels as we go and build it up to a modular approach."* – Solar E

Solar B and Solar D stressed the importance of having a simple and understandable product offering to reduce confusion in the market:

"*It's product they can understand, it's product that does what it's supposed to. It's simple"* – Solar E

"*And the thing about our network it's simple, and it's the most critical thing,"* – Solar D

5.4.2.2 Service Value

Service value has been cited as a very important aspect of value creation. Six respondents expressed the value of having valuable customer engagements to create maximum value for the customer:

"*That is the service that I want to deliver, you know, basically a quality service in priority and then to create maximum value for end users."* – Solar D

"*We recently were awarded a huge onsite contract and If I look at what our team is done on that site, in a span of three months, It kind of really just shows you what our company's capability is to really go in and solve a customer's problem in terms of clean-up, in terms of alternatives for their waste stream, and really reducing costs for that customer and coming up with a sustainable solution.."* – Waste A

Furthermore, a number of respondents reasoned that excellent service reinforces the trust relationship between the company and their customers:

"*Because you're wanting to create loyalty. Because there are too many small companies around. So, if you do something well, and you do keep the communication lines open, people will value your service above anybody else's, even if you price it a little bit more."* – Waste D

"*But you know, when you when you get a customer and you want to, and they want to do business with you, and you use a service provider, you very much dependent on the service level of that service provider. So, it's controllable to a certain point. So, if they drop the service levels, your reputation goes with that. So, I would say that's probably our biggest weakness at this point in time."* – Waste E

It is very important for Solar A to give excellent after-sales support services:

"*Yes, we do our maintenance checks, because we do the 12 monthly maintenance plans for our clients. We always go to the house we check the system; we check the inverter we check that everything is running optimally, sometimes it's probably every three to six months. And you're just making sure that people understand what the system is doing."* – Solar A

5.4.3 Value Capturing

The process of value capturing was regarded as a highly important category with each code group being validated by all three sectors. Interestingly, all three sectors validated it, and eight respondents explained that brand equity was the most valuable construct of value capturing as their business activities have a strong influence on the reputation of their companies:

"*Although we are not actively marketing it, the word of mouth of your social impact initiatives feeds back into your business by creating a reputation that's desirable for the markets... my customers create customers for me."* – Solar A

"*They sign up to Waste B because of a conscious decision that yes, they are making an impact."* – Waste B

"*We would love to have the social responsibility tag put on to us"* – Water A

The second most important code group for the value capturing category was the necessity of capturing economic gains and was cited by seven respondents who gave some interesting insights. The Waste Management sector especially were quick to explain that their sector has razor thin margins because of low commodity value, which necessitates higher sales volumes:

"*We've doubled and redoubled our business opportunities in the last two years. So, from a financial perspective, it's obviously, it's fantastic... So, financial is important, but I think it's not the be all and end all"* – Water A

"*Most are just in it for the money… you don't really want to offer a free service because I think that if people don't pay for something, they devalue the service."* – Waste D

"*So, you try, you try give the benefit to the customer while you are making margin and keeping your head afloat. But yes, the margins are quite slim… it's a volume game, and the margins being quite low, the idea here is to find ways of adding more value or adding more services"* – Waste E

However, as Waste D stated, economic gains are not the be all and end all; the importance of social equity was also stressed by a number of respondents, especially from the perspective of social engagements to create greater awareness as Water E explained:

"*It is through this interaction with people and in demonstrating and showing goodwill. You know, the things we are talking about is proof that the reason why we haven't gone out into the open market and you know, shouted out from the mountaintops; I mean, people come here and say why do we hear from you? because our name will go out because of people are having the Water E experience… we're going to make major inroads in in terms of our social slant."* – Water E

5.4.4 Adaptation

The value of the business model adapting to the dynamics of the value network was also validated by all three sectors. The evolution, adaptation and redesign process of the business model was cited by eight respondents:

"*The business model is evolving over time."* – Solar C;

"…o*ver time how our model has changed."* – Waste A

"We *started off as a skip business obviously evolved into a food waste management company."* – Waste C

"*It's being driven to opportunity to opportunity and learning... So, your business model needs to be adaptive."* – Waste C

These evolutions were sometimes as a result of hypothesis testing by the social entrepreneur as Water A explains:

"*It was developed the early years, you know, and I think he experimented and did a lot of research… it's taken us seven years to get this thing and we still making improvements as we go along"* – Waste C

"*The process of identifying that opportunity was actually more evolutionary in nature, it was a dynamic process"* – Waste A

However, there are also various ways in which the business models have evolved over time, from a change in scope, a change in funding model, operations, products, technology, service levels, contractors, the competitive landscape, corporate governance, etc.:

> "*I'm going to go back 20 years ago, it was just the landfilling company, If I look at what we are today, with differently really moved up the hierarchy"* – Waste A

> *"The interesting part was initially I didn't charge for collections. So, I didn't want this business to be a for-profit. Yes, I want to do make sure that I could do live from the income, but it was more of the social aspect. I went to help people recycle"* – Waste D

> "*When we initially conceived it, it was only solar out at that stage, the other products came later… and the National Credit Regulation changed and made the model non-feasible overnight."* – Solar B

> "*You can't be married to see certain technology, you can't be married to a very specific way of doing something, you have to be dynamic you have to understand and even if it means you're going to change your business model slightly or entirely."* – Solar D

> "*But then then we realised that another company's paying a higher price for only white products and only colour. So, we started separating those two. So now the sorting store has another element that earns money. It talks about a business model that's actually adapting and changing frequently and that's a core element of your business to be able to be sustainable."* – Waste B

> "*I've made all the mistakes with plumbers, who are notorious for not arriving on site on time."* – Solar E

5.4.5 Value Delivery

The least cited category of the value network theme was the distribution channel as only three respondents referred to this construct. However, similar to other categories, the value of having a trusting and supportive relationship with suppliers was emphasised:

> "*…because if you go for an XXX inverter, for example, it's a very good inverter as a brilliant inverter but there's no support in South Africa and with the Cape Town branch I had to help another solar company out because they didn't want to go through the whole mission, it was a mission for four months… I was working to deal with Germany to exchange an inverter and it took 4 months and had to pay 25,000 so I rather want to use products that have support in our country and supplies that with whom I have a good relationship."* – Solar A

"*Why must I do business with you and not with Joseph next door? And that is always a reason for them to do business with us. Because we are transparent, we do honest business and the fact that we've actually managed to secure these relationships and imbed ourselves in all supply chain partners."* – Waste E

Furthermore, the act of creating greater awareness also created a demand strategy for the companies:

"…*so through, creating greater awareness, you actually stimulating demand."* – Water C

"…*and I believe the ground up demand strategy is the way to go because it's not about the product, the buy-in of all the people that are going to use it… introducing the product, creating a demand strategy for the product."* – Water D

5.4.6 Summary of the findings of Research Question 2

This summary provides a high-level overview of the various constructs that were validated by all three sectors within the value network theme. As expected, a strong emphasis on network interface mechanisms and stakeholder management techniques emerged from the data. Most respondents focused on building a network of trust with stakeholders. This is predominantly achieved through a wide array of communication mechanisms that emphasises high frequency engagements with stakeholders. The most important links within the stakeholder network are managed by formal engagements to create a sustainable trust relationship.

This enables the social enterprise to be attuned to the needs within the network and was confirmed by a strong focus on design-thinking and customer-centric approaches that strengthen the value creation process of the organisation. The value creation process employed both product value and service value mechanisms although there is a special emphasis on quality and excellence which not only provide value for as many stakeholders as possible, but also provide value for society within their specific contexts.

However, the counterpart of value creation is the value capturing mechanisms of the organisation which interestingly focus a lot on brand equity and social equity, with economic gains also featuring prominently within this data set. The strong focus on a trusting stakeholder network as a business model design can be construed as an antecedent for adaptable and evolving business models as the changing environment from a stakeholder perspective necessitates a change or redesign of the organisation to ensure the sustainability of the organisation.

5.5 Results: Research Question 3

What is the role of stakeholders in the business model of the organisation?

Although it has been determined in Chapter 2 that stakeholders play an important role in the social entrepreneurship ecosystem, it is not clear which specific stakeholders are included in this context and what their roles are within the ecosystem. This section therefore reports on the findings as they relate to this theoretical context to aid the subsequent discussion of these findings and the results from the code analysis provides an overview of the most frequently cited categories and codes (Table VIII).

Table VIII - Stakeholders Theme: Categories and Codes

Theme: Stakeholders				
Rank [AVF]	**Categories and Subcategories (S)**	**Codes**	**Validated**	**Code Frequency**
1 [37]	The Role of Institutions	Private Sector	Yes	10
		Collective Responsibility	Yes	8
		Government	Yes	7
		Culture and Behaviours of Society	Yes	6
		Norms and Values		3
		Civil Society		1
		Legitimacy		1
2 [21]	Private Sector Relationships	Capital Providers	Yes	7
		Customers	Yes	5
		Competitors	Yes	5
		Suppliers	Yes	4
		Contractors		5
		Property Owners		1
		Subsidiaries		1
3 [6]	Legislation and Regulations (S)	Enforcement	Yes	6
		Barriers to Entry		7
		Risk Management		5
4 [4]	Public Sector Relationships	Local Government	Yes	4
		National Government		2
		Regulators		2
		Toxic Politics and Corruption		1
		Universities		1
5 [3]	Civil Society Relationships	Communities and Beneficiaries	Yes	3
		Community Leaders		1
• **Code Frequency:** *Sorted number of respondents in which the code is cited.*				

- **Validated:** *The code was cited in all three sample groups (solar, water and waste).*
- **[AVF]:** *Aggregated Validated Frequencies; the total number of validated frequency counts per category which is used to rank the validated importance of the categories.*

5.5.1 The Role of Institutions

The role of institutions was very prominently debated among respondents regarding the stakeholders' theme. This category had a few code groups that were validated by all three sectors. The most prominent code group in the stakeholder theme was the role of the private sector, with ten respondents commenting on its role within social entrepreneurship. The respondents very strongly highlighted the responsibility of the private sector to address social needs and market failure within the respective sectors of the power utility, water and sanitation, and waste management:

> "*That means that there is a bigger responsibility on the private sector to get on to board execute on to the model and provide solutions. Without a doubt this is a great space. For someone who understands sales and marketing, technical relationships and public relations. It's a great space."* – Solar E

> "*I think to open the doors for entrepreneurs to work in that space, They need to have a more public participation in that, and I think they need to get away from the "tenderpreneurship", I think what they're going to try and do is open up this opportunity to come in and solve the problem for government and not just rely on the government to try to fix it.."* – Water A

> "*What we continuously need to do now is to make sure our business model is offering the customer what the government is expecting from all of us."* – Waste A

However, for the private sector to solve for the lack of public services, necessitates a novel relationship with customers:

> "*When you are specifically looking for clients, you should actually build a long-term relationship because I'm their utility. And it needs to be a trusting relationship, and long-term. In other words, it's got to be one of cooperation."* – Solar E

Contrary to the dominant view of what constitutes the private sector, it seems as though from the perspective of the respondents, they construe the private sector as social entrepreneurs, and not necessarily the traditional corporate nature of the private sector as it is generally understood:

> "*it's also about big corporates that currently have the isolationist view of only making a profit at the expense of society, but it's should be trying to give back. But it's not the main focus now."* – Water E

However, the burden cannot be placed solely on the private sector and a shared vision with a collective responsibility should rather be sought, as eight respondents from all three sectors alluded to this point:

> "*I think the short answer to that question would be this is everybody's responsibility from everybody and also to business to industry, to municipalities, to even national government, it's everybody's responsibility."* – Waste E

> "*Because it about a very big picture. Okay, so there's a bigger picture, bigger vision, in terms of the environment, because if we all lose, we all die, as extreme as that might be, it's creating a shared vision between all your stakeholders in your network."* – Waste D

> "*I think the issue is, Eskom if you want to play this, so I think, for me, every institution, together and separate, has a responsibility… Because it's too big for any, you know, even a really large institution, cannot tackle it single-handedly."* – Solar B

Although there is a strong argument for collaboration and a collective responsibility, several respondents do not trust Government to provide public service, citing lack of funding and a lack of political will:

> "*Eskom is not seen as the driver for this economy seen as a toy to be played with."* – Solar E

> "*We'd like to take hands with government solving these problems. But I mean, they said, I don't think there's a political will at this stage of the game to participate. I don't think they are serious about solving problems."* – Water B

> "*from the start it's government, government institutions that are not looking after this, you know, government, municipalities that doesn't have enough money to keep maintaining the obligation of having to give people clean water,"* – Water C

Furthermore, the cultures and behaviours of society were also regarded as a barrier to sustainable change by the respondents and were validated by all three sectors as six of the respondents explained:

> "*The problem I saw was too many people using too much fossil fuel, pumping it into the stratosphere and the arrogance and hubris of the human being believing that our*

generation could destroy this unusual spaceship. We live on, that you could travel for 10 years at the speed of light, and not bump into anything quite like it... and the conclusion I came to that, to those to that narrative was no one cares. worldwide," – Solar E

"*I understand the role in terms of influencing but to some extent, it seems like they need to play a role in terms of creating a culture of less wastage. Because from what I've researched, it seems like there's also a culture of wastage. Because it informs the values of society and then from a waste perspective" –* Waste A

"I think the culture and water usage is not as it should be. I think there's a lot of wastefulness… I don't think there's a respect for water that we need in this country." – Water A

However, cultures and behaviours are found to be slow to change:

"Most people feel that they should not be paying for recycling they are comfortable paying for a municipal Waste because that's part of the culture" – Water A

One of the possible solutions would be to change the culture and behaviours of society by creating awareness:

"I find the majority of people have an out of sight, out of mind approach to waste and people don't see the landfills they don't see. You know, once they've used the product you know, bought the product, you know, the discard of the packaging, it's out of mind and they don't know what follows… yet slowly but surely somehow cultures are starting to change" – Waste B

"Learning about the environment. Yeah. And the fact that they have consequences, I think that's more of an issue that people don't realize that when I throw this out the window, this is a bad example there's a consequence. So, we need to bring the attention to that consequence, that can possibly change the behaviour and I find that repetitiveness, talking to them about the consequences of the actions it either changes the behaviour, or we have to fight it. behaviour changes." – Waste D

The culture of society at community level is regulated by the norms and values of those communities, as two respondents explained:

"Each community has its own flavour and the norms and values it's a very dynamic and diverse environment" – Water D

"the norms and values of society have changed in such a way that it puts consumers or waste creators, if you wish, in a position where they feel that they have to recycle." – Waste D

In one instance, government has even lowered its regulations to norms and standards in practice, thereby decreasing the barriers to entry for new market players:

"What the Government went and did is they now changed the playing field and said, for a bailing, sorting, grinding and recycling facility similar to this, you actually don't need a waste management license. That's a 27-page document with a lot of stuff that you have to comply with. But what they did put in place is is what they call the norms and standards… So, what they're saying is if you are going to do this type of business, and you comply with this stuff in the norms and standards which is very much environmentally driven… So, what they've done is they've now said that's the new norm. So, a lot of the guys that wasn't compliant before, and us having to pay that high cost of compliance. Now all of a sudden, all of them become compliant." – Waste D

This lead the analysis into the discussion about the role of regulations and institutions.

5.5.1.1 Legislation and Regulations

As a subcategory of the role of institutions, the role of legislation and regulation was a very dominant theme in the data and has been validated by all three sectors. Six respondents explained the process of enforcement which is often applied inconsistently within this context:

"I think what's unfortunate, is that there is still inconsistent application of the law in the country… for us, we always say, compliance, It's important for it to be enforced, because then it's going to be the only way that you can increase the standard is to ensure that there is compliance, But at the moment there is the most inconsistent application between private and government." – Waste A

"The non-compliant guys, I think, to an extent, it is difficult to police, difficult to control, difficult to really do anything about it… but then we also had a challenge with special directives from the government, When you have a government contract, you have to comply with it." – Waste E

The effect of legislation and regulation on the barriers to entry for competitors was the second most cited statement within this subcategory, with seven respondents expressing various diverging aspects of this phenomenon:

"The legislation makes it tough for anybody just to come into the industry and provide a service correctly. And it's tough for that guy to survive." – Waste C

"I think industry has been bombarded with legislation in this country, from taxes to they have to comply to everything, and everything obviously costs money." – Waste E

Solar D stressed that regulation is often ill adapted to the changing nature of the industry:

"So really regulatory, it's far behind the emergent technology." – Solar D

Furthermore, some of the regulations are grossly unnecessary and unaware of industry dynamics, placing a barrier on innovation:

"Well no, I'm not convinced innovation does require more regulation. I think, again, this is sort of goes back to the way we run the broader business, you know, a couple years ago, the TCF, you know, treating customers fairly. Okay. And we literally sat around, you know, looking at this, we cannot believe we operate in an industry where this had to become legislation. You know, so when, you know, the regulator asked us what your plan is to comply with TCF, is it to write down what we're doing?" – Solar B

"Because we think the big Metros are going to change legislation that states that you are not allowed to mix your wet and your dry waste. Wet being your non-recyclable food. Those laws have already been written but they can't be implemented because you will crash the industry completely. There will just be mountains and mountains of recyclable waste, but nobody can do anything with it." – Waste B

However, Waste A regards the value of legislation and regulation as a mechanism to increase trust and lower risk within the network:

"You give it to us, Okay, we'll take care of it are environmentally responsible manner, and we are Known for complying to the industry. So, as a customer, given your waste to us, you may have to one, although in ways going to end up, you know, we're going to do the right thing." – Waste A

5.5.2 Private Sector Relationships

Of all the various relationship with institutional stakeholders, private sector relationships was the most dominant category and has been validated by all three sectors. Of these private sector relationships, the relationship with capital providers was the most prevalent with seven respondents citing capital provider relationships focusing on the need for funding company growth and innovation:

"There's a missing piece in your network and that's the capital needed to grow… we want to unlock the very closed funding system, be it from government, Be it from business." – Water D

"The bank doesn't want to borrow money if you don't have collateral… we are getting funding from the European Union, 40 000 Euros or whatever, are waiting for five water treatment plants to Africa, Recycling in Africa, we are? part of it is as well." – Water E

"Because the financiers are the ones who can fund these things, but they play it safe… to get it to the point where I had a previous employer back me and say, Listen, you have some cash to prove that it works." – Solar D

The second most prominent code group with the private sector category was the relationship with customers and was also validated by all three sectors. Five respondents explained the value of having sustainable relationships with customers:

"I receive through my publicity engines 10 to 15 inquiries per day… number one, they dislike Eskom in terms of they feel the leadership there is corrupt and they disliked the fact that they are being held to economic ransom… but will we get along over the next 20 years? So, we don't choose projects based on the profit margin, but projects based on can the clients and I get along for the duration of the project lifecycle. Everyone is saying that the relationship with the prospect needs to be actually sustainable. At such an approach we would have a different country, it's one of gratitude, we should be grateful" – Solar E

"The biggest stakeholders of our business are definitely, that's definitely your clients, they manipulate where you're going to go up in the next 10 years" – Waste C

"we've had customers for also like 30 years, some of our first customers that we signed back then are still customers of ours." – Waste E

Four respondents stated that formal and frequent communication with this stakeholder group was an important process:

"I had over 200 000 conversations with homeowners and business owners" – Solar E

"We communicate mostly via email and we send and updates to our customers in terms of that. It's a lot of it's a lot of telephone interaction." – Waste E

"But, when it's a bigger client will obviously sit around the table negotiate rates obviously, we negotiate for increases actually on a yearly basis as well, that's been done around the table." – Waste C

Five respondents validated the nature of relationships with competitors, especially from a compliance perspective:

"So again, we've got the low margins that you have to deal with, you've got a legacy of the way that you've been dealing and the way that your business has been set up that now have costing it, you've got another guy that was non-compliant all of a sudden compete with you face to face, yet his cost structure is a lot lower." – Waste E

"I mean, it's a very awkward or difficult situation. Because, they are constantly our competition or saying to customers that they don't need to comply to the regulatory requirements. But I mean, these are captured in the electricity regulation. So, there's an act... there are people misusing the situation" – Solar C

Supportive relationships with suppliers that understand the social entrepreneurship model were validated by all three sectors with four respondents citing this as important for their business model:

"We've engaged with, with overseas suppliers, a couple of times, and they were going to manufacture the stuff, but then they started with the tactics of, you know, maximising the profit… we actually went overseas just to go see what has transpired, they you know, we spent three to four weeks, and then they come back with knowledge and we try our own thing." – Water E

"What we've also done in that context, is we've developed relationships with a group of service providers that support us in terms of our business model. So, we've got, you know, for instance, a toxicologist and a quality specialist that, but we've developed relationships to really go and find people that support us in terms of what we do." – Waste A

