

How the social entrepreneurship business model designs in South Africa create value: a complex adaptive systems approach

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Abstract

Purpose: This paper aims to understand social entrepreneurship (SE) business model design to create values whilst undertaking public service delivery within the complex environments of local governments in South Africa.

Design/methodology/approach: Face-to-face semi-structured interview was conducted with 15 purposively selected social entrepreneurs in Gauteng and Western Cape provinces. The interview guide consisted of main themes and follow-up questions. Themes included SEs' general history, the social business model; challenges faced and how these were overcome; scaling and growth/survival strategies. These enabled the evaluation of SEs in terms of identifying key criteria of affordability, availability, awareness and acceptability, which SEs must achieve to operate successfully in low-income markets. Social enterprise owners/managers within the electricity distribution, water reticulation and waste management services sectors were surveyed.

Findings: Most respondents focus on building a network of trust with stakeholders, through communication mechanisms that emphasize high-frequency engagements. There is also a strong focus on design-thinking and customer-centric approaches that strengthen value creation. The value creation process used both product value and service value mechanisms and emphasized quality and excellence to provide stakeholder, as well as societal value, within their specific contexts.

Practical implications: This study builds upon other research that emphasizes SEs' customer-centric approaches to strengthen value creation and on building a network of trust with multiple stakeholders. It contributes to emphasizing the business paradigm shift towards bringing social values to the business practice.

Social implications: Social good, but resource providers are demanding more concrete evidence to help them understand their impact (Struthers, 2013). This is because it is intrinsically difficult for many social organizations to document and communicate their impact in more than an anecdotal way. The research has contributed to the understanding of how SEs can provide evidence of value creation.

Originality/value: This study contributes to the understanding of how business models are designed to create value within the context of the overwhelming complexity of local government services in South Africa.

Keywords: Business model, Value creation, Local government, Complex adaptive system, Social entrepreneurship, Public services

1. Introduction

There is increasing interest in and engagement with social entrepreneurship (SE) and innovation in South Africa, as mechanisms for addressing complex sustainable development problems. The growing international and domestic research on SE in South Africa (Karanda and Toledano, 2012) is building on initiatives such as the creation of learning hubs for knowledge exchange (e.g. the Bertha Centre for Social Innovation and Entrepreneurship at the University of Cape Town); and the formation of practitioner networks (e.g. The African Social Entrepreneurs Network).

SEs are widely celebrated as a mechanism to address societal issues that both the private and public sectors fail to solve, not only in South Africa but also globally. They are an intractable necessity if society wants to achieve its sustainable development goals (Bewayo and Portes, 2016). They serve as a construct that facilitates the interactions between the entrepreneur and its specific social context (Bewayo and Portes, 2016). When business models are designed to achieve higher sustainability, the processes involved inevitably lead to higher complexity as the business model designers need to understand their business effects on the whole ecosystem (Evans *et al.*, 2017).

The International Scientific Committee for Social Economy (2000) refers to it as the third sector and it is well developed in European Union especially in the Netherlands (14,7%), Ireland (12,6%) and in Denmark (12,6%), but least developed in Portugal (2,5%) and Greece (1,6%).

SEs pursue the dual mission of achieving both financial sustainability and social purpose and, therefore, do not fit neatly into the conventional categories of private, public or non-profit organizations. They focus on solving social problems whilst generating revenue to ensure future sustainability. They operate, not for private gain, but to generate positive social and environmental externalities (Santos, 2012). This makes them a model that can strengthen both the economic and social pillars of a country (Littlewood and Holt, 2015). SEs are not entirely

focused on traditional commercial objectives and outcomes (Mair *et al.*, 2012). Instead, they prioritize the concerns of the communities they serve or strike a balance between these and the need to manage costs and optimize profits. SE is emerging as an alternative form of entrepreneurship based on the social economy.

Social entrepreneurs create new models for the provision of products and services that cater directly to basic human needs that remain unsatisfied by current economic or social institutions (Seelos and Mair, 2005, p. 48). In European countries, public service provision, in recent years, has seen increased “marketization”, with the private sector, third sector and a growing number of hybrid organizations competing for public service contracts and grants (Bennett, 2008). This trend has extended to South Africa, where declining revenues, under conditions of capacity constraints, limit South Africa’s municipal government’s ability to address the varied basic service delivery problems.

Authors such as Martens (2007) and Bulloch *et al.* (2011) have suggested that the recent increased interest in working with the private sector and subsequent growth of multi-stakeholder partnerships, is a response to dissatisfaction with the scale, scope and speed of poverty reduction efforts. About 16.5% of South Africans live in extreme poverty. Almost 39% of urban dwellers are poor (World Bank, 2017a, p. 6). Their index of rating of composite service delivery shows that public services were rated highest (out of 5) in Metropolitan Municipalities (4.6) and lowest in rural municipalities (3.3). Rating indices are also highest in richer provinces of Western Cape (4.7) and Gauteng (4.6) but lowest in poorer provinces such as Eastern Cape, Limpopo and Mpumalanga.

Douglas and Prentice (2019) suggest a role for SEs solving “government failure” problems. This is where SEs can help address the gap (Urban, 2008, p. 347). SEs in the South African context typically operate at the local level. They could assist to alleviate service delivery pressures on local government by creating alternative service delivery models, especially in the terrain of electricity distribution, water reticulation and waste management services to communities. However, the lack of empirical data within this context foils the attempt to confirm the true socio-economic impact of these