Three respondents went further to highlight the importance of trustworthy third-party installers:

"You find that there is a big issue in terms of the business model that you rely on third party installers and they're not always reliable… a problem at the moment is that you cannot trust any Tom, Dick and Harry installer." – Solar A

"I think we're also in a good position where we have good relationships with our service providers." – Waste E

"I mean, for example, you know, instead of deploying an engineer to do designs, for example, to you know, we have got a reputable company that we contract with." – Solar C

5.5.3 Public Sector Relationships

The relationship between the social enterprise and the public sector was also discussed by many respondents and has been validated by all three sectors. It is however interesting to

note that, surprisingly, how little relevance to other topics in the public sector relationship category was found in the data. Local government relationships were the most cited code group within the category with four respondents explaining the nature of this relationship and how local government fails to deliver sustainable solutions:

> *"They find the municipalities to come up with solutions or to employ contractors and at the end of the day, the municipalities use that money for wages and other reasons then for what it was actually meant to for."* – Water B

> *"So yes, the city is now opening more material sorting facilities and yes, they are recycling. But they're not recycling enough. So, there would still be a gap."* – Waste D

> *"Because, I mean, if you take a township, for example, because it costs Eskom or the municipality in the region of R16- to R20,000 to establish a connection point, and that is per site, to get the power to the stand, and the users at those stands are buying the bare minimum, you know, the first power that is used is for free, and then they can charge after a certain usage."* – Solar C

Solar B expressed its view on the role of the national power utility:

> *"So, you know, it's easy to say, this is a national thing, and hence, it's a government problem. But frankly, for too narrow view… you can almost say, there's no way to get past the necessity of power. again, because Eskom is not a private enterprise, the ultimate need is for the country to have sufficient power to continue to grow"* – Solar B

Solar C however achieved success by innovating the regulatory framework through collaboration with regulators:

> *"We were one of the first official registrations that went through NERSA terms of registering a project, one of the first 16 projects, that was registered was our project, that was perfect, because we went through the whole registration process to get a registration certificate… we have been told by NERSA that we have helped to establish the process."* – Solar C

Although Water and Sanitation on the contrary was regarded a highly politicised sector by Water D:

> *"Sanitation is highly politicised, and I think that is a threat, as well as, as a strength, same time, you need to play it very nicely and stay out of the political scenarios."* – Water D

5.5.4 Civil Society Relationships

Surprisingly, the relationships with civil society was the least mentioned category in the stakeholder theme, even though the role of civil society has been validated by all three sectors. The most frequently cited code group was the relationship with communities and beneficiaries which was cited by three respondents:

> *"If I think of what community pressure can do, in terms of, you know, solving some of these problems, there are a couple of case studies... we are still quite involved with the community, we actually have quarterly meetings with the community leaders... we need to invest in the community, what's the best way to do it, we establish a little forum and our group very often is to get at different options, come back and say to us, listen, this is really something we believe in as a community or as a committee"* – Waste A

> *"I've got the community and they support the implementation plan and the product. And they support me as a friend which goes for a lot"* – Solar C

> *"And it teaches you if something changes or something goes wrong, you're not standing alone in terms of actually having a community so to speak… Collaboration with the community is a big deal because you're partnering with specific stakeholders that can strengthen your network. Yes, or I can strengthen theirs."* – Water D

5.5.5 Summary of the findings of Research Question 3

This summary provides a high-level overview of the various constructs that were validated by all three sectors within the stakeholder's theme. Apart from merely mentioning the various stakeholders, the data frequently reported the various roles of institutions in relation to solving complex problems such as market failures. Interestingly, although there were frequent referrals to the collective responsibility of society to tackle these issues, and although the cultures and behaviours of society was often critiqued, most social entrepreneurs emphasised the role of the private sector as an integral stakeholder which had an important responsibility to solve for market failure. This view was supported by the frequent references to private sector stakeholders such as capital providers, customers, competitors, and suppliers that play an important role within the business models of the social enterprise.

Notably, there were much less references to the role of government and the inclusion of public sector stakeholders within the business models of social entrepreneurs. However, there was a strong emphasis on the importance of legislation and regulations, and it was also heavily critiqued from a compliance enforcement perspective that had many adverse effects on the ecosystem.

One would expect to encounter more frequent references to civil society and relationships with communities and beneficiaries in the data, but civil society still plays a vital role in the stakeholder network and was validated by all three sectors.

5.6 Results: Research Question 4

How does the business model of the organisation create social impact?

According to the literature, it is very difficult to measure and understand the level of impact that is created by social entrepreneurs from the perspective of their social mission (Hlady-Rispal & Servantie, 2018). This research question therefore aims to report on how social entrepreneurs measure social impact and company performance. This section therefore presents the findings as they relate to this theoretical context to aid the subsequent discussion of these findings and the results from the code analysis provides an overview of the most frequently cited categories and codes (Table IX).

Table IX - Ecosystem Impact Theme: Categories and Codes

Theme: Ecosystem Impact				
Rank [AVF]	**Categories and Subcategories (S)**	**Codes**	**Validated**	**Code Frequency**
1 [28]	Measuring Impact and Company Performance	Change in Human Living Environment	Yes	8
		Financial Performance	Yes	7
		Customer Satisfaction	Yes	4
		Balanced Approach or Shared Vision	Yes	4
		Success Stories		6
		Emergent Change		3
		Alternative to Government Services		3
		Reducing Carbon Footprint		3
		Resilience		2
		Internationally Relevant		3
		Community Satisfaction		1
		Compliance Tracking		1
3 [23]	Sustainability (S)	Self-Reliance and Independence	Yes	8
		Of the Venture	Yes	8
		Of the Solution	Yes	7
		Of the Network and Industry		4

4 [21]	Scalability (S)	Social vs. Financial Tension	Yes	12
		Volume and Scope of Impact	Yes	9

- **Code Frequency:** *Sorted number of respondents in which the code is cited.*
- **Validated:** *The code was cited in all three sample groups (solar, water and waste).*
- **[AVF]:** *Aggregated Validated Frequencies; the total number of validated frequency counts per category which is used to rank the validated importance of the categories.*

5.6.1 Measuring Impact and Performance

The majority of the respondents spent significant time explaining how they measured social impact and company performance. Unsurprisingly, the most frequently cited code group within this category was the mission to change human living environments and was validated by all three sectors and eight respondents focusing on empowerment, human dignity, and also on providing sustainable services:

> *"The ambition is to create employment, use the opportunity to put value in back into people's lives, making them proud of what they do, extending them to the family and personal interest, ensuring there is some upliftment of who they are… So, you know, the kind of difference that it makes, to the specific person, his surroundings, his family, his children are unimaginable, we underestimated it."* – Water E

> *"I think there's no doubt that as a small company, as small as we are, we have a product that is quite unique and, you know, every single person goes to the loo virtually every day. So, it's never going to be a problem that's going to go away. So, we have to get involved in trying to get to a position we are making a marked difference. Okay. And I think there's so many poor communities and one of our other initiatives you're looking at squatter camps to put in treatment plants at the squatter camp on a monthly retainer. I think the human dignity aspect as soon as you go sit in the toilet that is in 40 degree heat you realize your dignity is not where it should be."* – Water A

> *"Now, when it comes to lifestyle impact, Since the system's been installed, we haven't had any more power failures. So, we haven't been able to, to see what tangible benefit it has to people's lifestyle when there's no power. But I'm imagining that it would significant."* – Solar D

However, there was also a significant focus on the financial performance of the organisations which has been validated by all three sectors. Seven of the respondents expressed the importance of this process and how they measure financial performance:

> *"We have a number of KPI's that we track, and we have the normal financial KPI's that we check and monitor, you would look at revenue gross margin."* – Waste A

"It's important to see, you know, if your sales growing or not." – Water B

"But we have managed to grow the company to be one of the major contenders. And in order for us to put us on the map, we actually, you know, been looking to have major contracts on our books." – Water E

Four respondents expressed the importance of measuring customer satisfaction and was validated by all three sectors:

"And secondly, performance, you know, with the, you know, relationship with your clients and suppliers." – Water B

"that keeping in touch with the customer, I think that's a big value and asset for us… an improvement of customer satisfaction, and I make sure that customers are always" – Water C

Four respondents from all three sectors expressed the view that there should be a balanced approach in solutions for market failure:

"The country cannot run exclusively on sola whether that means storage schemes or, you know, your continued called baseload, or whatever, when you talk about a balanced approach, it's correct in saying that change won't happen overnight in any case. So, it's actually an evolving and dynamic process, we are changing the energy mix of the country" – Solar B

"I think almost everyone, myself included, compromised on remuneration to be part of this and I fought a long and hard with suppliers and I believe that they are also taking a bit of a knock because they want to be part of this." – Solar D

Interestingly, six of the respondents had elaborate stories to tell when they were asked about how they measure success. The complicated nuances of success stories are therefore an interesting emerging phenomenon that relates to the measurement of success:

"The most satisfying thing is if you can, if you can come up with, with a solution that people had problems with for many times now many years you know, so, we started off, years ago, with a specific company we made coatings, for instance, and everybody used to before us, it had the contract before as he used to take that to a landfill site. Now anything 40% and above is actually classified as hazardous as material until proven otherwise it's even worse from August this year. And we were the first to find a solution where if we can separate or separate the packaging from the liquids. And I'm not talking about the machine that we've put in recently I'm talking about the offset. And we've actually found a registered plant, you can actually generate a product from

it. That is the most satisfying thing that if you can find it. And you know, we're not talking about five cooldrinks we are talking about hundreds of thousands of litres of hazardous waste and finding that alternative solution." – Waste C

"But it's the richness in the stories that are being told in terms of the impact you're making" – Water A

Regarding a few instances found in the data, such as for Water B, the solving of market failure is comparable to baking a cake in that one needs to create conditions for emergent change. Water E speaks about infecting society:

"The will from government is not there to make that impact, you've got everything. It's like baking a cake, you've got all the ingredients. It's just now to go into the oven but the oven is not hot enough… And then when the bread is in the oven, you can share it when it comes out of the oven, but it is not hot enough." – Water B

"Yes, and it must infect other people watching, and we want to infect the rest of industry, we want to infect the rest of the South African businesspeople… in order to propagate that and I use every opportunity to showcase what we have achieved through that; South Africa would be a much better place than it is." – Water E

As Water B stated, it seems as though government does not have the political to change. It was therefore not surprising to find that some of the respondents aimed to find alternative solutions for public services as a way of measuring impact:

"So, it's actually a substitute to bulk municipal water and wastewater treatment and it's more affordable as well." – Water B

"So, again, we're not we're not in the game of owning landfill space, because we believe that's the wrong focus there. Although there will always be a place for a landfill and the reality of it is that we're very far from zero waste to landfill in this country. So we've got a role to play, but we would rather play the role in diverting waste away from landfills." – Waste E

Three respondents measured impact by virtue of reducing the carbon footprint:

"And I decided that I was going to start planting trees. So that was my first choice, Co2 reduction by planting trees... So, I started planting but it was taking we're taking 70 years for 3.7 tons of Co2. So, the whole point was removal of Co2, to mitigate co2 was my goal. So, I looked at the Solar Geyser, R40,000 Solar Geyser, three hours to install, the minute is installed, it mitigates 3.7 tons of co2 forever." – Solar E

"We wanted a carbon emission diversion rate, in terms of environmental impact of us diverting waste from landfill or putting resources back into the manufacturing, versus taking virgin material." – Waste D

"…and to reduce the carbon footprint obviously… it brings down the fossil fuel usage, etc. and the carbon emission goes down." – Waste E

Interestingly, Waste A measured impact through community satisfaction and compliance metrics:

"we would then also track, for instance, on the community side will track complaints…complaints is nuisance wherever around the facilities, those get reported on weekly to leadership team... as part of our weekly communication we would say, the community monitoring committee meetings took place, every meeting with the community forums, issues flag… we've also got a weekly, what we call compliance indicators that we share with our management team" – Waste A

5.6.1.1 Sustainability

Within the measuring impact and company performance category, there was a very dominant theme of sustainability. The sustainability subcategory was validated by all three sectors and eight respondents sought solutions that would enable customers to become more self-sufficient and independent of government services:

"To certain extent, I think it was more of the fact that they took the initiative to do something to be self-sufficient." – Waste D

"it's going to become more and more relevant that people start looking after their own water requirements." – Water A

"Yes, that the community can do it for themselves, because that's job creation and skills transfer... and it makes it theirs like they take ownership of it being more involved. It's a psychological thing. It's more than physical. It's a psychological interaction mindset change. In the bigger scheme of the involvement… a community could actually not wait for government to do this thing that they can be looking after their own interested, find in themselves to actually do the next thing without waiting. Because it's killing people to wait and wait and wait and the thing is, it's still a choice of the individual." – Water D

"To become self-sustainable, because we're going to grow our economy, You know, in, you have to pay, you know, for the development of the economy in SA you know,

transfer, that zest and will, to show people that you have to push the barriers, you have to break barriers you have to push to become self-sustainable." – Water E

"A given example, it is undeniable that people's main motive as a psychologist, by training, not clinical. But as a social psychologist, and I've moved into sales pathologies, sales psychology, people are interested in themselves." – Solar E

Respondents were however preoccupied with the notion of creating a sustainable venture which was validated by all three sectors and eight respondents sought to create a sustainable business model:

"And I want people to choose me because they know that if they saw me in five years, I'm still going to be doing this." – Solar E

"So, my ideal scenario, everyone would be working for free, including myself, And, and the suppliers would donate the equipment to us for that is very unsustainable, and I think I can even get one solar panel on one roof. So, reality is that I need to be paid. I need the people around me need to make money." – Solar D

"Firstly, having a safety net in regard to the service fee, instead of relying solely on the product That helps us be sustainable." – Waste B

"Because of our long-term sustainable way of operating and running the business, we always say, unless it's a really good deal for of our partners, it's never going to last we're not interested... It needed to wash its face, it needed to be practical and needed to provide real value and a lot of that is driven by sustainability." – Solar B

However, respondents also frequently discussed the importance of having sustainable solutions or business models. This was validated by all three sectors and seven respondents expressed a wide array of elements that constitute sustainable solutions:

"Repeat businesses is a good indicator of not having a fad but actually having a sustainable solution… we realized we have to we have to grow. Because as you know, once you grow, you have to keep feeding the machine. We had to find the Market, where is the market to be able to grow sustainably. That's why we looked at areas that are not being looked at, such as squatter camps or rural villages." – Water A

"The more the more we grow our customer base, the more product we have, the more product we have more people we can employ. The more people we employed with the amount of product we have, the more product we have to sell to sustain the whole model." – Waste B

“So, we are working with the customer, and in some cases, the it's even to reduce on-site waste, what is produced and all ultimately that we have a sustainable solution, provide peace of mind. And I think that's really important. I think it's kind of over the years been our slogan and different ways, you know, providing environmental of peace of mind, what exactly does that mean is that you don't have to worry about to waste.” – Waste A

Waste C also stressed the fact that many competitors are non-compliant, thereby undermining the sustainability of their business model:

“So, to dump at a registered landfill is more way more expensive and it's a fortune to pay for Than down the road. And I think that's some problems that we have in the industry. you know, guys will easily do that. It's obviously that's not a sustainable solution though. So, those guys will survive a month or two, until they get caught out. So, you get a lot of those, but from us as a big company base to be to do the right thing. We need to firstly look at if we don't make a good business out of the waste. Then we don't have a business.” – Waste C

Lastly, four of the respondents cited the necessity of creating a sustainable network and to have a sustainable funding mechanism for the business model:

“You need to drive investment into that new sector for it to be viable and that's one of the problems we're trying to solve… to create value for everyone. Otherwise, it won't be sustainable” – Solar B

“The land value associated with that is, again, that current low cost of landfill space is going to it's going to exponentially grow exponentially. So, the more time you can give a landfill, the more economic benefit you give the consumer… also to insure embeddedness of the customer into your network” – Waste E

“They continued supporting the company. So that for me tells a story, The positive of a sustainable relationship.” – Waste A

“As an entrepreneur, you need to identify those individuals or companies where you can deliver value, but on a sustainable basis. So, it's more about sustainable relationships, as opposed to just making a quick buck. People say that, you know, like the smaller towns, you’re too small, to make enemies, to me even Joburg is too small. SA is too small to be a sketchy businessman.” – Solar D

5.6.1.2 Scalability

The issue of scalability was also a prominent subcategory with most of the respondents citing this as important. This was validated by all three sectors and 12 respondents gave some insights into the tension between social and financial aims and how it relates to scalability. Although four respondents thought that the social and financial aims of social enterprises are self-reinforcing, there were also a few other code groups within the scalability subcategory:

> *"At the end of the day, yes is it is you are running a business, you've got overheads easy enough to make money, but at the end of the day, if you're doing something right, you don't need to worry about the money… I would say the big thing is that it's an integrated set, it's part of the same thing. It's not separate, and it's mutually reinforcing… you've got to give a little to get another"* – Solar A

> *"in that, in that sense, yes, you can say we, we are lucky with the situation that actually because of our business model, and strategy, it's actually complementing each other."* – Solar C

> *"it is self-reinforcing I don't know where it comes from, as I say, it must be blessings from above."* – Water E

Interestingly, by sustainably managing the tension between social and financial aims, Solar B posits that it enables the organisation to scale the solution to complex problems:

> *"I think it's sort of the more modern outlook. So, the old school, if you will, way of charity, you know, food aid and donations and whatnot. They seem to be evolving to say, how do we create something far more sustainable? So, if we say we've got here that that genuine win-win? it's actually a new frontier in terms of how you approach complex problems, so to speak by doing it sustainably, you can do it on a much bigger scale"* – Solar B

It was interesting that Waste C sees innovation as a critical capability that enables the social enterprise to manage the tension between social and financial aims:

> *"To certain extent a bit naive to look at it from a snapshot-based view, where we say there's a tension between the social impact and the financial sustainability. It's more about the opportunity that lies in between in that complex space and confusing space where you need to be innovative, to create new solutions that enable you to have greater financial gain, and also make greater impact. And that enables you to become more sustainable"* – Waste C

"You need to manage the leavers, or your business model and it actually needs to adapt as the tension rises or decreases" – Waste D

Waste E also held the view that one will find it difficult to sustainably manage the tension between social and financial aims if there is a lack of trust in the stakeholder network:

"I just think the expectation from the consumer side, will there be tension if there was no trust, yes there would be if there was no method of bring that conversation across it would be because the expectation would be you must do everything for free to try to do everything for free to what I want to have a business and then I can't do the good other I won't make money and I can't do the good way now if I make enough money I can still do and I think that and again I think that's probably one of our other big strengths" – Waste E

This view was supported by Water D:

"You need some kind of safety net to be able to be in the position to manage this tension" – Water D

Furthermore, it seems as though an investment in the human resources of the social enterprise reinforces its ability to manage the tension between social and financial aims, as Waste B pointed out:

"I think the this the social good exceeds the economic gain at this stage… you're managing these tensions by basically reinvesting into your human capital" – Waste B

However, most respondents also highlighted the necessity of achieving impact through volume and scope. This has been validated by all three sectors and nine respondents make the case for creating impact at as big a scale as possible:

"I think it's sort of a weird one, because it is actually so spread. You know, so this is not that we've taken one entity and, you know, done so much with him is that you've taken so many entities and done a little. So, it's almost like the notion of, if you try to run a business, you can you can make a million Rand of one client, one Rand of million clients, we want the, the one small impact across thousands of clients." – Solar B

"And we can consistency supply, because we've managed our daily operations very effectively. And our geographical spread makes those bailing operators within themselves profitable because you don't have to drive 50 kilometres to a customer. Theoretically, we in a maximum of 30 kilometres service area that covers all areas in Gauteng. So that's been able to do to help us and that benefit then flows down to our

customers, because we've had a consistent offtake of the material our customers, or suppliers in this in this instance." – Waste E

"You know, something that we can quickly measure. We do that every single month year on year, last five years if you look at the amount of volumes that you've picked up, we obviously have all those records." – Waste C

"And you know, there's a lot of scope for growth and we can, the more the more customers we sign up, the more recyclable waste we collect, the more people we employ." – Waste C

"But everybody sees the potential said the scaling opportunity actually, because there's hundreds of thousands of sectional title complex in the country, there are millions of households because if you can scale then obviously you can actually solve the problem you can make an impact." – Solar D

5.6.2 Summary of the findings of Research Question 4

This summary provides a high-level overview of the various constructs that were validated by all three sectors within the theme of Ecosystem Impact. This research question aimed to lend some insight into the complex conundrum of measuring social impact and how the tension between the social mission and financial gains was managed by social entrepreneurs.

Unsurprisingly, the respondents most frequently referred to the change in human living environments as the most important outcome of social enterprises. The second most important driver of company performance was the financial gains of the organisation which brings it in balance with the mission of the organisation. Interestingly the measurement of customer satisfaction featured prominent within this category and a balanced approach or a shared vision between all shareholders was emphasised. It can be concluded that the data suggests that a strong trust relationship with the stakeholder network enables the social enterprise to qualitatively measure impact at the ecosystem level.

This view is supported by the emerging themes of sustainability and scalability within the data of this research question. Strong emphasis was given to the sustainability of the solutions, the venture, the industries, and the stakeholder network which enable the social enterprise to increase the scope and volume of value generation and capturing within the network. The latter is regarded as an important metric for measuring impact and performance.

It is interesting that most respondents did not encounter an unsurmountable tension between the social mission and the financial gains of the organisations and rather construed it as a self-reinforcing mechanism that can be managed. It appears the trust relationships of the

stakeholder network configuration enable the social enterprise to manage this tension and it could be concluded that these two constructs were not mutually exclusive.

5.7 Results: Research Question 5

How does the business model of the organisation adapt to complex ecosystems?

Chapter 2 of this research report concluded that the business models of social entrepreneurs could potentially be described as complex adaptive systems, although it is not clear how this proposition manifests itself within the context of the research population. This section therefore reports on the findings as they relate to this theoretical context to aid the subsequent discussion of these findings and the results from the code analysis provides an overview of the most frequently cited categories and codes (Table X).

Table X - Ecosystem Context Theme: Categories and Codes

Theme: Ecosystem Context				
Rank [AVF]	**Categories and Subcategories (S)**	**Codes**	**Validated**	**Code Frequency**
1 [28]	Opportunity Identification and Evaluation	Network Value	Yes	10
		Market Failure	Yes	9
		Social Need	Yes	8
		Economic Opportunities	Yes	7
		Market Awareness and Education	Yes	6
3 [23]	Sensing Mechanism	Complex Ecosystem	Yes	10
		Competitive Tolerance	Yes	9
		Attuned Leadership	Yes	8
		Learning Environment	Yes	6
		Feminine and Empathetic Approach		3
		Sense of Urgency		3
		Environmental Pressures		1
4 [21]	Adaptive Strategy	Business Model Flexibility	Yes	5
		Staying Informed	Yes	4
		Frequent Communication		3
		Training and Innovation		3
		Sustainable Agility		3
		Quick Decision-making		1

- **Code Frequency:** *Sorted number of respondents in which the code is cited.*
- **Validated:** *The code was cited in all three sample groups (solar, water and waste).*
- **[AVF]:** *Aggregated Validated Frequencies; the total number of validated frequency counts per category which is used to rank the validated importance of the categories.*

5.7.1 Opportunity Identification and Evaluation

In the Ecosystem Context Theme, the opportunity identification and evaluation category received the most references with all code groups within this category and was validated by all three sectors. The process of identifying opportunities within the network was the most dominant code group with ten respondents explaining how they evaluate opportunities within their stakeholder network. Water E for example sought an opportunity to create value for as many stakeholders within their network:

> *"We never give up people, even when the government contract people are dead set to nail government. We have a contract with the, with the government where we sit around the table because we have challenges because it was a 500 million project. But again, we couldn't handle it. And we went to sit around a table and said, we're going to make a difference here. We're going on a time / material contract, we will present you with our invoices for, for our suppliers in places, and you can we will then determine a margin on that, and our labour, time will be spend what we will present that to you, and we will ensure that, you know, we can do the job. We will be ensuring that you will pay us for that. And we are satisfied with a 12.31% margin on a major project of over 500 million. It is not, it is not, you know the most lucrative contract. But he has given us an opportunity to employ 150 people."* – Water E

Furthermore, two respondents highlighted the value of stakeholder relationships within the network which enables opportunity identification:

> *"It comes with a relationship. I believe in relationship building, first and foremost, because people buy from people, generally in terms of creating opportunities, it's much more about creating your network of relationships."* – Water D

> *"So good stakeholder relationship management, and communication is something your network values. And it creates a sustainable business"* – Waste D

Although at a more fundamental level, it is the market failures in the various sectors that create opportunities for social entrepreneurs. This has been validated by all three sectors with nine respondents emphasising this fact:

> *"It's actually it has become much more; it has become than a social economic issue. It's a fed-up issue… the problem is stupidity we are beyond problem solving"*– Solar E

> *"I think waste management in general is a problem… we're running out of land landfill space."* – Waste E

"I think water is becoming the new gold is no doubt that water is going to be the scariest thing on this planet... I think we already in trouble and I think our infrastructure for falling to pieces, and it's not being maintained… u*rbanization is a big problem. And the existing plans that we bought; many years ago, just can't handle that flow coming through. Yeah. So, they haven't expanded the plants and the maintenance on existing plants is probably not what it should be."* – Water A

"We have identified that there is a social issue of water access and water quality" – Water E

This lead the analysis to the needs of society as a signal for social entrepreneurial opportunities. The code group with the third highest frequency of references is social needs which is a result of market failure and presents an opportunity for social entrepreneurs. This has been validated by all three sectors and eight respondents have supported this fact. The solar industry specifically voiced a number of concerns relating to social needs that are a result of unreliable power utility services:

"Even a colleague of mine in the office, his family was tied up with this last unscheduled load shedding with whole bunch of alarms giving false positives and the batteries are flat and we're seeing a scenario where the alarm companies don't respond and cell phone towers are down so he wants you to call for help you can't. The criminals know when it's going to take place and they know when it's over. So, they know when it starts and stops. And there's no lights there's no security cameras or guards in these big complexes. Some of them are just refusing to walk around. It's like no Okay, that's a huge risk. The guard locks himself in his little room. He said his mates got killed because they were walking around." – Solar D

The social needs are not limited to the wealthy:

"People can't really afford backup power systems. And that's how, effectively the low end of the South African market is hit the hardest. Because the top end of the market, they can afford backup. This stops them from becoming successful entrepreneurs" – Solar C

However, the opportunity evaluation process is not limited to market failures and social needs, but it also extends to identifying economic opportunities as there are market segments that are often neglected. This view has been validated by all three sectors with seven respondents emphasising this fact:

"So, the problem with normal solar installations is, guys are aiming at commercial industrial, commercial and retail, everyone does industrial, commercial strip malls,

shopping centres, and so forth. The problem with that is that the use of electricity volumes, industry uses about 40% and residential use about 36%" – Solar D

"Yes, they were a lot of companies that were doing waste management, from recycling. But even now, there are very few businesses that are actually collecting recycling from your house. And that that service, there was a big gap in the market in regard to offering a service, a door to door service based on you place your recyclable waste on the roadside and somebody will come and collect" – Waste B

"Constant increases off the power of electricity prices, which I think it went up something like 300% in the last several years… The majority of the is crisis high rate for electricity, so, to help companies to save on the bottom line in terms of electricity costs" – Solar C

Although the process of identifying and evaluating opportunities is often a result of greater awareness in the ecosystem. This was validated by all three sectors as six respondents highlighted the importance of creating awareness through education and marketing:

"People are very unaware of their carbon footprint" – Solar D

"You educate people about what clean water is, clean water is not just drinking it is how to clean the water that people can realise, actually show them for instance, a sample of the water and measure and actually tell them what's inside the water… both government and the private sector has the responsibility of creating awareness, educating society about the necessity of clean water" – Water C

"Changing the culture, starting with education from a young age, so, there needs to be more education about waste" – Waste D

"Free marketing, because we are seeing every day on a daily basis you are seeing the impact of plastic especially plastic has on the environment. I mean, even this morning an article about micro plastic being found in ice sheets in Antarctica. So, even in the deep trenches in the ocean, they are finding fish that are contaminated with my micro plastics so it's a big issue." – Waste B

This lead the analysis into what sensing mechanisms social entrepreneurs use to become aware of the ecosystem context.

5.7.2 Sensing Mechanism

The sensing mechanism category was the second most cited category in the ecosystem context theme and has been validated by all three sectors. Most respondents gave insights into how they perceive their environment, leading into a narrative about complex ecosystems.

Ten of the respondents focused on this narrative and cited a wide array of elements that might constitute the emergence of a complex ecosystem. A summary (Table XI) has been formulated for this purpose:

Table XI - Complex Ecosystem Code group - Quotations

Code	**Quote**
Distressed Government	*"I think there is obviously skills is a huge skills loss, with all the changes that have happened and there are financial constraints. So, all the money that should have been earmarked to continue maintenance and expansion, because more and more people as you know, moving into the Central Business Districts."* – Water A
Dynamic Markets	*"But the recycling with the commodities is extremely volatile. So, one day the price will be R2 and the next week, the price will be R1,50 or in a years' time the price will be 50c."* – Waste D
Evolving Customer Needs	*"it talks to rapidly changing needs within your network from a customer perspective but also from a stakeholder perspective"* – Water E
Evolving Products	*"You know I used to trade shares for a living, and every single day was a different day. Waste industry is the same. You know every single day there's something else, and you walk into a client, you've never seen the product before though you've been in the industry for 14 or 15 years."* – Waste C
Evolving Technology	*"Every day, there's new technology, there's new things… it's evolving rapidly, Yes big time."* – Solar A
Interdependence	*"That sounds like a silly word to use. But you realize, because there is such independent interdependence between all of this."* – Waste A
Multi-layered	*"These days, a lot of there's a lot of layers of this industry"* – Waste E
Stakeholder Context	*"We try and look at it that that stakeholder wider than just the transaction"* – Waste A
Emergent Change	*"You don't have to be as you don't be a mathematician to understand that there was going to be at some point that as, as Malcolm Gladwell calls it a tipping point."* – Solar E
External Effects	*"The business environment in which you're operating is not only confusing, but it's frequently changing is frequently evolving. China, banning or imports of recycled product had a knock-on effect for all of us. It's still having an effect. That's an external effect, you cannot control any of that"* – Waste B

Interestingly, a high level of competitive tolerance was found in the data. This was validated by all three sectors and was the second most frequently cited code group with nine

respondents expressing this view, with two respondents emphasising a trust relationship with competitors:

> *"It's good to have that close relationships with also even with your competitors."* – Water C

> *"And I don't mind the competition. I need to remind myself of that, I've made more friends in the industry than enemies... I think of myself and a couple of other recycling companies that have worked together, and we were very, you know, in the get go very clear about, you know, okay, I'll pay you for this, and you do this. And we still friends now because we respected each other. And we can trust each other."* – Waste D

> *"In the solar industry I'm not threatened by anybody… To be quite honest. People think they're competing with me"* – Solar A

An attuned leadership is also a key component of social enterprises to be able to gain insight and awareness of the ecosystem and was validated by all three sectors. Eight respondents referred to this phenomenon:

> *"A critical component is to be attuned to the markets your clients, Basically all the stakeholders within your industry."* – Water A

> *"We always try to be you know, up to date with the latest technology that is available so that we can offer that to stakeholders, customers and clients with the best solution."* – Water B

> *"I needed quite a bit of research. But in research, when you don't know what you're looking at, and when you do know what you're looking at is completely two different things."* – Waste D

> *"You know, we got first-hand knowledge and experience of what Is actually going on."* – Solar C

This view was supported by the necessity of creating a broader learning environment from a social enterprise perspective. This has been validated by all three sectors with six respondents providing insight into what constitutes a learning environment:

> *"Everybody in the industry, no matter who it is, is always learning."* – Solar A

> *"From a business point of view, we we've got our monthly meetings to look at figures and departments, and everybody needs to get feedback, we put in, you know, targets we strive for certain things and then we appraise, finding solutions to certain problems*

within the business. Everybody needs to be back there so we constantly on top of it." – Waste C

"It was due to been kept informed about what's happening in the industry. So, for example, the talk of a talk at the moment is food waste, and organic waste, and textile our waste. So, if you want to be a jack of all trades, or waste management, you actually need to have your finger in a lot of different pies… but it's to the point that we're actually learning from it." – Waste D

"Every time I go on a course, I grew the business by 30%. Every time I did a course, or need something new in terms of mentorship, or seed funded project, I was able to do a 30% in the first eight years, I could do a 30% growth." – Waste D

Interestingly, within the context of being attuned and creating a learning environment for greater awareness in the ecosystem, three respondents alluded to the fact that females could be the at the core of competence from this perspective as they have a more empathetic approach to business which enables social enterprise and the network in general to have greater sensing capabilities:

"We're coming back to our customer base and if I look at my 2000 odd customers that I have, I would say 80% are women… I think they're more in tune with the future and I think a lot of them, you know, are starting a family, like concerned about their children and the environment and the world that we're going to leave behind... think if you start a family, you're concerned about safety. Security, education, but you also concerned about the environment you are living in the pollution in the river in the Air and the food. So, I think that's, that's the reason why I've got so many women as clients." – Waste B

"it seems it seems like in the industry there is a need, there's a need for a more empathetic approach." – Solar A

"We were quite a big company and a well-known brand that's driven and owned by lady it is a lady owned company. And I think that adds value, as well as a different dimension that we bring to the industry." – Waste C

Some respondents expressed a sense of urgency in solving for market failures which can be inferred as a heightened sensing ability which in turn informs this urgency as three respondents indicated:

"They say you got to go out there with guns blazing, basically, you know, and try and create a better environment to create impact to get the people to wake up and see

where we're at. I mean, to say we first were definitely on the edge of a big cliff look what it is, and we just need a little push to fall over." – Water B

"And through the willingness to fail and to do things for ourselves, to challenge people and say, there is no such thing as a can't do it. You know, we have to make this work is that you will, you will create more opportunities because of this." – Water B

This is sometimes as a result of the perceived viability of alternative solutions to market failure:

"So, all these alternatives that need a certain amount of volume for it to work. So, if you're already set with it, just make your decision quickly." – Water B

This lead the analysis into the perceived ability of social enterprises to not only sense their contextual environment, but also to adapt to the changing dynamics of complex ecosystems.

5.7.3 Adaptive Strategy

The ability of social enterprises to adapt to complex ecosystem is a very important capability and has been validated by all three sectors. Most importantly, the most frequent citations within this category was in the code group that explained the need for business model flexibility and was found in the data of five respondents that had various views on this construct:

"…because it talks about the frequent adaptability of the company to be able to be sustainable." – Waste B

"The other 50% of the business model is in terms of adapting to changing circumstances it may be environmental or legislative or regulations or whatever, or technology or customer needs." – Waste C

"So of course, you need to be adaptive... you have to be dynamic, you have to be willing to change. So, the one thing I say to everyone is I'm not married to technology, the only anything that I'm steadfast on is a solution." – Waste C

"We are working with a business model that can be duplicated, but also to be flexible enough that it adapts to the community that is involved." – Water D

The second most important adaptive capability was for the social enterprise to be informed and aware of changing technology, regulations, market needs, customer needs, competitors, and changes in the industry. This was validated by all three sectors and four respondents supported this view:

"Keep in touch and to keep up to date in your network on certain products and legalities." – Solar A

"So, you adapted to your market needs." – Waste D

"One of the core competencies of your business is actually to be well informed about what's going on in the in the sector which enables you to adapt to changing circumstances… and obviously keeping up with what my competitors are doing… So the strategy is to engage your customer as much to get as much information out of the customer. Because sometimes the customers' needs are not always what we think it is." – Water C

"So basically, relationships enable you to be adaptive. For example, we know that there's a new notice coming out that will have an impact on legal requirements changes. Okay. So, and then be sure that we keep track of what is happening in the market" – Solar C

Furthermore, three respondents emphasised the fact that they need to have frequent communication with stakeholders to be able to adapt to changing circumstances:

"A frequent basically relationship management, it helps you to, to adapt to changing environments or whatever." – Solar A

"I think it's constant communication, constant feedback. And I really think what we've set up now is internal communication, we are ensuring that the required role players are informed, and then we've done the same with network outside." – Waste A

An informed and safe environment enables Waste C to make quicker decisions which reinforces their adaptability:

"I can we've got one owner. I know we've got a very family like old school sort of management team, everybody's on the same page. Everybody knows exactly what they're doing for how many years now, so it's quickly, you know, some guys will take a look at the business model other guys will look at the future. And we make it within half a day. rounded table." – Solar A

Solar B also reiterated the need to be able to create sustainable agility and not to be adaptable as an end in itself:

"A frequent basically relationship management, it helps you to, to adapt to changing environments or whatever." – Solar A

5.7.4 Summary of the findings of Research Question 5

This summary provides a high-level overview of the various constructs that were validated by all three sectors within the theme of the Ecosystem Context. This research question aimed to answer the question of how the business models of social entrepreneurs adapted to complex ecosystems.

Most importantly, it can be concluded that the data validated the claim of this research study that all three sectors function in complex environments. However, to be able to adapt to changing ecosystems, the social enterprise needs to be capable of sensing and adapting to complex ecosystems. This view was validated by the data.

Most respondents were able to articulate the process of identifying and evaluating opportunities within their environment and was the most frequently cited category within this theme. Although it was expected that social needs, a result of market failure, provided opportunities for social enterprises to create not only a social impact, but also to achieve economic gains, most respondents referred to the process of utilising network relationships as a mechanism to identify and evaluate opportunities. This view was supported by the need for greater market awareness and education which creates greater opportunities.

Two dominant themes emerged from the data which emphasised the importance of sensing mechanisms and the adaptive strategies of the social enterprise. This provided some valuable insights into how the business models of social enterprises adapt to complex environments. Most importantly, respondents frequently cited the importance of having an attuned leadership in the organisation that enables the emergence of a comprehensive learning environment which leveraged the sensing opportunities within stakeholder networks. It is therefore not surprising that this view was supported by the special emphasis on competitive tolerance which enables the organisation to collaborate and learn even from competitors. This tactic supports the data and can be described as an adaptive strategy which is primarily based on the capability of the organisation to be informed of changes in their ecosystem and that the business model of the organisation needs to be flexible to be able to adapt to changing ecosystems.

Chapter 6 – Discussion

6.1 Introduction

This chapter continues with an in-depth discussion of the analysed results that were presented in Chapter 5. The research questions were formulated deductively from a proposed conceptual framework which posits a complex adaptive design process for social entrepreneurship business models (Figure V). This framework has five predominant themes that inform the model and will be used to articulate the preferred research questions. The results are aligned with this conceptual framework to seek a deeper explorative understanding of the theoretical base as it relates to the selected research context. This chapter therefore seeks to compare, contrast and synthesise the findings of the research with the existent body of literature in an effort to critique and to build the relevant theoretical bases of social entrepreneurship, business models and complex adaptive systems. The latter will enable an even greater theoretical synthesis by identifying and discussing the theoretical gaps between these three bases of theory.

6.2 Discussion: Research Question 1

What are the rules and logic of social entrepreneurship business models?

In Chapter 2 it was concluded that social entrepreneurship as a behavioural phenomenon always starts with the micro-system values and social mission of the entrepreneur. However, it is crucial to understand that the entrepreneurial actions are based on their own contextual understanding of what exactly constitutes a social problem and how the solution (or business model) should be designed. The business model is therefore an extension of the ontology, rules and logic of the social entrepreneur.

Although the literature suggests that social entrepreneurship, from the perspective of the formation phases, is described as a multistage and multilevel phenomenon (Saebi et al., 2018), it is rather linear in its construction and fails to articulate how the social enterprise adapts to complex ecosystems, but most importantly if this reality forms part of the rules and logic of social entrepreneurship business models. It is therefore important to gain a deeper understanding about the content of the business model, but also more specifically the organisation as it is conceptualised by the social entrepreneur. Furthermore, it is important to explore whether the design of the social entrepreneurship business model incorporates elements that enables the organisation to not only sense, but also to adapt to changing environmental or institutional levels of complexity. The findings of these questions are compared to the relevant literature and also provide a critique on the proposed conceptual framework of Chapter 2 which will enable further theory-building.

Table XII - Social Enterprise Theme: Literature Analysis

Theme: Social Enterprise			
Categories and Subcategories (S)	**Codes**	**Validated**	**Found in Literature**
Individual Context	Association	Yes	SE
	Ambitions	Yes	SE
	Motivations	Yes	SE
	Metacognitive Process	Yes	SE
	Values	Yes	SE
	Religious Intent		
Organisational Structure and Processes	Business Model Design Process	Yes	SE
	Corporate Governance	Yes	SE
	Company Strategy	Yes	BM
	Alignment	Yes	BM
	Organisational Culture		BM
	Culture of Excellence		SE
Resources and Capabilities	Capital	Yes	BM
	Technical Skills	Yes	BM
	Big Data and Analytics		
	Intellectual Property		
	Localisation		
	Complex Skillsets		
	Family Values		
Innovation (S)	Alternative Solutions	Yes	SE
	Adaptive Capability	Yes	SE
	Network Collaboration		SE
Mission and Vision (S)	Sustainable Impact	Yes	SE
	Economically Viable Solutions	Yes	SE
	Awareness and Education		SE
	Market Leading Growth		
	Self-reliance		
Human Resource Strategy (S)	Training and Development	Yes	BM
	Social and Culture Fit		BM
	Outsourcing and Collaboration		BM

- **Validated:** *The code was cited in all three sample groups (solar, water and waste).*
- **SE:** *Social Entrepreneurship Literature*
- **BM:** *Business Model Literature*
- **CAS:** *Complex Adaptive Systems Literature*

The table above (Table XII) provides an overview of the comparison between the data and the relevant body of literature. It can be concluded from this analysis that the findings made significant contributions to the body of knowledge with a special emphasis on social enterprise structures, processes, resources and capabilities.

6.2.1 Individual Context

The context of the social entrepreneur as an individual has featured very prominently in the data and although the literature has predominantly focused on the individual unit of analysis in the preformation and present formation phases of social entrepreneurship (Saebi et al., 2018), the contextual nuances of the social entrepreneur in the post-formation and maturity phases of social enterprises seems to be lacking, even though the role of the social entrepreneur has been firmly established as a core component of a social enterprise (F. M. Santos, 2012).

All the respondents who were interviewed, self-identified with being a social entrepreneur or identified their organisation as a social enterprise. The latter is interesting given the fact that some of the companies have been established more than 30 years ago and have a strong commercial drive, although some were not sure exactly what those definitions mean and associated themselves with those definitions according to their own understanding of what they mean. Their self-identification is however supported by (Yunus et al., 2010) who posits that the primary purpose of a social business is to serve society and has products, services, customers, markets, expenses, and revenues like a 'regular' enterprise. In constructing their own definitions of what constitutes social entrepreneurship, some of the core elements that were identified by two respondents were to position the organisation somewhere between charities and pure for-profit companies. This view is supported by the literature review which define social entrepreneurship in the middle of the spectrum of the Returns Continuum Framework (Balbo et al., 2010). Sullivan Mort et al. (2003) conclude that the values, ambitions and logics of social entrepreneurs are indeed unique.

Furthermore, the literature also suggests that social entrepreneurs have a strong sense of a unified logic in the face of complexity, even though they fail to articulate how such a logic is manifest in practice (Sullivan Mort et al., 2003). The respondents mostly identified with the focus on social involvement and upliftment and emphasised the need to be an active participant in their respective communities by creating a social impact; this view is consistent with Santos (2012). The respondents' association with social entrepreneurship then informs their metacognitive processes which is a category that was identified in the majority of interviews. Two respondents' propensity to act on given opportunities within the social enterprise sector was the cognisance of poor products and services; this view differs

somewhat from the literature in that although the view of unique judgement abilities of social entrepreneurs is supported, it is often from the perspective of solving social problems and market failures. However, it is well documented that social entrepreneurs are compelled to adopt innovative ways of perceiving, and delivering superior value to their clients, which can be construed as a mechanism that critiques commercial products and services (Sullivan Mort et al., 2003).

This metacognitive process also caused the respondents to provide insight into the values that drive them to become social entrepreneurs and is a category that was validated by all three sample groups. The most prevalent value driver of social entrepreneurship was identified as a strong moral obligation by four of the respondents, with two of them citing their religious values as a key driver for their endeavours; although there is a myriad of literature that supports the view of social entrepreneurs as prosocial personalities with an enduring tendency to think about the welfare of others and that the individual has strong intentions that are informed by agency, their values and altruism (Saebi et al., 2018), no reference to religious values could be found. Solar A had a strong view on the value of integrity in life which points to the apparent lack of integrity in the sector, identified in a previous part of the analysis. This supports the strong moral agency and ethical fibre of social entrepreneurs (Saebi et al., 2018).

The importance of integrity-based values in business therefore emphasises the emergence of a strong self-concept that was highlighted by three of the respondents. One respondent went further to emphasise the value of having an entrepreneurial spirit of innovation in solving complex problems; interestingly, Saebi et al. (2018) support this phenomenon in that social entrepreneurs often have a more intense sense of agency than commercial entrepreneurs. Although one respondent, after 16 years in the Solar industry, became cynical because of their lack of scalable impact on the environment which can be construed as a fervent passion to create impact at scale, which can often leave the social entrepreneur cynical and exhausted. This statement could not be supported by the literature although it is marginally relevant to the research topic.

The above leads the analysis into the motivations of social entrepreneurs; a category that was explained by the majority of respondents. Three respondents expressed they were primarily motivated by their passion and sense of self-actualisation which is associated with entrepreneurship and for which support was found in the literature. However, the majority of respondents had a fairly strong motivation for solving problems that relate to social needs and market failure and they are motivated by community engagements to be able to be attuned to their needs; this view was also supported by a number of academics. The intrinsic motivations of the respondents inform their ambitions and 13 out of the 15 companies cited their primary

ambitions as scaling their business. The main motivation for scaling the business is to impact as many people and communities as possible; this is a very interesting finding as the references to a motivation to scale is relatively non-existent in the academic literature. Some of the mechanisms which enable them to scale is scaling by means of innovation, partnerships, and excellence; this is also a very interesting finding as Hlady-Rispal & Servantie (2018) propose that more research is required to understand where and how value can be scaled through the value network of the social enterprise. It is anticipated that this research study might provide some insights into this theoretical need.

6.2.2 Organisational Structures and Processes

This section reports on the various organisational structures and processes of social enterprises. The business model design process has been highlighted as the second most important process of social enterprises, as 11 out of the 15 mentioned such a process as part of the rules and logic of their business. This paradigm is supported by the working definition of the business model that was formulated in the literature review which posits that social entrepreneurship is an extension of the ontology, rules and logic of the entrepreneur, who designs a business model either within closed, single level, or open, multilevel parameters of value, a view that is strongly supported by the likes of Kimmitt & Muñoz (2018).

Of these processes, six respondents have validated the process of designing business models together with various stakeholders, or by providing a platform on which the different stakeholders and shareholders can connect with them and each other; this view is supported by Yunus et al. (2010) who express the view that in building a social business model, the value proposition and value network should be constructed though innovative network links between all stakeholders and shareholders. This approach is further strengthened through the emphasis on network designs which render it easy for stakeholders to interact with and do business with the organisation. Although there is no specific mention of this in the academic literature, it is however supported by the position that in contrast to the logic of control that vests in many commercial organisations, social entrepreneurs rather focus on value creation for the whole network suggesting a logic of empowerment of stakeholders (F. M. Santos, 2012). To some extent, this enables the companies to design their models with sustainability of the network relationships in mind. Interestingly, this view could not be found in academic literature. The view that the business model outcomes should aim to influence the cultures and behaviours of society, could also not be found in the academic literature and has been identified as an avenue for further research (Hlady-Rispal & Servantie, 2018).

The above leads the discussion into the importance of corporate governance of social enterprises which has been validated by all three sectors where nine respondents discussed

the corporate governance of their ventures. The academic literature touches on this aspect as it is seen that the corporate governance mechanisms of social enterprises strengthen the stewardship and transparency of the organisation, which in turn strengthen its stakeholder relationships. Waste D alluded to the barriers to entry from a compliance perspective which puts a financial burden on the business model. Although the theme of regulations are relatively absent from the literature Bozhikin et al. (2019) primarily discuss how regulations can support social entrepreneurship to enable them to overcome negative externalities, ignoring the possible negative contexts of regulatory regimes, especially within the South African context. However, although the importance of ethical corporate culture is emphasised by Waste E, the ethical culture of the organisation enabled Waste E to be more efficient from a compliance perspective, thereby cutting down compliance control costs and therefore reducing the financial burden of corporate governance on business; these insights adds to the current available literature as references to this view could not be found.

The discussion now shifts to a deeper interrogation into how social entrepreneurs formulate their company strategy. This category has been validated by all three sectors and was discussed by eight respondents, most of which conceptualised their strategy as a need to grow and scale their company. Saebi et al. (2018) very briefly touch on the strategic imperative of social enterprises to measure financial growth, although theories on strategy seems to be absent from the social entrepreneurship literature. Three companies have a strong strategic drive to be a company of excellence which can create truly sustainable solutions; this position is supported by Santos (2012) who holds that social entrepreneurs aim to achieve sustainable solutions as opposed to sustainable competitive advantages, which might explain the absence of strategic references in the body of literature. It is not clear why strategic theories do not apply to social entrepreneurship and might indicate a blind spot in the body of knowledge.

Some respondents were much more nuanced in their strategy applying diverging approaches. Interestingly, three companies cited Awareness and Education, a Compliance Advantage, Customer-centricity and a strong Innovation Focus as part of their company strategy; this stands in contrast to the academic literature which fails to mention the strategic imperatives of social entrepreneurs. However, to have a strategy is not enough as the social enterprise needs to create alignment to be able to execute the company strategy. Although there are multiple ways to create alignment, the need for alignment has been validated by all three sectors and seven respondents discussed strategic alignment in brief; moreover, just like the theories of strategy, there is a lack of literature which accurately explains how social enterprises create alignment to be able to execute their strategic imperatives; although brief references have been made to the resource based view and dynamic capabilities by Santos (2012 and Yunus et al. (2010). Two companies highlighted awareness and training as important concepts when

asked about strategic alignment. It can therefore be inferred that this need of awareness and training reinforces the need of business leaders to take responsibility and ownership of strategic alignment. This view of total ownership by the social entrepreneur was expressed by another respondent, however, no references to this stance could be found in the literature. One of the waste management companies expressed the need for re-alignment or restructuring to be able to execute the growth strategy of the firm; no references to this stance could be found in the literature. This necessitates some kind of "loose alignment" or business model adaptability as discussed earlier and interestingly, it has been supported by Waste C who emphasised a 50/50 approach to alignment and adaptation. There seems to be no references to adaptive capabilities or business model adaptation in the social entrepreneurship literature, however, the business model literature seems to allude to the need for further research of business model adaptation in complex environments (Demil et al., 2010). The organisational culture of the firm needs to facilitate and enable a continuously learning and adapting environment as explained by Waste C and Water E; no culture-specific references could be found that support this view.

6.2.2.1 Mission and Vision

In the analysis of organisational structure and processes, the mission and vision of the social enterprise became a fairly dominant theme and is supported by academics as a concept that stands at the centre of the logic of social enterprises (Sullivan Mort et al., 2003). The importance of a company vision and mission has also been validated by all three sample groups and is frequently supported by the social entrepreneurship literature (Saebi et al., 2018). The mission to create sustainable impact was the most frequently cited code group in this subcategory and is also in alignment with the social entrepreneurship literature (Dees & Anderson, 2006).

6.2.3 Resources and Capabilities

The resources and capabilities of the social enterprise was the third most cited category of the research question and was validated by all three sectors; very few, if any, academic researchers spent any considerable time on the resources and capabilities of social enterprises and through the literature review it can be inferred that this is as a result of some form of bias against literature that construes resources and capabilities as a subset of commercial entrepreneurship and competitive strategy, which is rather surprising given the significance of the findings in this specific theme. Some literature however suggests that social entrepreneurs are not deterred by the lack of resources and capabilities (Dees & Anderson, 2006) and that they often find innovative ways of functioning exceptionally well within an environment with financial constraints (Sullivan Mort et al., 2003). The discussion of these

findings and subsequent supporting findings linked to the resources and capabilities theme will therefore add value to the social entrepreneurship discourse.

All Solar companies and one of the Water companies emphasised the importance of technical capabilities in their firms, highlighting the necessity of technical capabilities to be able to run their business. An emphasis on technical capabilities enabled a few companies to build their intellectual property throughout the company's lifetime. However, these skillsets are not limited to technical capabilities and are often much more complex in nature as even technicians need to be able to cope with complex social settings as highlighted by one of the Waste Management company respondents. Three Water Engineering companies emphasised that their skillsets enable them to drive economic localisation to be able to manufacture products to fit the local environmental context. Furthermore, one of the key capabilities of two Solar and three Water companies was the ability to capture data on their operational model. These big data and analytic capabilities enable them to gain insights into stakeholder needs, to quantify the volume and scope of their operations and how it impacts communities, and to become more efficient. However, the vast majority of respondents cited access to capital as a constraint for their business because of the high capital costs of solar, waste and water solutions and lack of funding opportunities for such solutions both from private and public institutions; a stance which is somewhat lacking from the social entrepreneurship literature but is implicitly supported (Sullivan Mort et al., 2003). The latter is somewhat surprising given the fact that social entrepreneurship implies capital structures to finance the organisation, However, the importance of capital is well documented in the literature on Social Entrepreneurship (Zahra & Wright, 2016) and Business Models (Demil et al., 2010). Access to funding from government for projects was listed as a severe constraint by one of the Water companies that tried to establish water and wastewater management solutions for communities. For that reason, five companies in the various sectors used "bootstrapping" to start and fund their ventures.

6.2.3.1 Innovation

One of the subcategories that featured very prominently in the resources and capabilities category, was the necessity and ability to innovate; this was validated by all three sample groups. This view is briefly supported by Hlady-Rispal & Servantie (2018) who also emphasise that this field of research is very rare and under-researched. Weerawardena & Sullivan Mort (2006) however found that the majority of cases in their study had high degrees of innovativeness, especially from the perspective of finding innovative solutions to the problems they seek to solve. This stance is validated as the most prominent code group was the need for alternative solutions to difficult problems and has been cited by six respondents. This was primarily driven by the general lack of innovation and insight in the respective sectors as Solar

D, a fairly young and innovative company explained. These frustrations often force social entrepreneurs to think and develop differentiated alternatives to the current solutions in the market, such as Solar B, a company that developed a successful alternative solution for providing capital and funding for renewable energy projects, and Waste C, who are developing an innovative alternative for organic waste and dirty plastics, or Water E who have developed world class solutions. However, the solutions have to fit local business environment conditions and find support from Hlady-Rispal & Servantie (2018) who emphasise the need for social entrepreneurship 'embeddedness' where the social entrepreneur embeds himself into the local context. Some companies emphasise the need for self-sustainable solutions that do not depend on legacy infrastructures; this is an interesting emerging phenomenon that is not described in the social entrepreneurship literature and might expose new rules and logics of social entrepreneurs. It is however important to understand some of the antecedents of innovation for social entrepreneurs and network collaboration to solve complex problems as cited by four respondents, a view which reiterates the value of network embeddedness (Hlady-Rispal & Servantie, 2018). Furthermore, the innovative capabilities of some of the respondent companies enable them to be adaptive to changing circumstances (Dees & Anderson, 2006). Although innovation for problem-solving has already been established by the literature (Dees & Anderson, 2006), no references to this phenomenon could be found into how these innovation mechanisms are manifest in praxis. However, it is not clear exactly what the respondents meant by this and will therefore be discussed in subsequent sections.

6.2.3.2 Human Resource Strategy

In the analysis of resources and capabilities of social enterprises, the human resource strategy of the organisations became a dominant theme. Because of the fact that the human resource strategy is a subset of the resources and capabilities theme, and moreover, because the resources and capabilities theme did not find any reference in the social entrepreneurship literature, it is therefore not surprising to find that a human resource strategy has no bearing in the current academic literature, and because of the fact that social enterprises by definition implies a competence in social engagements which logically infers a need for strong human resource capabilities. This was however not to be found in the literature. However, from a business model perspective, it is fairly intuitive, as Demil et al. (2010) state, "resources enable activities and therefore lie at the heart of any business model". The importance of a human resource strategy has been validated by all three sample groups. Training and development were the most frequently cited code group in this subcategory and was validated by eight respondents. However, it is important to ensure a good culture fit of the employees which was expressed by four respondents. Respondent Solar D also explained the value of hiring external capacity and the sharing of knowledge in your network, a view which finds implicit

support by Saebi et al. (2018). Furthermore, the importance of 'nested hierarchies' within organisations, as a type of a self-organising human resource strategy, could also be construed as a typical trait of complex systems and has been supported by the findings of Massa, Viscusi, & Tucci (2018) who propose that the emerging academic theme of business models as complex systems pose an exciting avenue for further research.

6.2.4 Summary of the discussion of Research Question 1

This summary provides a high-level overview of the various constructs within the social enterprise theme that were validated by all three sectors. The rules and logic of the social entrepreneurship business model designs are most predominantly dependent on the ontological worldviews of the social entrepreneur and is confirmed by academic literature (Kimmitt & Muñoz, 2018). All the respondents self-identified themselves as social entrepreneurs and are motivated by their ambitions to create impact at scale and these motivations and ambitions are also driven by their own norms and values, both of which are a very common themes in social entrepreneurship. The metacognitive process of social entrepreneurs enables them to find alignment between these different individual contexts. This was also manifested in the organisations by virtue of the mission and vision of the organisations which emphasised the need for sustainable impact and economically viable solutions to complex problems and validates the established position of the social entrepreneurship literature as it relates to the individual and organisational contexts.

The organisational structure and processes of the social enterprise were also a very dominant category within the theme. Most importantly, the business model design process was based on a network design that involved most stakeholders of the organisation, but it was also designed from the perspective of an ethically and sustainable design that often has a strong focus on the corporate governance mechanisms of the business model. Both these themes are supported by the literature which emphasises sustainable solutions and network embeddedness.

This context informed the strategy of the organisation and social entrepreneurs aim to achieve alignment between the structures and processes of the social enterprise and the rules and logic of the organisation. However, the theme of strategic alignment was for all purposes completely absent from the social entrepreneurship literature and it can be inferred that this theoretical domain belongs to commercial entrepreneurship; a view which creates a blind spot in literature on social entrepreneurship.

Furthermore, the access to capital and technical skills seemed to be a core competency of social enterprises as it enables them to achieve their goals. This is supported by a human resource strategy that focuses on training and development. The theme of resources and

capabilities was also absent from the social entrepreneurship literature which is very surprising given the fact that it is a very dominant theme in the business model literature. The business model literature will therefore provide interesting and valuable concluding additions to the social entrepreneurship literature which will enable a more coherent theory building process.

A strong emphasis on innovation was also common within the data as it enables the social enterprise to adapt to changing environments by create alternative solutions through network collaboration. This view is supported by the relevant academic literature and provides an avenue for further discussion.

6.3 Discussion: Research Question 2

How does the business model of the organisation create network value?

This research question aims to understand how the business model is designed from the perspective of creating value for the network of stakeholders that are connected to the firm. Although the literature review in Chapter 2 highlighted the importance of stakeholders as it relates to having a more holistic view of the embeddedness of the social enterprises, it is not clear how this relationship with stakeholders manifests itself. Furthermore, the literature frequently refers to the ability of social enterprises to create social value. Although it is not clear how this value is translated through the business model of the firm as most academics discuss this theme at a relatively high level of abstraction. This section therefore discusses the findings as they relate to this theoretical context to aid the subsequent theory building process.

Table XIII - Value Network Theme: Literature Analysis

Theme: Value Network			
Categories and Subcategories (S)	**Codes**	**Validated**	**Found in Literature**
Network Interface and Stakeholder Management	Stakeholder Relationship Network	Yes	SE
	Network of Trust	Yes	SE, BM
	Formal Engagements	Yes	CAS
	Communication Mechanisms	Yes	CAS
	Contracting		BM
	Relationship Broker		CAS
	Hope and Faith		
Value Creation	Design-thinking and Customer-centricity	Yes	SE
	Social Value	Yes	SE
	Stakeholder Value	Yes	SE

Value Capturing	Brand Equity	Yes	SE
	Economic Gains	Yes	SE
	Social Equity	Yes	SE
Adaptation	Business Model Evolution	Yes	CAS
	Business Model Redesign and Adaptation		CAS
Product Value (S)	Reliable and Sustainable		SE
	Value for Money		SE
	Modular and Scalable		SE
	Simple and Understandable		CAS
Service Value (S)	Valuable Customer Engagements		SE
	Trust Relationship and Low Risk		SE
	After Sales Support		SE
Value Delivery	Distribution Channel		BM
	Pull Model		BM, CAS

- **Validated:** *The code was cited in all three sample groups (solar, water and waste).*
- **SE:** *Social Entrepreneurship Literature*
- **BM:** *Business Model Literature*
- **CAS:** *Complex Adaptive Systems Literature*

The table above (Table XIII) provides an overview of the comparison between the data and the relevant body of literature. It can be concluded from this analysis that most findings are supported by literature on social entrepreneurship, however the findings make significant contributions to the body of knowledge with a special emphasis on the relevance of complex adaptive systems in the context of social entrepreneurship business models. No references were found on the theme of hope and faith, although the meaning of this construct was inconclusive and of less value given the limited scope of the research.

6.3.1 Network Interface and Stakeholder Management

The aspect of how social enterprise interfaces work or how management of its stakeholder network is done featured very prominently in the data. The categorical elements of the social enterprise network interface were not only validated by all three sectors, but it was also the most cited category in the value network theme with 11 respondents underscoring this phenomenon. All the respondents who were interviewed, identified the importance of network interfacing and the stakeholder relationship management process in the social enterprise network as the most dominant code group of this category; this phenomenon finds support in social entrepreneurship literature and is often referred to the process of empowerment and embeddedness (Hlady-Rispal & Servantie, 2018; F. M. Santos, 2012). The respondents highlighted the building of a trustworthy relationship to enhance network awareness; this stands in contrast with the literature which isolates the domain of social awareness to the role

of civil societies and non-profit organisations (F. M. Santos, 2012). However, Hlady-Rispal & Servantie (2018) report that cultural embeddedness is the phenomenon where the social entrepreneur is 'embedded' into the local context, but they also report that more research is needed within this realm. Waste E even incorporate active stakeholder management mechanisms into their management processes which enables them to gain deeper insights into their value network. As discussed above, the value of stakeholder or network embeddedness is mentioned in brief and does not account for the content-specific mechanisms of how a social entrepreneur expresses embeddedness in the business model.

The need to create a network in which there is a strong trust relationship between stakeholders was the second most referred statement in this category with seven respondents who validated the value of having a network of trust as part of the business model; although this is not sufficiently explained in the social entrepreneurship literature, it is however fairly common in the business model literature (Zott et al., 2011), which begs the question of why such an important construct does not form part of the social entrepreneurship discourse. The importance of value networks also strengthens the organisation from the perspective of creating a consistent mental model of the social enterprise and it not only moderates the risk in the network, but also facilitates learning. Although Hlady-Rispal & Servantie (2018) touches on the importance of social entrepreneurs to understand the ecosystem they are functioning in, this view is not sufficient for explaining how social entrepreneurs function within complex environments. This expression also finds some support in the academic literature of Complex Adaptive Systems which postulates that spontaneous learning is an outcome of self-organising networks (Hinson & Osborne, 2015). Furthermore, several companies stressed the importance of having formal engagements with stakeholders to strengthen the network and six respondents validated this view. The formal engagements of Waste A were even organised in a Community Forum. These phenomena also find support from the complex adaptive systems literature which describes a process that selects a subset of interactions for replication and enhancement (Levin, 2002). This view is further supported by very recent academic business model literature which posits that business models could take the same form and shape of complex systems as they often exhibit traits of complex information interfaces (Massa et al., 2018). The format and frequency of stakeholder engagements are therefore diverse and iterative as highlighted by Waste D and Water B which provides further support for the views of complex adaptive system processes (Hinson & Osborne, 2015; Levin, 2002). Some relationships with important stakeholders have however been formalised by form of contracting. Formal relationships therefore also improve the sustainability of the relationship and the network. Two respondents use relationship brokers as an intermediary to facilitate difficult links or stakeholder relationships which will create new opportunities; this is

interestingly also a hallmark trait of complex adaptive systems (Hinson & Osborne, 2015; Levin, 2002).

6.3.2 Value Creation

The second most cited category in the value network theme was the importance of value creation. The importance of this construct could be validated by literature on both the social entrepreneurship and business model (Demil et al., 2010; Yunus et al., 2010). Design-thinking and customer-centricity was the most cited code group of this category and was validated by all three sectors with 11 of the respondents. Design-thinking or customer-centricity mostly focuses on the unique needs of stakeholders and customers within the value network and can sometimes even reinforce the financial model of the firm; this stance is supported by business model literature (Demil et al., 2010 and Teece, 2018), and also by literature on social entrepreneurship which emphasises that social entrepreneurship business models are built on a logic of empowerment that places the role and needs of stakeholders in a focal position (F. M. Santos, 2012). The value of being customer-centric is also supported by literature on Complex Adaptive Systems literature (Groeger et al., 2019). Solar B did some market research into the specific nuances of financial market preferences with impact investing as it relates to social enterprises, illustrating that by merely doing “social good” is not sufficient for a sustainable enterprise. This begs the question how much society values addressing market failures, and it was the second most cited code group in the value creation category with seven respondents who validated this notion across all three sectors. The mechanisms of creating social value however varied throughout the sample group. The need to create not only social value, but value that transcends product value, aims to deliver value for as many stakeholders as possible by creating a valuable service; this view is supported by literature on social entrepreneurship (Dees & Anderson, 2006). This leads the analysis into the next two subcategories of value creation which are Product Value and Service Value; themes that are very common in literature on business models.

6.3.2.1 Product Value

Product value has been construed to have prominent elements that were deemed important by the respondents. Six respondents indicated that a product needs to be reliable and sustainable; which is supported by the academic position of creating sustainable social value through sustainable solutions (F. M. Santos, 2012). Furthermore, the product value is also more than just about quality; it is about value for money and affordability and was highlighted by five respondents. Two respondents emphasised the need for products to be modular and scalable which enable them to provide a more affordable product, a position that has been confirmed by Dacin, Dacin, & Tracey (2011). Solar B and Solar D stressed the importance of

having a simple and understandable product offering to reduce confusion in the market; although this notion is not explicitly mentioned in the literature on social entrepreneurship or business models, the complex adaptive literature that examines business models as complex adaptive systems implicitly gives credence to the value of having simple communication mechanisms as providing emergence to an adaptive system (Groeger et al., 2019).

6.3.2.2 Service Value

Service value has also been cited as a very important aspect of value creation. Six respondents expressed the value of having valuable customer engagements to create maximum value for the customer and it is also very important for Solar A to offer excellent after-sales support services. This is supported by Yunus et al. (2010) who hold that often social enterprises channel surpluses back to customers in the form of more affordable or superior quality products and services. Furthermore, a number of respondents reasoned that an excellent service also reinforces the trust relationship between the company and their customers which is supported by the same authors, as social enterprises often seek long-term relationships with and among stakeholders.

6.3.3 Value Capturing

The process of capturing value was also regarded as a highly important category with each code group being validated by all three sectors. Eight respondents explained that brand equity was the most valuable construct of value capturing as their business activities have a strong influence on the reputation of their companies; this is in coherence with the literature which describes a strong 'brand image' of social entrepreneurship at both individual and societal levels (Dacin et al., 2011). The second most important code group for the value capturing category was the necessity of capturing economic gains and was cited by seven respondents who provided some interesting insights (Shaw & Carter, 2007). The Waste Management sector were specifically quick to explain that their sector has razor thin margins because of low commodity value which necessitates higher sales volumes. However, as Waste D stated, economic gains are not the be all and end all; the importance of social equity was stressed by a number of respondents, especially from the perspective of social engagements to create greater awareness, as Water E explained; all of which is supported by the body of literature (Shaw & Carter, 2007).

6.3.4 Adaptation

The value of the business model adapting to the dynamics of the value network was also validated by all three sectors. The evolution, adaptation and redesign process of the business model was cited by eight respondents; this is an interesting finding as the discussion of adaptive business models is rather absent from the social entrepreneurship and business

model literature and there is very recent research on complex adaptive systems that confirms the crucial importance of business model adaptability (Groeger et al., 2019). Furthermore, the business model literature suggests that some models might exhibit traits of multi-dimensionality within complex networks (Baden-Fuller & Mangematin, 2013). The position of adaptive models seems to have been developed recently (Groeger et al., 2019) as suggested by Baden-Fuller & Mangematin (2013). It is fairly common knowledge that literature on 'dynamic capabilities' suggests that such capabilities would enable originations or even business models to adapt to changing environments (Teece, 2018). The latter was not necessarily conceived as a capability that would take a central role specifically in social entrepreneurship business model designs. It is therefore a very surprising academic breakthrough that the importance of social entrepreneurship business model adaptation has been validated by all three sectors and make a significant contribution to the theoretical base of social entrepreneurship and business model theories as the notion of complex adaptive business models is highly relevant to the research context of social entrepreneurship. These evolutions were sometimes as a result of hypothesis testing by the social entrepreneur as Water A explained. However, there are also various ways in which the business models have evolved over time, from a change in scope, a change in funding models, operations, products, technology, service levels, contractors, competitive landscape, corporate governance, etc., all of which are hallmark traits of a complex adaptive system (Cilliers, 2004; Groeger et al., 2019; Hinson & Osborne, 2015; Levin, 2002). This provides an exciting avenue for further discussion.

6.3.5 Value Delivery

The least cited category of the value network theme was the distribution channel with only three respondents who referred to this construct which is unsurprising from a social enterprise perspective. However, common to other categories, the value of having a trusting and supportive relationship with suppliers was emphasised which gives further confirmation of the position of trust relationships (F. M. Santos, 2012). Furthermore, the act of creating greater awareness also created a demand strategy for the companies, although this is a fairly surprising find from a social entrepreneurship perspective which does not explicitly mentions this. It is fairly common practice from the perspective of business models and corporate marketing and can also be explained by the complex adaptive systems theory where an increased awareness 'or urgency' of solving complex problems reinforces the process of emergent change (Hinson & Osborne, 2015).

6.3.6 Summary of the discussion of Research Question 2

This summary provides a high-level overview of the various constructs that were validated by all three sectors within the value network theme, and also found support in social entrepreneurship literature. As expected, a strong emphasis on network interface mechanisms and stakeholder management techniques emerged from the data, which enables the social enterprise to translate value throughout its network. Most respondents consequently focused on building a network of trust with stakeholders. This was predominantly achieved through a wide array of communication mechanisms that emphasised high frequency engagements with stakeholders of which the most important links within the stakeholder network were managed by formal engagements to create a sustainable trust relationship. These mechanisms are most often to be found in the complex adaptive systems literature, which implies that the formation of relationship building mechanism is a complex adaptive systems phenomenon which enables the social enterprise to build, grow and retain the value network.

These mechanisms also enable the social enterprise to be attuned to the needs within the network and was confirmed by a strong focus on design-thinking and customer-centric approaches that strengthened the value creation processed of the organisation. This is also strongly supported by the social entrepreneurship literature. The value creation process employes both product value and service value mechanisms although there was a special emphasis on quality and excellence which not only provide value for as many stakeholders as possible, but also provide value for society within their specific contexts; again, a fairly common praxis of social entrepreneurship.

However, the counter of value creation is the value capturing mechanisms of the organisation which most interestingly focused a lot on brand equity and social equity, with economic gains also featuring prominently within this data set. These activities and outcomes are common traits of social enterprises and reinforces its value to society. The strong focus on a trusting stakeholder network as a business model design can be construed as an antecedent for adaptable and evolving business models as the changing environment from a stakeholder perspective necessitated a change or redesign of the organisation to ensure the sustainability of the organisation. Most surprising, this emerging theme was not expected from the sample group and could also not be found in the social entrepreneurship theory base and finds little resemblance in the business model literature. However, as discussed in this section, evolving and adaptive business model is a relatively new avenue of complex adaptive systems research and is a classic example of how complex adaptive systems behave and could explain how the social entrepreneurship business models create network value. These findings therefore make an interesting and significant contribution to specifically the social entrepreneurship literature and give preliminary confirmation that the social entrepreneurship

business model is indeed a complex adaptive system as it was also validated by all three sectors of the sample group. This phenomenon will be discussed in more depth as it is anticipated that the other research questions might give some more insight into these findings.

6.4 Discussion: Research Question 3

What is the role of stakeholders in the business model of the organisation?

The role of stakeholders and institutions features very prominently in the data. This section therefore discusses the findings as they relate to this theoretical context to aid the subsequent discussion and theory-building based on these findings.

Table XIV - Stakeholders Theme: Literature Analysis

Theme: Stakeholders			
Categories and Subcategories (S)	**Codes**	**Validated**	**Found in Literature**
The Role of Institutions	Private Sector	Yes	SE
	Collective Responsibility	Yes	
	Government	Yes	SE
	Culture and Behaviours of Society	Yes	SE
	Norms and Values		SE
	Civil Society		SE
	Legitimacy		
Private Sector Relationships	Capital Providers	Yes	BM
	Customers	Yes	SE
	Competitors	Yes	SE
	Suppliers	Yes	SE
	Contractors		SE
	Property Owners		
	Subsidiaries		
Legislation and Regulations (S)	Enforcement	Yes	CAS
	Barriers to Entry		CAS
	Risk Management		CAS
Public Sector Relationships	Local Government	Yes	SE
	National Government		SE
	Regulators		SE
	Toxic Politics and Corruption		SE
	Universities		
	Communities and Beneficiaries	Yes	SE

Civil Society Relationships	Community Leaders		SE
• **Validated:** *The code was cited in all three sample groups (solar, water and waste).* • **SE:** *Social Entrepreneurship Literature* • **BM:** *Business Model Literature* • **CAS:** *Complex Adaptive Systems Literature*			

The table above (Table XIV) provides an overview of the comparison between the data and the relevant body of literature. It can be concluded from this analysis above that most findings are supported by literature on social entrepreneurship, but the findings also make a contribution to this body of knowledge with special emphasis on the relevance of complex adaptive systems in the context of legislation and regulations as a mechanism that determines the rules of interaction within social entrepreneurship business models. No references could be found on the theme of collective responsibilities as the understanding of what it exactly means was inconclusive and of less value given the limited scope of the research.

6.4.1 The Role of Institutions

The role of institutions was very prominently discussed among respondents within the stakeholders' theme. This category had several code groups that were validated by all three sectors. The most prominent code group in the stakeholder theme was the role of the Private Sector with 10 respondents commenting on its role in social entrepreneurship. The respondents strongly highlighted the responsibility of the private sector to address social needs and market failure within the respective sectors of the power utility, water and sanitation, and waste management; this position is in coherence with the dominant logic of social entrepreneurship which holds that it is in the domain of social entrepreneurs to solve neglected problems with positive externalities (Santos, 2012). However, for the private sector to provide solutions for the lack of public services, necessitates a novel relationship with customers. Contrary to the dominant view of what constitutes the private sector, it seems as from the perspective of the respondents, they construe the private sector as social entrepreneurs, and not necessarily the traditional corporate nature of the private sector; this perspective is also supported by Santos (2012).

However, the burden cannot be placed solely on the private sector and a shared vision with a collective responsibility should rather be sought as eight respondents from all three sectors alluded to this point. Although there is a strong argument for collaboration and collective responsibility (Dees & Anderson, 2006), not only between stakeholders in general, but also between stakeholders that have a social responsibility mechanism as part of their business model (Zahra & Wright, 2016); a number of respondents do not trust government to provide public service, citing lack of funding and a lack of political will; these are typical traits of market failure in that government fails to deliver on its mandate (Santos, 2012). Furthermore, the

cultures and behaviours of society was also seen as a barrier to sustainable change and was validated by all three sectors and six respondents; Santos (2012) proposes that this is predominantly the realm of social activism which aims to change the social system by influencing the behaviours and cultures of society. However, cultures and behaviours are found to be slow to change. One of the possible solutions would however be to change the culture and behaviours of society by creating greater awareness through the activities of the social enterprise (Santos, 2012). The culture of society at community level is also regulated by the norms and values of those communities as two respondents explained, which is also supported by Hlady-Rispal and Servantie (2018) who hold that social entrepreneurs often function within the realm of the norms and values of institutions. In one instance, government even lowered its regulations regarding norms and standards in practice, thereby lowering the barriers to entry for new market players, a strategy that was suggested by Zahra & Wright (2016). This lead the analysis into the discussion about the role of regulations and institutions.

6.4.1.1 Legislation and Regulations

As a subcategory of the role of institutions, the role of legislation and regulation was a dominant theme in the data and has been validated by all three sectors. Six respondents explained the process of enforcement which is often applied inconsistently within this context. Although there is little research relating to regulatory regimes within the social entrepreneurship context, the work of Bozhikin et al. (2019) is most notable and articulates the regulatory regimes that are needed for the support of social entrepreneurs.

However, not only was the abovementioned study done within contexts that have little in common with South Africa, but it also focused on what could be, instead of what is. These findings are therefore novel given the research context and a more nuanced approach to the regulatory regime of South Africa as it relates to social entrepreneurship which is warranted and could pose an avenue for further research. The effect of legislation and regulation on the barriers to entry for competitors was the second most cited statement within this subcategory, with seven respondents expressing various diverging aspects of this phenomenon. Solar D stressed that regulation is often ill adapted to the changing nature of the industry, a need that has been identified by Zahra & Wright (2016). Some of the regulations are grossly unnecessary and unaware of industry dynamics, placing a barrier on innovation. However, Waste A regards the value of legislation and regulation as a mechanism to increase trust and lower risk within the network. Legislation and regulation as a governing mechanism finds support in the complex adaptive system literature and can be described as mechanisms for the rules of interaction at systems level. It is therefore, from this perspective, not surprising that if the social entrepreneurship business model is a complex adaptive system, the actors within this context seek to modulate and influence the ‘rules of interaction’ to such an extent

that it supports and strengthens the business models of social entrepreneurs (Levin, 2002). Solar C has successfully achieved this aim by doing just that, which further supports this proposition.

6.4.2 Private Sector Relationships

Of all the various institutional stakeholders, private sector relationships was the most dominant category and has been validated by all three sectors. Of these private sector relationships, the relationship with capital providers was the most prevalent with seven respondents citing capital provider relationships, focusing on the need for funding company growth and innovation. This position was already discussed in research question one, which reports that the relationship with capital providers is somewhat lacking from the social entrepreneurship literature, but is implicitly supported (Sullivan Mort et al., 2003). The latter is surprising given the fact that social entrepreneurship implies capital structures to finance the organisation. However, the importance of capital is well documented in business model literature (Demil et al., 2010).

The second most prominent code group within the private sector category was the relationship with customers and was validated by all three sectors; it is fairly common knowledge that social entrepreneurs heavily rely on profitable customers. Five respondents explained the value of having sustainable relationships with customers. Four respondents stated that formal and frequent communication with this stakeholder group was an important process, similar to the ‘embeddedness’ of stakeholders which was discussed in research question two.

Five respondents validated the nature of relationships with competitors, especially from a compliance perspective. Supportive relationships with suppliers that understand the social entrepreneurship model were validated by all three sectors and was supported by business model literature with four respondents citing this as important for their business model. Three respondents went further to highlight the importance of trustworthy third-party installers. It is interesting to note that all these relationships with private sector stakeholders reaffirm the position of trustworthy relationships, a theme which is very common in the data and as discussed in previous sections. It builds on the theories of embeddedness by Hlady-Rispal and Servantie (2018) in that the theme of frequent and deep relationships with stakeholders imply a process that selects a subset of network interactions for replication and enhancement (Levin, 2002), therefore strengthening the proposition of describing social entrepreneurship as complex adaptive systems.

6.4.3 Public Sector Relationships

The relationship between social enterprise and the public sector was also discussed by many respondents and was validated by all three sectors. It is however interesting to note that little

reference to other topics in the public sector relationship category was found in the data which supports the previous discussion about the lack of reliance on government to solve market failures. Local government relationships, the most cited code group within the category, had four respondents explaining the nature of this relationship and how local government fails to deliver sustainable solutions. Solar C however achieved success by innovating the regulatory framework through collaboration with regulators and was discussed previously in the legislation and regulation section.

6.4.4 Civil Society Relationships

Surprisingly, the relationships with civil society was the least mentioned category in the stakeholder theme, although the role of civil society has been validated by all three sectors. The most frequently cited code group was the relationship with communities and beneficiaries which was cited by three respondents. As discussed previously, Hlady-Rispal and Servantie (2018) proposed that it is important for social entrepreneurs to create 'embeddedness' of the social enterprise into the local societal context. This position is therefore strengthened by the cited relationships between the respondents and civil society.

6.4.5 Summary of the discussion of Research Question 3

This summary provides a high-level overview of the various constructs that were validated by all three sectors within the stakeholder's theme. Apart from merely mentioning the various stakeholders, the data most frequently reported the various roles of institutions in relation to solving complex problems, such as market failures. Interestingly, although there were frequent referrals to the collective responsibility of society to tackle these issues and although the cultures and behaviours of society was often critiqued, most social entrepreneurs emphasised the role of the private sector as an integral stakeholder which had an important responsibility to solve for market failure. This view was supported by the frequent references to private sector stakeholders such as capital providers, customers, competitors, and suppliers who played an important role within the business models of a social enterprise. It can be concluded that most of these findings are mostly supported by social entrepreneurship literature and by business model literature. One would expect to encounter more frequent references to civil society and relationships with communities and beneficiaries in the data, because civil society still plays a vital role in the stakeholder network and was validated by all three sectors and is supported by the social entrepreneurship literature.

Interestingly, there was much less reference to the role of government and the inclusion of public sector stakeholders within the business models of social entrepreneurs. However, there was a strong emphasis on the importance of legislation and regulations, and it was also heavily critiqued from a compliance enforcement perspective which have many adverse effects on the

ecosystem. This is interesting and provides a deeper understanding of the importance of the value network of the business model as it is to some extent moderated by 'rules of interaction' (Levin, 2002), a common trait of complex adaptive systems. This finding is therefore quite significant as it strengthens the proposal of describing social entrepreneurship as a complex adaptive system and will be discussed in more depth in the subsequent sections.

6.5 Discussion: Research Question 4

How does the business model of the organisation create social impact?

According to the relevant literature, it is difficult to measure and understand the level of impact that is created by social entrepreneurs from the perspective of their social mission (Hlady-Rispal & Servantie, 2018). This research question therefore aims to explain how social entrepreneurs measure social impact and company performance. This section therefore discusses the findings as they relate to this theoretical context to aid the subsequent theory building.

Table XV - Ecosystem Impact Theme: Literature Analysis

Theme: Ecosystem Impact			
Categories and Subcategories (S)	**Codes**	**Validated**	**Found in Literature**
Measuring Impact and Company Performance	Change in Human Living Environment	Yes	SE
	Financial Performance	Yes	SE
	Customer Satisfaction	Yes	SE
	Balanced Approach or Shared Vision	Yes	SE
	Success Stories		SE
	Emergent Change		CAS
	Alternative to Government Services		SE
	Reducing Carbon Footprint		SE
	Resilience		
	Internationally Relevant		
	Community Satisfaction		SE
	Compliance Tracking		CAS
Sustainability (S)	Self-Reliance and Independence	Yes	
	Of the Venture	Yes	SE
	Of the Solution	Yes	SE
	Of the Network and Industry		SE
Scalability (S)	Social vs. Financial Tension	Yes	SE, CAS

	Volume and Scope of Impact	Yes	CAS

- **Validated:** *The code was cited in all three sample groups (solar, water and waste).*
- **SE:** *Social Entrepreneurship Literature*
- **BM:** *Business Model Literature*
- **CAS:** *Complex Adaptive Systems Literature*

The table above (Table XV) provides an overview of the comparison between the data and the relevant body of literature. It can be concluded from this analysis that most findings are supported by the social entrepreneurship literature. However, the findings also contribute to this body of knowledge with special emphasis on the relevance of complex adaptive systems in the context of emergent change as a measurement of impact and performance, as well as the theme of scalability as an indicator of complex adaptive business models within the context of social entrepreneurship. No references could be found on the outcome of self-reliance and independence from government services as the meaning of this construct was inconclusive and of less value given the limited scope of the research.

6.5.1 Measuring Impact and Performance

The majority of respondents spent significant time explaining how they measure social impact and company performance, an area of research that has been identified as lacking empirical research (Zahra & Wright, 2016). The most frequently cited code group within this category was the mission to change human living environments and was validated by all three sectors and eight respondents focused on empowerment, human dignity and also on providing sustainable services; this position is coherent with the logic of empowerment as described by (Santos, 2012). There was also a significant focus on the financial performance of the organisations which has been validated by all three sectors and as supported by Shaw and Carter (2007).

Seven of the respondents expressed the importance of this process and how they measure financial performance, often citing quantitative measures not only for tangible outcomes but even for social impact measurement. These mechanisms are supported by Rawhouser et al. (2019) who recently found that many social entrepreneurs have started to adopt rigorous quantitative measures, an area that could be promising for further research. Four respondents expressed the importance of measuring customer satisfaction and validated by all three sectors which is interesting, as it reinforces the mutual value stakeholder networks (Yunus et al., 2010). Four respondents from all three sectors expressed the view that there should be a balanced approach in solving for market failure, although it is not clear what exactly is meant by this statement. Six respondents had elaborate stories to tell when they were asked about how they measure success; this phenomenon is supported by Santos (2012) who holds that to measure the concept of value capture could be done at the macro-level in society, which

per implication can be construed as a qualitatively rich discussion, but can also be measured at meso-level. The complicated nuances of success stories are therefore an interesting emerging phenomenon that relate to the measurement of success. Water B stated that it seems as though the political will to change is not present at government level; it is therefore not surprising to find that some of the respondents aim to deliver substitutes to public services as a way of measuring impact which reinforces previous discussions about this topic. Furthermore, three respondents measure impact by virtue of reducing the carbon footprint, which is typical of social entrepreneurship which aims to solve social issues such as climate change. Waste A measures impact through community satisfaction and compliance metrics; this reinforces the previous discussions about 'embeddedness' and 'rules of interaction'.

The data delivered some instances which indicated that the solving of market failure is comparable to baking a cake (Water B) in that one needs to create conditions for emergent change. Water E speaks about infecting society; this is an interesting finding as the respondents explicitly referred to creating impact as a process like 'baking a cake', 'creating emergent change' and 'infecting society'. In their view, it can therefore be inferred that not only is the business model an adaptive system, but according to their internal rules and logic, the solutions of market failure should also be approached from a complex adaptive systems perspective and that the social entrepreneur as a focal firm, needs to institute this change by creating the conditions for emergent change. Some social entrepreneurship academics alluded to the fact that social entrepreneurs solve problems by understanding complexities (Weerawardena & Sullivan Mort, 2006) and this postulation is in perfect coherence with the theory of complex adaptive systems (Groeger et al., 2019), therefore contributes significantly to the body of knowledge of social entrepreneurship and further strengthening the previous findings that describe social entrepreneurship as a complex adaptive system.

6.5.1.1 Sustainability

Within the measuring impact and company performance category, there was a very dominant theme of sustainability; an important domain that has been identified for further research (Zahra & Wright, 2016). The sustainability subcategory was validated by all three sectors and eight respondents seek solutions that would enable customers to become more self-sufficient and independent of government services; this is an interesting finding as there is no literature that could be found to support the view that social entrepreneurs aim to provide solutions that make customers or beneficiaries self-sufficient or independent from government services. This phenomenon could be explained by some of the motivations and values of social entrepreneurs, but it will take significant effort to explain what exactly does it mean to be self-sufficient or independent from government services and this deviates somewhat from the scope of the research topic.

Respondents were also preoccupied with the notion of creating a sustainable venture, fully supported by Santos (2012) and Weerawardena and Sullivan Mort (2006). This was also validated by all three sectors and eight respondents seek to create a sustainable business model. Respondents frequently discussed the importance of having sustainable solutions or business models, which is also an aim that is supported by the literature (Santos, 2012). This notion was validated by all three sectors and seven respondents expressed a wide array of elements that constitute sustainable solutions. Lastly, four of the respondents cited the necessity of creating a sustainable network or industry, and to have a sustainable funding mechanism for the business model. This can, to some extent, be explained by the construct of 'embeddedness', although Santos (2012) explains that social entrepreneurs seek sustainable solutions as opposed to sustainable competitive advantages, therefore negating the value of competing with stakeholders and to rather create network value, which is also supported (Santos, 2012).

6.5.1.2 Scalability

The issue of scalability was also a prominent subcategory with the majority of respondents citing this as important. This was validated by all three sectors and 12 respondents gave some insights into the tension between social and financial aims and how it relates to scalability.

A view on scalability is absent in the work of Dacin et al. (2011) citing the need for further research in this domain. Four respondents thought that the social and financial aims of social enterprises are self-reinforcing. The scalability of solution was therefore a central discussion of the theme of measuring impact and performance, with most rejecting the notion of mutual exclusivity of the tension between social and financial aims. This is an interesting finding, but although there are many social entrepreneurship references to sustainable solutions, there are very few references in the literature to scaling solutions, and virtually no references to why scaling is important. It can be inferred that the process of scaling solutions or the venture might be analogous to competitive advantages, a dominant logic of commercial entrepreneurship.

However, within the context of social entrepreneurship, scaling from the logic of the respondents means solving problems for more constituents. The findings support this stance as the majority of respondents also highlighted the necessity of achieving impact through volume and scope. This has been validated by all three sectors and nine respondents made a case for creating impact at as big a scale as possible. Interestingly, by sustainably managing the tension between social and financial aims, Solar B posited that it enables the organisation to scale the solution to complex problems; this adds an interesting dynamic to how social entrepreneurs construe the process of measuring impact and performance, especially within the context of complex ecosystems. Furthermore, even though the position of viewing value

capturing and value creation as an integrated and self-reinforcing set in the traditional business model literature (Zott et al., 2011), it is interesting to find such references in the data. This phenomenon can almost be described as an open and flexible boundary of the organisation which supports the constant adaptive flow of information, resources and knowledge; a phenomenon which contain descriptive elements complex adaptive business models and adds to the growing understanding of how social entrepreneurs measure impact and performance (Groeger et al., 2019).

Interestingly, Waste C sees innovation as a critical capability that enables the social enterprise to manage the tension between social and financial aims. It can be inferred that innovation enables the social enterprise to adapt to the changing boundaries of the organisation which has a marked difference from the traditional view of product or service innovation. Innovation in this context therefore is a capability to adapt the business model, based on flexible information and resource flows. This phenomenon finds its expression in the most recent findings of complex adaptive business model literatures (Groeger et al., 2019) and is also implicitly supported by very recent business model literature that suggests that business model adaptability creates the necessary capabilities to correctly size the scope of a business (Teece, 2018). Waste E holds the view that one will find it difficult to sustainably manage the tension between social and financial aims if there is a lack of trust in the stakeholder network, further reinforcing the view of network embeddedness as a necessary architecture to enable the business model to function as a complex adaptive system (Groeger et al., 2019). Furthermore, it seems as though an investment into the human resources model of the social enterprise also reinforces its ability to manage the tension between social and financial aims as Waste B pointed out; a phenomenon that also finds support in the complex adaptive systems literature which stresses the importance of empowered agents as opposed to a hierarchical structure (Groeger et al., 2019) and is further strengthened by the logic of empowerment (Santos, 2012).

6.5.2 Summary of the discussion of Research Question 4

This summary provides a high-level overview of the various constructs that were validated by all three sectors within the theme of Ecosystem Impact. This research question aimed to lend some insight into the complex conundrum of measuring social impact and company performance, and more specifically, how the tension between the social mission and financial gains was managed by social entrepreneurs, an area of research that needs a deeper explanation into how these constructs are understood and measured by entrepreneurs (Rawhouser et al., 2019) whose research output was somewhat inconclusive because of the lack of coherent empirical data.

Not surprisingly, the respondents most frequently referred to the change in human living environments as the most important outcome of social enterprises and the second most important driver of company performance was the financial gains of the organisation which brings it in balance with the mission of the organisation which was discussed in previous sections. Interestingly, the measurement of customer satisfaction featured fairly prominent within this category and a balanced approach or a shared vision between all shareholders was also emphasised; a domain that was discussed in depth in previous sections.

The emerging themes of sustainability and scalability gave some more in-depth insights into the research question. A strong emphasis was given to the sustainability of the solutions, the venture, the industries and the stakeholder network which is strongly supported by the current body of knowledge. This enables the social enterprise to increase the scope and volume of value generation and capturing within the network, which was seen as an important metric for measuring impact and performance. This was a very interesting finding as this process is analogous to the theme of competitive advantaged in commercial entrepreneurship, although the context of this finding fits perfectly within the frame of social entrepreneurship and adds to the existing body of knowledge. It can be concluded that the data suggests that the strong trust relationships with the stakeholder network enables the social enterprise to qualitatively measure impact at the ecosystem level, further emphasising the descriptive elements of complex adaptive systems.

The majority of respondents do not encounter unsurmountable tension between the social mission and the financial gains of the organisations and rather construe it as a self-reinforcing mechanism that can be managed. Some academics theorised that the borders between these constructs are beginning to diffuse and these findings conclude that this phenomenon is indeed becoming increasingly prevalent (Dees & Anderson, 2006). It seems as though the trust relationships of the stakeholder network configuration enable the social enterprise to manage this tension and it could be concluded that these two constructs are not mutually exclusive. This phenomenon can almost be described as an open and flexible boundary of the organisation which supports the constant adaptive flow of information, resources and knowledge; a phenomenon which contains descriptive elements of complex adaptive business models and adds to the growing understanding of how social entrepreneurs measure impact and performance. These findings therefore make a significant contribution to the social entrepreneurship literature.

6.6 Discussion: Research Question 5

How does the business model of the organisation adapt to complex ecosystems?

Chapter 2 of this research report concluded that the business models of social entrepreneurs could potentially be described as complex adaptive systems, although it is not clear how this proposition manifests itself within the context of the research population; Chapter 5 has presented the findings of this research question. This section therefore discusses the findings as they relate to the literature to aid the subsequent theory building process.

Table XVI - Ecosystem Context Theme: Literature Analysis

Theme: Ecosystem Impact			
Categories and Subcategories (S)	**Codes**	**Validated**	**Found in Literature**
Opportunity Identification and Evaluation	Network Value	Yes	SE
	Market Failure	Yes	SE
	Social Need	Yes	SE
	Economic Opportunities	Yes	SE
	Market Awareness and Education	Yes	BM, CAS
Sensing Mechanism	Complex Ecosystem	Yes	CAS
	Competitive Tolerance	Yes	SE, BM, CAS
	Attuned Leadership	Yes	SE, BM, CAS
	Learning Environment	Yes	SE, BM, CAS
	Feminine and Empathetic Approach		
	Sense of Urgency		CAS
	Environmental Pressures		
Adaptive Strategy	Business Model Flexibility	Yes	CAS
	Staying Informed	Yes	CAS
	Frequent Communication		CAS
	Training and Innovation		CAS
	Sustainable Agility		CAS
	Quick Decision-making		CAS

- **Validated:** *The code was cited in all three sample groups (solar, water and waste).*
- **SE:** *Social Entrepreneurship Literature*
- **BM:** *Business Model Literature*
- **CAS:** *Complex Adaptive Systems Literature*

The table above (Table XVI) provides an overview of the comparison between the data and the relevant body of literature. It can be concluded from this analysis that most findings in the opportunity identification and evaluation category are supported by the social entrepreneurship literature. Furthermore, the findings of the adaptive strategy category are

also mostly supported by the complex adaptive strategy literature. No references could be found on the importance of environmental pressures as a construct of sensing mechanisms, as the meaning of this construct was inconclusive and of less value given the limited scope of the research.

However, the findings of the sensing category made a significant contribution to this body of knowledge with a special emphasis on the alignment and validation of this category between all three bases of theory. No references could however be found on the theme of feminine leadership and empathetic approaches as a sensing mechanism.

6.6.1 Opportunity Identification and Evaluation

In the Ecosystem Context Theme, the opportunity identification and evaluation category received the majority of references with all code groups within this category being validated by all three sectors (Dees & Anderson, 2006). The process of identifying opportunities within the network was the most dominant code group with ten respondents explaining how they evaluate opportunities within their stakeholder network. Water E, for example, seeks opportunities to create value for as many stakeholders within their network; a position that is supported by Saebi et al. (2018). Two respondents highlighted the value of stakeholder relationships within the network which enables opportunity identification and is also supported by Saebi et al. (2018). Although at a more fundamental level it is the market failures in the various sectors that also created opportunities for social entrepreneurs (Saebi et al., 2018). This has been validated by all three sectors with nine respondents emphasising this fact. This leads the analysis to the needs of society as a signal for social entrepreneurial opportunities.

The code group with the third highest frequency of references is the social needs that are a result of market failure which presents an opportunity for social entrepreneurs (Saebi et al., 2018). This has also been validated by all three sectors and eight respondents supported this fact. The solar industry specifically voiced a few concerns relating to social needs that are a result of unreliable power utility services. The social needs are also not limited to the wealthy. However, the opportunity evaluation process is not limited to market failures and social needs, but it also extends to identifying economic opportunities as there are market segments that are often neglected, (Saebi et al., 2018). This view has also been validated by all three sectors with seven respondents emphasising this fact. Although the process of identifying and evaluating opportunities is often a result of greater awareness of in ecosystem, this stands in contrast with Santos (2012) who posits that social entrepreneurship is not about creating awareness and that is should be the domain of social activism, but Santos acknowledges that this is a domain that need further research. However, the theme of awareness and open innovation as a key construct of modern business models is not only supported by recent

findings of Saebi et al. (2018) but also of complex adaptive systems literature (Groeger et al., 2019), therefore contributing to the social entrepreneurship literature. This was also validated by all three sectors as six respondents highlighted the importance of creating awareness through education and marketing as a key activity of opportunity identification and evaluation. This leads the discussion to what sensing mechanisms social entrepreneurs use to become aware of the ecosystem context (Groeger et al., 2019; Hinson & Osborne, 2015; Levin, 2002).

6.6.2 Sensing Mechanisms

Interestingly, a high level of competitive tolerance was found in the data. This was validated by all three sectors and was the second most frequently cited code group with nine respondents expressing this view, and two respondents emphasising a trust relationship with competitors; this is in coherence with all three theoretical bases of social entrepreneurship, business models and complex adaptive systems. The social entrepreneurship literature cites this as a logic of 'empowerment' as opposed to a logic of 'control and competitive advantages' (Santos, 2012). The business model cites this process as a descriptive element of open innovative business models (Saebi et al., 2018), and the complex adaptive systems literature refers to this as a logic of 'survival by perpetual novelty' as opposed to 'survival by sustainable competitive advantages' (Groeger et al., 2019). It can therefore be concluded that this fundamental insight creates the emergence of coherence between all three theoretical bases and posits a significant breakthrough in the understanding of the rules and logic of social entrepreneurship business models in complex environments.

Furthermore, an attuned leadership is also a key component of social enterprises to be able to gain insight and awareness of the ecosystem and was validated by all three sectors and eight respondents referred to this phenomenon. This view is also supported by the necessity of creating a broader learning environment from a social enterprise perspective; this finding is built on the abovementioned logic of awareness, empowerment, open innovation, and survival by perpetual novelty (Groeger et al., 2019; Saebi et al., 2018; F. M. Santos, 2012). This view has been validated by all three sectors with six respondents providing insight into what constitutes a learning environment but has now also found theoretical validation from all three theoretical bases.

Within the context of being attuned to and creating a learning environment for greater awareness in the ecosystem, three respondents alluded to the fact that females leaders could be a core competent element as a more empathetic approach to business enables the social enterprise and the network in general to have greater sensing capabilities. This position was nowhere to be found in the literature, but makes intuitive sense that an empathetic approach, often embodied by female leadership, might posit a novel and exciting avenue for further

research into female leadership as a core capability of complex adaptive business models within the context of social entrepreneurship, and perhaps even within the context of commercial entrepreneurship.

Some respondents also had a sense of urgency in solving for market failures which can be inferred as a heightened sensing ability that informs this urgency, as three respondents indicated. This is sometimes a result of the perceived viability of alternative solutions to market failure and leads to the analysis of the perceived ability of social enterprises to not only sense their contextual environment, but also to adapt to the changing dynamics of complex ecosystems. These findings are supported by a myriad of complex adaptive systems literature (Hinson & Osborne, 2015). It can also be concluded that the findings validate the findings of Chapter 1 that the environmental context of local government is indeed a complex ecosystem.

6.6.3 Adaptive Strategy

The ability of social enterprises to adapt to a complex ecosystem is a very important capability and has been validated by all three sectors. Most importantly, the most frequent citations within this category was in the code group that explained the need for business model flexibility and was found in the data of five respondents that have various views on this construct. The construct of adaptive business models is a fairly recent finding in the complex adaptive systems literature who attributed this classification to the technology-based businesses of the United States (Groeger et al., 2019). Although the general view of adaptation is supported by the literature (Dees & Anderson, 2006), specific references to adaptive business models could however not be found in the social entrepreneurship or business model literature. This finding is significant as it furthermore strengthens the proposition of attributing social entrepreneurship business models to complex adaptive systems.

The second most important adaptive capability was for the social enterprise to be informed and made aware of changing technology, regulations, market needs, customer needs, competitors, and changes in the industry. This was also validated by all three sectors and four respondents supported this view. The sheer scope of changing elements within the ecosystem not only validated the proposition that the social entrepreneurs within the context of this research study function in a highly complex environment, but that the social entrepreneurship business model needs to be aware and adapt to this rapidly changing environment which also evidently from the finding also forms part of the core strategy of these organisations (Groeger et al., 2019; Hinson & Osborne, 2015; Levin, 2002).

Furthermore, three respondents emphasised the fact that they need to have frequent communication with stakeholders to be able to adapt to changing circumstances. An informed and safe environment enables Waste C to make quicker decision which reinforces their

adaptability. Solar B also reiterated the need to be able to create sustainable agility and not to be adaptable as an end in itself; these findings are not common to the social entrepreneurship or business model literatures, but it is in full alignment with the current theoretical base of complex adaptive systems (Groeger et al., 2019; Hinson & Osborne, 2015; Levin, 2002).

6.6.4 Summary of the discussion of Research Question 5

This summary provides a high-level overview of the various constructs that were validated by all three sectors within the theme of the Ecosystem Context. This research question aimed to answer the question of how the business models of social entrepreneurs adapt to complex ecosystems.

It can be concluded that the data validated the claim of this research study that all three sectors function in complex environments. However, to be able to adapt to changing ecosystems, the social enterprise needs to be capable of sensing and adapting to complex ecosystems.

Most respondents were able to articulate the process of identifying and evaluating opportunities within their environment and it was the most frequently cited category within this theme. Although it was not a surprise that the social need as a result of market failure provided opportunities for social enterprises to create not only social impact but also to achieve economic gains, it was interesting to find that most respondents referred to the process of utilising network relationships as a mechanism to identify and evaluate opportunities. This view was supported by the need for greater market awareness and education which then create greater opportunities. These findings were mostly supported by the social entrepreneurship literature and support was found from literature on business models and complex adaptive systems, especially on the basis that network awareness provides a mechanism for greater opportunity identification and evaluation abilities (Groeger et al., 2019; Saebi & Foss, 2015; F. M. Santos, 2012).

Two dominant themes emerged from the data which emphasised the importance of sensing mechanisms and the adaptive strategies of the social enterprise. Although it is unsurprising from a superficial perspective, this provided some valuable insights into how the business models of social enterprises adapt to complex environments. Respondents frequently cited the importance of having an attuned leadership in the organisation that enables the emergence of a comprehensive learning environment which leverages the sensing opportunities within stakeholder networks. It is therefore not surprising that this view is supported by the special emphasis on competitive tolerance which enables the organisation to collaborate and learn, even from competitors. This tactic supports the emergence in the data which can be described as an adaptive strategy which was primarily based on the

capability of the organisation to be informed of changes in their ecosystem and that the business model of the organisation needs to be flexible to be able to adapt to changing ecosystems. Put together, these findings represent abundant support from the complex adaptive systems literature and most importantly, the majority of sensing capabilities found support from all three bases of literature which finally poses a significant breakthrough in the proposition that social entrepreneurship business models within the context of this research study can be construed as a complex adaptive system (Groeger et al., 2019; Saebi & Foss, 2015; F. M. Santos, 2012). The findings of this research question therefore validate the similar findings of research questions two, three and four and thereby unequivocally supports this concluding proposition. The theoretical implications of this proposition will be discussed in more depth in Chapter 7 as it will be translated to the context of Chapter 1 and will also be compared to the concluding conceptual framework of Chapter 2.

Chapter 7 – Conclusion and Recommendations

7.1 Introduction

This research study set out to understand social entrepreneurship business model design paradigms within the complex environments of local governments in South Africa. Although the current theory base suggests that social entrepreneurship ventures in local government, also known as public sector entrepreneurship, is severely limited by regulatory constraints (Leyden, 2016), the National Planning Commission stated (Chetty & Luiz, 2014):

> Although it is important to balance the political autonomy and exclusive service delivery mandate granted by the Constitution with the realities of limited financial and human-resources capacity, a flexible institutional model should allow continued political oversight of local service provision by municipalities, while taking advantage of other delivery models.

Social Entrepreneurs therefore have a mandate to alleviate the service delivery pressures on local government by engaging in robust action and creating alternative service delivery models, especially in the terrain of electricity distribution, water reticulation, and waste management services to communities. The research study has found that social entrepreneurs do indeed deliver on this mandate and that they actively see the private sector as a pivotal stakeholder in solving for market failures. The empirical research is however very limited and almost absent as to how business model designs within this context should account for the overwhelming complexity of local government services as there exists a paradox between the simple and causal-based business model and the complex nature of the enacted environment. It is believed that this research study has achieved its aim to close this gap.

The scope of this research was restricted to the social entrepreneurship perspective in local government services with a specific emphasis on electricity distribution, water reticulation, and waste management services not only to local governments but also to local government constituents. Because of the limited scope, the business model design paradigms from a social entrepreneurship perspective within the given context have yielded rich insights into how these entrepreneurs design for complexity and how the theories of complexity and complex adaptive systems might broaden the scope of the traditional business model design paradigms for social entrepreneurs. The relevant literature that explains the theory of complexity, business models and its application within the social entrepreneurship context, as well as design-thinking theories have been reviewed to form the theoretical base for this study and the findings have validated the theoretical alignment between these three bases of

literature. Therefore, this study makes a significant contribution to the body of knowledge on social entrepreneurship. The research aim has therefore been achieved in that the theories of complexity and complex adaptive systems have added to the theoretical base of business model design paradigms for social entrepreneurs and that a more coherent approach to business model designs within complex environments will potentially result in a conceptual framework. The development of such a framework is discussed in this chapter.

This chapter concludes by presenting the implications of the findings as they relate to the theoretical base and business, emphasising the research limitations and suggests domains for further research.

7.2 Research Findings

It can be concluded that the exploratory research has achieved its aim to answer the research problems as set out in Chapter 1. These findings are summarised in five research areas as set out by Chapter 3, namely: (1) to understand the rules and logic of social entrepreneurship business models; (2) how this model creates network value; (3) how stakeholders are included in this model; (4) how it creates social impact; and (5) how the model adapts to complex environments.

In summary, the findings show that especially the individual contexts of the social entrepreneur and the content and capabilities of the organisation are focal elements of social entrepreneurship business models. These business models create and capture value by virtue of its network interface and stakeholder management mechanisms and that private sector partnerships have a key role in this network. The social enterprise can be construed as a complex adaptive system that senses and adapts to the contextual environment so that it can create scalable and sustainable solutions. These findings are therefore significant and are summarised in more depth by the following subsections.

7.2.1 Conclusion: Research Question 1

What are the rules and logic of social entrepreneurship business models?

The literature review on social entrepreneurship concluded with a working definition of what constitutes a social entrepreneur:

> *Social entrepreneurship is an extension of the ontology, rules and logic of the entrepreneur, who designs a business model either within closed, single level; or open, multilevel parameters of value.*

However, the literature was not clear what informed the content of these rules and logics within the scope of this research background. It can be concluded that the findings not only validated

this working definition, but also provided some interesting insights into how these findings contribute to the literature.

It can therefore be concluded that the individual context of the social entrepreneur and the mission and vision of the social enterprise stand central to the rules and logic of social entrepreneurship (Sullivan Mort et al., 2003). The individual context is primarily informed by the individuals who associate themselves with their own definition of what constitutes a social entrepreneur (Kimmitt & Muñoz, 2018). The antecedents of self-identification are most often rooted in the values, motivations and ambitions of the individual (Yunus et al., 2010).

These individual contexts are consequently translated into the mission and vision of the organisation and are predominantly focused on not only achieving sustainable social impact (Santos, 2012), but to also provide economically viable solutions with ecosystem awareness and education often serving as secondary aims of the organisation.

The resources and capabilities of the organisation are predominantly configured around the access to economic and human resources (Dees & Anderson, 2006). It is especially from the perspective of the human resource strategy of the organisation that the social enterprise is able to execute on the mission and vision of the firm (Massa et al., 2018). Training and development initiatives are therefore crucial for the organisation to be able to create greater awareness and coherence within the organisation.

Furthermore, these resources are configured within open and flexible boundaries of the social enterprise and are supported by the paradigm of a business model design process which aims to involve as many stakeholders as possible to create a network of empowerment and embeddedness (Santos, 2012). The business model has a strong corporate governance logic which facilitates greater transparency and trust, thereby reinforcing the aims of creating greater strategic awareness. The strategic intent of the organisation therefore seeks to not only create alignment between the mission, resources and processes, but also to create an adaptive capability that enables the alignment of the business model to be flexible (Dees & Anderson, 2006). This adaptive capability is strongly rooted in an innovation mindset, which aims to develop alternative solutions to market failure. These findings give the first glimpse into what could be described as a complex adaptive business model, providing valuable insights into a new paradigm that governs the rules and logic of social entrepreneurship business models. In conclusion, the research study successfully answered this research question.

7.2.2 Conclusion: Research Question 2

How does the business model of the organisation create network value?

The literature review on business models concluded with a working definition of what constitutes a business model:

> *The business model is a conceptual framework that represents a dynamic system of adaptive network interface configurations that connects the organisation to stakeholder species through which value is created, delivered and captured.*

However, the literature was not clear on exactly how the business model as an adaptive network interface creates, delivers and captures value within the scope of this research background. The findings not only validated this working definition, but also provided some interesting insights into how these findings contribute to the literature.

It can be concluded that a network interfacing or stakeholder management mechanism forms an integral part of the social entrepreneurship business model. The primary aim of such a mechanism is to create a stakeholder relationship network which is built on trust and transparency (Hlady-Rispal & Servantie, 2018; Santos, 2012). These relationships are managed through mechanisms that encompass a wide variety of communication mechanisms of which formal engagements with valuable relationship is regarded as paramount. Such activities are typical of complex adaptive systems (Hinson & Osborne, 2015; Levin, 2002).

Moreover, the network interface provides a platform through which value is created, delivered and captured. Most importantly, the value creation process stands at the centre of these activities. The stakeholder network therefore provides an important mechanism for the social enterprise to become aware of the needs, challenges, and opportunities within the network from a value capturing process and is akin to the design-thinking or customer-centricity theories. The theoretical position of design-thinking also finds support in other business model design literature that emphasises the alignment between the business model and its ecosystem and stakeholders (Adner, 2016; Casadesus-Masanell & Ricart, 2011; Snihur et al., 2018; Teece, 2018). This enables the social entrepreneur to create social value and stakeholder value.

Two subcategories of value creation highlighted the importance of product value and service value within this context. Product value is primarily focused on providing reliable and sustainable solutions, value for money, and solutions that are simple and understandable. Service value on the other hand is focused on valuable customer engagements that increase the feeling of trust and a transparent relationship, thereby increasing the risk tolerance of the network in which innovation and adaptation can flourish.

The second theme of translating value through the stakeholder network is by capturing value. The value capturing process is not exclusively focused on economic gains and encompasses brand equity and social equity.

Lastly, the theme of Adaptation featured very prominently and contributed significantly to the body of knowledge. The adaptive nature of the stakeholder network interface provides an interesting dynamic to the domain of social entrepreneurship business models as the findings validated the notion of evolving and adaptive business models (Groeger et al., 2019). This further strengthened the proposition of describing social enterprises as complex adaptive business models which provides a framework which answers the research question into how the business model can be designed to create network value. In conclusion, the research study successfully answered this research question.

7.2.3 Conclusion: Research Question 3

What is the role of stakeholders in the business model of the organisation?

The literature review on business models also concluded with the role of stakeholders in the business model:

> *The new paradigm of business model design emphasises the need for collective engagement at a systems level between as many stakeholders as possible.*

However, the literature was not clear on how these stakeholder relationships are manifested within the scope of this research background. It can be concluded that the findings not only validated this working definition, but also provided some interesting insights into how these findings contribute to the literature.

From a stakeholder perspective, the role of institutions provided very valuable insights. Not only has the role of government been largely ignored because of broken trust relationships, but consistent with the literature, the role of the private sector has been articulated as a central pillar in the advancement of alternative solutions to market failure. This is in coherence with the dominant logic of social entrepreneurship which holds that it is in the domain of social entrepreneurs that neglected problems with positive externalities are solved (Santos, 2012).

However, contrary to the cynicism against Public sector responsibilities, the need of a collective responsibility has been validated by the findings. This brings the role of civil society in perspective, as social entrepreneurs actively try to influence the norms, values, cultures and behaviours of society as it relates to legacy structures of market failures. This stands in contrast to the logic of embeddedness as described by Hlady-Rispal and Servantie (2018),

although the rest of the data firmly reiterated and supported the logic of embeddedness in the network.

As discussed above, the role of private sector partnerships featured very prominently in the findings. The most important stakeholders in this network seemed to be capital providers, customers, competitors, and suppliers. However, the quality of these relationships is deemed extremely important to social entrepreneurs and is supported by complex adaptive theories which hold that it implies a process that selects a subset of network interactions for replication and enhancement (Levin, 2002).

Partnerships with local government were also posted as an important stakeholder within the network as much of the public service delivery mandates vest in local municipalities. Civil society relationship also surprisingly featured less prominently than expected, although it has still been validated as in important stakeholder from the perspective of stakeholder network embeddedness and awareness for greater learning and adaptation.

Lastly, an overarching theme in the research question about the role of stakeholders was the significance of legislation and regulations. This is interesting and provides a deeper understanding of the importance of the value network of the business model as it is to some extent moderated by 'rules of interaction' (Levin, 2002), a common trait of complex adaptive systems. This finding is therefore quite significant as it strengthens the proposal of describing social entrepreneurship as a complex adaptive system and provides a conceptual framework in which the role of stakeholders in social entrepreneurship business models can be better understood. In conclusion, the research study successfully answered this research question.

7.2.4 Conclusion: Research Question 4

How does the business model of the organisation create social impact?

The literature review on business models also concluded with a working definition on how the business models of social entrepreneurs' impact society:

> *Social impact is in essence a relative change in human well-being and can be measured on the micro-, meso- and macro-levels of analysis.*

However, the literature was not clear on how social entrepreneurs measure social impact and company performance within the scope of this research background (Zahra & Wright, 2016). It can be concluded that the findings not only validated this working definition, but also provided some interesting insights into how these findings contribute to the literature.

It can therefore be concluded that social entrepreneurs have very elaborate and rich methods for measuring social impact and company performance. Most importantly, social

entrepreneurs aim to achieve a relative change in human well-being and was the most frequently cited discussion point within this research question and the theme of measuring financial performance featured second. Some of the other interesting methods of measurement can be described as the ability to the social entrepreneur to provide alternative solutions to government services, an indication that such services are often a cause of market failure. However, many realised that it is unsustainable to imagine a solution which dramatically solves market failure and that it is a much slower process that often requires a balanced approach which is analogous of the 'encroachment' paradigm.

The most interesting contribution of this research question is the findings that relate to emergent change. This theme vividly explained how social entrepreneurs often compare the process of creating social impact to the process of 'baking a cake', providing that the ecosystem should hold the necessary conditions for change or impact to emerge. The success stories of social entrepreneurs often illustrated just that, i.e. that the elaborate contextual nuances of the business environment can sometimes only be accurately measured by rich and deep qualitative methods as the arbitrary methods often fail to achieve this aim. This postulation is in perfect coherence with the theory of complex adaptive systems (Groeger et al., 2019) and therefore contributes significantly to the body of knowledge of social entrepreneurship, further strengthening the previous findings that describe social entrepreneurship as a complex adaptive system.

The concluding sections of this research question discuss the emergence of the themes of sustainability and scalability. Although the sustainability of the venture and the solutions that which it provides are relatively self-explanatory, the importance of creating solutions for constituents to become independent of government services, posits an interesting emergence of changing rules of interaction. Furthermore, the sustainability of the network as a construct also gives credence to the abovementioned concluding remarks of attributing ecosystem logics to the rules of how social entrepreneurs create impact, as such a network in all fair judgement creates the enabling architecture for social entrepreneurship business models to become adaptive and sustainable (Santos, 2012).

Lastly, the findings of scalability provided the most insightful discoveries which stand in stark contrast to the dominant logic of social entrepreneurship academia (Dacin et al., 2011). Respondents almost spontaneously, without a quiver, made the case for creating impact at the biggest scale possible. Interestingly, by sustainably managing the tension between social and financial aims, these capabilities enable the organisation to scale the solution of complex problems. This adds an interesting dynamic to how social entrepreneurs construe the process of measuring impact and performance, especially within the context of complex ecosystems.

The paradigm of scalability therefore adds to the body of knowledge by shifting the logic of how impact is measured by social entrepreneurs. In conclusion, the research study successfully answered this research question.

7.2.5 Conclusion: Research Question 5

How does the business model of the organisation adapt to complex ecosystems?

The literature review on complex adaptive systems concluded with a working definition on how business models adapt to complex environments:

> *The complex adaptive business model therefore needs to be supplemented by a design process approach that is cyclical, iterative and dynamic in nature.*

However, the literature was not clear on what mechanisms social entrepreneurship business models use to enable them to adapt to complex environments such as those of this research background. It can be concluded that the findings not only validated this working definition, but also provided some interesting insights into how these findings contribute to the literature (Dees & Anderson, 2006).

The conclusion was that the ends of adaptation should always facilitate greater value creation and value capturing to sustain the business model. The process of identifying and evaluating opportunities has therefore emerged as the most dominant theme of this research question. Most importantly, the whole notion of business models as complex adaptive systems rests on the premise that the environmental context in which the business model is designed can be validated as a true complex system (Groeger et al., 2019). Although this has been determined by Chapter 1 and 2, the data also validated this position unequivocally.

Given this premise, social entrepreneurs are mostly enabled by stakeholder networks to successfully identify opportunities for value creation and value capture. The market failure conditions also create abundant conditions for such activities to emerge and further enables social entrepreneurs to sense social needs and economic opportunities. These social entrepreneurs therefore reiterate the crucial ability of the enterprise to be able to create market awareness and education, which is analogous to the previously mentioned necessity of having insight and awareness throughout the system. The theme of awareness and open innovation as key constructs of modern business models is not only supported by recent findings of Saebi et al. (2018), but also of complex adaptive systems literature (Groeger et al., 2019). This adds an interesting dynamic to the already growing position of complex adaptive business models.

One of the other dominant themes of this research question is the sensing abilities of the social entrepreneur (Saebi et al., 2018). As concluded previously, the premise of complex

environments requires highly attuned sensing abilities and is supported by the emergence of attuned leadership capabilities in the firm which very surprisingly can be inferred as a quality similar to that of empathetic female leadership. It can therefore be concluded that empathetic and attuned leadership styles will become increasingly important for businesses that operate in complex environments. Furthermore, the logic of embeddedness and empowerment creates a psychologically safe environment for all stakeholders and creates an emergent phenomenon of 'learning environments' which strengthens the social enterprise's ability to sense and evaluate opportunities and reiterates the abovementioned conclusion of awareness as a core capability. These 'attuned leaders' also have some sense of urgency and is a typical trait of complex adaptive leadership theories. The importance of trusting relationships can therefore not be overemphasised as illustrated by the validated finding that many respondents have a surprisingly high tolerance for competitors.

Lastly, the most important finding is that the flexibility of business models is a core part of the adaptive strategies of social entrepreneurs. However, social enterprises must have a heightened sense of awareness for the business model to be adaptive. This can be achieved by standardised and frequent communication mechanisms, training and innovation capabilities, and quick decision-making competencies. These traits will enable the social enterprise not to follow the logic of survival by sustainable competitive advantages, but rather to follow a logic of survival by sustainable adaptability (Groeger et al., 2019). It can therefore be concluded that research question five validated the propositions of the previous findings that the social entrepreneurship business model is indeed a complex adaptive business model, and that the rules and logic of perpetual adaptability inform the logic of business model designs that are able to adapt to complex ecosystems (Groeger et al., 2019; Hinson & Osborne, 2015; Levin, 2002). In conclusion, the research study successfully answered this research question.

7.3 A Proposed Framework

This section presents a recommended theoretical framework for social entrepreneurs to design business models that can adapt to complex environments based on the findings, discussions and conclusions of the research questions. This framework is an adaptation of the proposed conceptual framework in Chapter 2 (Figure V) and has been developed and validated by the empirical findings of this research study.

The goal of qualitative research should be to attempt to achieve transferability of the findings to other contexts (Bloomberg & Volpe, 2009). However, the small sample size that accommodates explorative qualitative research unfortunately impedes the generalisation of the findings that were extracted from the data analysis (Bloomberg & Volpe, 2009). However,

based on the rich findings of this research study which yielded a new paradigm of how social entrepreneurship business models should be designed within complex environments, the following diagram provides a framework for developing complex adaptive business models (Figure VII). However, it is important to understand that the following diagram is an adapted version of the concluding conceptual framework that was developed and depicted in Chapter 2 (Figure V), and has been expanded by virtue of the research findings that contributed to the body of knowledge. The complex adaptive business model canvas below (Figure VII) provides an overarching framework that incorporates all the validated findings that emerged from this research study and will be discussed in depth by the following subsections.

Figure VII - The Complex Adaptive Business Model Canvas

LOGIC	RULES	BUSINESS MODEL ELEMENTS		
	Sustainable & Scalable	**ECOSYSTEM IMPACT ANALYSIS**		
		Individual	Organisational	Institutional
	Complex Adaptive Alignment	**ECOSYSTEM CONTEXT**		
		Empowerment	Embeddedness	Awareness
	Rules of Interaction	**STAKEHOLDER NETWORK**		
		Private Sector	Public Sector	Civil Society
	Product & Service Value Sensing & Adaptation	**NETWORK INTERFACE**		
		Value Delivery	Value Capture	Value Creation
	Sensing Mechanisms & Adaptive Strategy	**SOCIAL ENTERPRISE**		
		Individual Context Mission & Vision	Resources & Capabilities Human Resource Strategy	Structure & Processes Innovation Strategy

7.3.1 Superordinate Logic

The superordinate logic of the complex adaptive business model canvas is the permeable network of trust which is represented on the left-hand side column and the arrow represents these dynamic ‘open borders’ between the elements. These interactions are governed by a logic of perpetual adaptation which underpins the necessity of ‘open innovation’ and adaptation between the different levels of the business model canvas from the social enterprise in its basic form at the bottom, to the ecosystem impact at the highest unit of abstraction, an outcome which emerges because of the adaptative alignment in the network interface between the social enterprise and the ecosystem context. The rules of these elements will be discussed in the following subsections in an increasing order of abstraction.

7.3.2 Business Model Element Rules

The rules that the govern the various business model elements are tightly linked to the underlying logic of the complex adaptive business models. The content specific elements of each of these five business model elements should therefore always be viewed through the lens of its governing rules and logic.

7.3.2.1 Social Enterprise

Essentially, the social enterprise should adopt an adaptive strategy at its core and should also develop its sensing capabilities as a key enabler for creating a network of trust. This network of trust will stimulate the alignment of organisational level elements to the superordinate logic of perpetual adaptation.

Furthermore, the social enterprise lies at the bottom canvas, as it encapsulates the process-based logic of the social entrepreneurship business model and can be regarded as the DNA of the organism. The nucleus of this organism is the individual context of the social entrepreneur, who creates the content through its vision and mission necessary for the venture to sustain itself. Key to this organisation is the resources and capabilities, such as capital and human resources embody the creative force of the organism. The structures and processes of the organism are aligned with the DNA of the organisation and seek to create a 'loose alignment' that enables the organisation to develop heightened sensing abilities which enables the innovation capability that is needed to survive within the logic of perpetual adaptability.

7.3.2.2 Network Interface

The network interface is a critical path of alignment and adaptation. This fundamental mechanism of interaction governs the content of product and service value propositions of the social enterprise and should be coherent with the superordinate logic of perpetual adaptation. How the social enterprise interfaces with its stakeholder network is the key for the creation of a 'network of trust'.

Moreover, the social enterprise, through the growing dynamic capabilities that vests in the DNA of the organisation, starts to develop network interfaces that serves as the 'nervous system' which communicates and translates the activities of the organisation. The content of this sensing mechanism emerges as variances in quality and quantity of value creation, value capturing, and value delivery. Product values and service values are subsets of the value creation process. The most important quality of this sensing mechanism is the adaptive capabilities of the network interface in that it implies a process that selects a subset of network interactions for replication and enhancement (Levin, 2002).

7.3.2.3 Stakeholder Network

The stakeholder network of the social enterprise is governed by rules of interaction. The content of these rules is often determined by formal forms such as regulations and legislation but can also be governed by implicit norms and values of stakeholder groups. The specific nuances of these rules of interactions are therefore often dynamic and stakeholder specific and can also be influenced and modulated by the network of the social enterprise (Levin, 2002).

In addition, these stakeholders can be grouped into private, public, and civil. Although the private sector has the highest burden of solving market failures by virtue of encroachment, it is through the logic of empowerment and embeddedness that the social enterprise can adapt to the changing rules of interaction for the future advancement of its mission and vision.

7.3.2.4 Ecosystem Context

It logically follows that because of the complex nature of the value network of the social enterprise as expressed by the previous subsections, that the ecosystem context should inform the strategy of the social enterprise, that the mechanisms of interaction will enable greater sensing and adaptive capabilities of the social enterprise and that a network of trust between the social enterprise and its stakeholders are paramount. However, should this critical path be disrupted, then the social enterprise will not be able to sense and adapt to the changing ecosystem context. The rule of adaptive alignment therefore governs the *open borders* between macro-level institutions and the logic of empowerment and embeddedness through the stakeholder network can be strengthened by having heightened sensing abilities to understand the context of the ecosystem.

Most importantly, consistent with the rules of empowerment and embeddedness, the social enterprise should foster awareness and trust throughout the stakeholder network, which will be a critical capability for the social enterprise to create complex adaptive alignment in the ecosystem, and by achieving that will strengthen its abilities to align the organisation, sense the changing ecosystem, and consequently re-align or adapt to these changing environments. It is important to understand that the scope and depth of complexity is vast and that changes in the ecosystem can happen in unexpected domains anywhere in the network.

7.3.2.5 Measuring Ecosystem Impact

Lastly, the rules of measuring ecosystem impact are governed by the achievement of sustainability and scalability. The achievement of such outcomes is paramount to the ontology of social entrepreneurship business model and could be an indication that the social enterprise has achieved its mission. This mission as discussed in previous sections is rooted in the rules

and logic of the social entrepreneur and is the DNA of the specific business model design paradigm.

It is therefore crucial for the social enterprise to measure the outcomes of the business model on individual, organisational, and institutional levels of analysis and are also present in the other four business model elements which aids the coherence of a complex adaptive approach to a business model analysis. Most importantly, the social enterprise should seek to achieve emergent change and can be measured by deep and rich qualitative research methods that are manifested in social archetypes, such as storytelling. Finally, the outcomes of these measurement and sensing activities should yield insights into the sustainability of the network and the scalability and scope of the impact that is achieved. By being aware of the complex tensions between social and financial aims, these innovative and adaptive capabilities will enable the organisation to create feedback loops that are self-reinforcing within this context. Only then will the complex adaptive business model be truly sustainable and scalable.

However, although the data suggested that most respondents subscribe to the rules of sustainability and scalability, it could not be validated if these outcomes are the result of complex adaptive alignment. A comprehensive longitudinal study should therefore be conducted to validate such a position and could even substantiate a Doctoral research proposal. Regardless, on the other hand it would be an extraneous undertaking to conduct a quantitative study to statistically test and prove that such a relationship exists because of the fact that ecosystem impacts are in their nature a complex and emergent phenomenon. The qualitative limitations of these findings and recommendations should therefore be taken into account.

7.3.2.6 Integration and Implications

The key findings that emerged from the perspective of the initial conceptual framework is that one can describe the evolution of the business model construct as one that evolves from a linear pipeline model to a two-dimensional business model canvas to a multi-level and multi-stage phenomenon, and then to a cyclical and iterative process as concluded by the conceptual framework. It finally entails an integrated complex adaptive set with five core elements which are interrelated, dynamic, and adaptable as illustrated by the concluding theoretical framework (Figure VII). The abovementioned elements of the complex adaptive business model should therefore not be seen as mutually exclusive, and not as a process-based diagram, but rather as a network akin to a biological organism (Massa et al., 2018). This stands in contrast to the initial conceptual framework that was developed in Chapter 2 (Figure V) and rather emphasises an integrated approach. A cyclical process might limit the adaptability of the organisation as each subcategory of the elements has an inherent influence

on the coherence of the rest of the system which is in alignment with the dominant theories of complex adaptive systems (Groeger et al., 2019). This paradigm is also implicitly supported by social entrepreneurship academics who hold that the social enterprise is intrinsically multidimensional (Sullivan Mort et al., 2003) although the literature was not clear how this multidimensionality is manifested from a theoretical perspective.

In summary, the research study achieved its goal to satisfy the research questions and to create a deeper understanding of how social entrepreneurs address the identified research problem as stated in Chapter 1. Most importantly, social entrepreneurship has not only emerged as a crucial institution for addressing the market failures as identified in the research background in Chapter 1, but the findings and conclusion of this study have also added to the body of knowledge into how social entrepreneurs can shift their business model design paradigms. This new design paradigm is rather consistent with the nascent academic domain of complex adaptive business models and it can be concluded that social entrepreneurship is indeed a complex adaptive business model and that the concluding framework (Figure VII) posits a very interesting and exciting theoretical model that can enable academics and business practitioners to synthesise the design paradigms of social enterprises. It is envisaged that this theoretical paradigm might enable greater coherence in the rules and logics of social entrepreneurs and that it could also significantly increase their propensity to not only act on social and economic opportunities, but to also create sustainable and scalable ventures that can truly impact the trajectory of market failures within the context of local governments. The research study therefore succeeded in creating a fairly exhaustive understanding of how the research problem as stated in Chapter 1 can be modelled.

The implications for business practitioners who function within complex business environments should therefore design business models that are consistent with the theory of complex adaptive business models and can be summarised as follows (Groeger et al., 2019):

- The paradigm of business models should shift away from rigid structures with sustainable competitive advantages towards a new paradigm of survival by virtue of perpetual novelty and adaptation.
- The organisation should not be structured as a hierarchical pyramid, but rather as a fluid mix of self-organising organisms that have a nucleus with a guiding DNA, and a sensing network that aids ecosystem awareness through constant flows of information, resources and knowledge.
- Rules of interaction should not be determined by archaic policies, but rather by an adaptive set that self-selects a subset of network interactions for replication and enhancement.

- Strategic alignment should not be guided and imposed by leadership but should rather emerge organically through ‘adaptive alignment’ that can be executed autonomously by empowered and embedded agents.
- The environment is not stable or static but is rather constantly and rapidly changing in all corners of the network. Robust trust relationships that emphasise constant sensing is therefore paramount.

7.4 Limitations

The limitations of this study derived from the fact that it was exploratory in nature and that the transferability of the findings is therefore limited. These limitations can be summarised as follows:

- The subjective nature of qualitative research that implies researcher biases.
- The complex and confusing nature of the body of knowledge relating to social entrepreneurship, business models and complex adaptive systems posed some cognitive challenges to the respondents, thereby impeding the translatability of the findings.
- The research context to market failure in local governments of South Africa limited the transferability to other contexts.
- The small size of the social entrepreneurship population in general.
- The small size of the social entrepreneurship sample group within the three sectors of renewable energy, water and wastewater management, and in waste management.
- The time constraints of cross-sectional research methodologies.
- The possibility that the literature review did not sufficiently capture all the relevant literature relating to the scope of the research although the aim of the literature review was to be as exhaustive as possible given the theoretical delimitations.

7.5 Suggestions for Further Research

Given the findings that were derived from this research study, the following potential domains have been identified for further research:

- A complex adaptive systems approach to commercial entrepreneurship business model designs in South Africa.
- The complex adaptive business model canvas should be tested quantitatively by determining whether social entrepreneurs follow the conceptual constructs as articulated by the framework.
- Testing of the business model design paradigms of social entrepreneurs within other environmental contexts, such as other developing countries.

- Exploring the possibility of commercial enterprises that use complex adaptive business model approaches to create sustainable competitive advantages.
- A quantitative study that tests the comparative financial and/or social success rates of social enterprises that apply complex adaptive business model strategies.
- Exploring the possibility of using complex adaptive business model design processes within the theoretical contexts of open innovation.
- Doctoral study – to study and explore the relationship between the adoption of complex adaptive business models of social enterprises and their ability to achieve sustainable and scalable impact in local government ecosystems.

7.6 Conclusion

This research study resulted in insightful discoveries into the business model design paradigms of social entrepreneurs that function within complex environments, such as those of local government market failure environments in South Africa.

Although an explorative approach was conducted, the qualitative interviews with 15 respondents, five from each sector in the sample group, provided rich insights that could be empirically validated through triangulation, although it has not been definitively validated by quantitative methods and which could pose an avenue for further research. The study yielded exciting findings that emphasised the value of shifting the design paradigm of business models towards a theoretical frame that aligns praxis with academia. Complex adaptive systems theory provided an invaluable framework for analysing the research problem and has achieved the research aims beyond expectations. One of the key findings has shown that the manifestation of the social business at heart vests in the rules and logic of the social entrepreneur. Therefore, if the social entrepreneur can grasp the theoretical context of complex adaptive business models, it could potentially provide a new and exciting avenue for entrepreneurial paradigms. Finally, the five research questions yielded emerging themes that were aligned with the conceptual framework that was developed by triangulating three different bases of theory and consequently not only validated this conceptual framework but yielded deep insights that strengthened and developed the proposed framework into a testable and viable frame of business model design-thinking. This framework could provide a framework that may prove to become an invaluable tool for organisational development practitioners, executive managers, and entrepreneurs to develop sustainable business models. Lastly, it is envisaged that these findings could also warrant further exploration by virtue of a Doctoral research proposal to explore the relationship between the adoption of complex adaptive business models of social enterprises and their ability to achieve sustainable and scalable impact in local government ecosystems.

Appendix A: Ethical Clearance Approval

Gordon Institute of Business Science
University of Pretoria

10 July 2019

Weber Johann

Dear Johann

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

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Appendix B: Interview Schedule and Consent Form

Informed Consent Form

I am conducting research on social entrepreneurship business model design paradigms and am trying to find out more about how companies design their models for complex environments. Our interview is expected to last 45 minutes to 1 hour, and will help us understand the process, enablers and challenges of sustainable social entrepreneurship ventures within the electricity distribution, water reticulation and waste management sectors of local governments in South Africa. **Your participation is voluntary, and you can withdraw at any time without penalty**. All data will be reported anonymously with identifiers used in place of your and your company's name(s). If you have any concerns, please contact me or my research supervisor. Our details are provided below.

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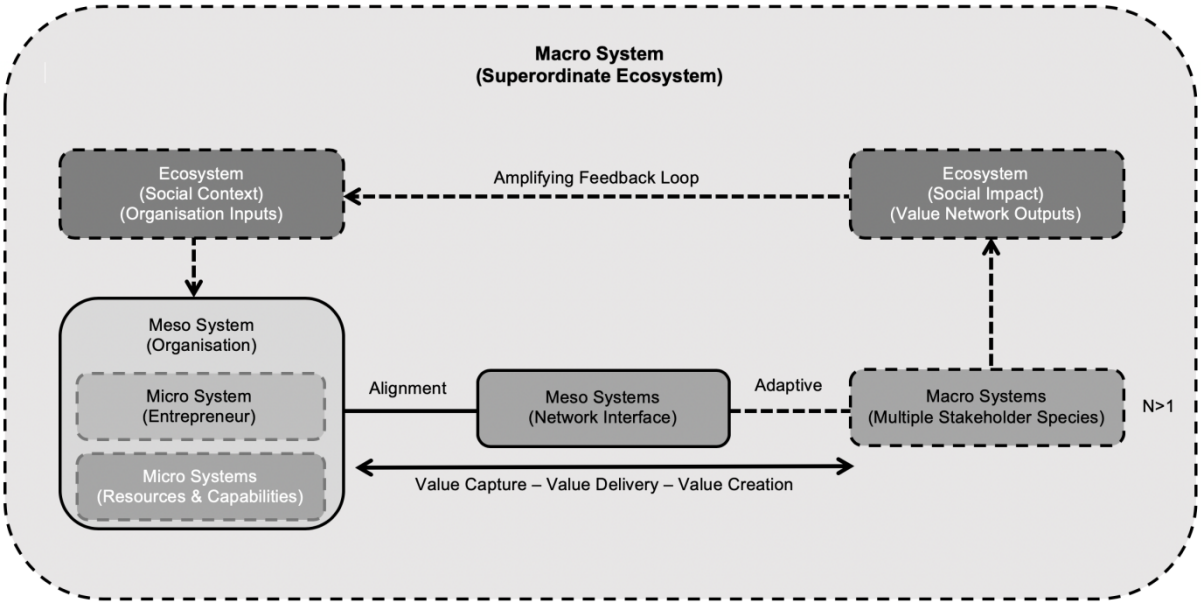
Signature of participant: _____

Date: _____

Signature of researcher: _____

Date: _____



Stakeholder	Value Creation	Value Delivery	Value Capture	Network Interface

Semi Structured Interview Questions

A) Context

- What is the Mission of your organisation?
- What in your view is the role of institutions in addressing the identified social issue?
- How did you involve potential stakeholders into the design of your business model?

B) Social Entrepreneur

- Do you see yourself as a social entrepreneur?
- What are your values?
- What motivates you?
- What are your ambitions?

C) Social Entrepreneur Metacognition

- How did you identify and evaluate the economic opportunities of your environment? How did you identify and evaluate the social needs of your environment?

D) Resources & Capabilities

- What are the core resources and capabilities of your organisation?

E) Social Enterprise

- Explain the design of your business model?
- What process did you use to design your business model?
- Explain the strengths and weaknesses of your business model?
- Explain the opportunities and threats of your business model?
- Explain your corporate governance mechanisms?

F) Stakeholders

- Who are your stakeholders or partners within your business model?

G) Network Interface

- Explain the how your organisation creates, captures and delivers value within its stakeholder network?
- How does the organisation manage stakeholder relationships?

H) Impact

- How do you measure the social impact of your venture?
- How do you measure performance of your venture?
- What are some of the social success stories of your organisation?
- What are some of the financial success stories of your organisation?

I) Alignment

- What is the strategy of your organisation?
- How do you create alignment in your business model?

I) Adaptive Space

- How do you adapt to the changing needs in your network?
- How do you manage the complex tension between social value and economic value?

Appendix C: Code Book – Conceptual framework (Figure V)

Theme	Categories	Codes
T1: Social Enterprise	Individual Context	Values
		Metacognition
	Resources & Capabilities	Capital
	Organisational Structure & Processes	Alignment
		Mission & Vision (sustainable impact)
		Company Strategy
		Business Model Design Process
T3: Stakeholders	Private Sector Relationships	Customers
	Public Sector Relationships	Local Government
		National Government
	Civil Society Relationships	Communities & Beneficiaries
	The role of institutions	Government
		Private Sector
		Civil Society
T2: Value Network	Network Interface / Stakeholder Management	Stakeholder Relationships (to create a network)
		Trust Network and Psychological Safety
	Value Creation	Product Value (value for money)
		Service Value (valuable customer engagement)
		Social Value
		Design Thinking / Customer Centricity
	Value Delivery	Distribution Channel
	Value Capturing	Economic Gains
	Adaptation	Business Model Redesign and Adaptation
T4: Ecosystem Impact	Measuring Impact & Performance	Social vs. Financial Tension
		Sustainability (of the solution)
T5: Ecosystem Context	Sensing Mechanism	Attuned Leadership
		Complex Ecosystem
		Sense of Urgency
	Opportunity Identification and Evaluation	Social Need
		Economic Opportunities
		Market Failure

Appendix D: New Codes – Conceptual framework (Figure V)

Theme	Categories	Subcategories	Codes
Social Enterprise	Individual Context		Motivations
			Ambitions
			Association
			Religious Intent
	Resources & Capabilities		Technical Skills
		Innovation	Innovation (adaptive capability)
			Innovation (alternative solutions)
			Innovation (network collaboration)
			Big Data
			Complex Skillsets
			Intellectual Property
			Locallization
			Family Values
	Organisational Structure & Processes	Human Resource Strategy	HRS (training and development)
			HRS (outsourcing and collaboration)
			HRS (social culture fit)
			Organisational Culture
		Mission & Vision	Mission & Vision (self-reliance)
			Mission & Vision (economically viable solutions)
			Mission & Vision (market leading growth)
			Mission & Vision (awareness and education)
			Corporate Governance
			Culture of Excellence
Stakeholders	Private Sector Relationships		Suppliers
			Competitors
			Contractors
			Capital Providers
			Property Owners
			Subsidaries
	Public Sector Relationships		Regulators
			Toxic Politics & Corruption
			Universities
	Civil Society Relationships		Community Leaders
	The role of institutions	Legislation & Regulations	Legislation & Regulations (barrier to entry)
			Legislation & Regulations (risk management)
			Legislation & Regulations (enforcement)
			Legitimacy
			Norms & Values
			Culture & Behaviours
			Collective Responsibility
Value Network	Network Interface, Stakeholder Management		Contracting
			Formal Engagment
			Communication Mechanism
			Relationship Broker
			Hope & Faith
	Value Creation	Product Value	Product Value (simple and understandable)
			Product Value (modular and scalable)
			Product Value (trustworthy, reliable and sustainable)
		Service Value	Service Value (after sales support)
			Service Value (trust relationship with low risk)
			Stakeholder Value
	Value Delivery		Pull Model
	Value Capturing		Brand Equity
			Social Equity
	Adaptation		Business Model Evolution
Ecosystem Impact	Measuring Impact & Performance		Change in Human Condition
			Financial Performance
			Volume & Scope of Impact
			Customer Satisfaction
		Sustainability	Sustainability (of the venture)
			Sustainability (of the network and industry)
			Sustainability (self-reliance and independance)

			a Balanced Approach / Shared Vision
			Resiliance
			Compliance Tracking
			Community Satisfaction
			Emergent Change
			Alternative to Government Serices
			Success Stories
			Reducing Carbon Footprint
			Internationally Relevant
Ecosystem Context	Sensing Mechanism		Learning Environment
			Feminine / Empathetic Approach
			Competitive Tolerance
			Environmental Pressures
	Opportunity Identification and Evaluation		Network Value
			Market Awareness / Education
	Adaptive Strategy	Adaptative Strategy	Adaptative Strategy (staying informed)
			Adaptative Strategy (business model flexibility)
			Adaptative Strategy (frequent communication)
			Adaptative Strategy (training and innovation)
			Adaptative Strategy (sustainable agility)
			Adaptative Strategy (quick decision making)

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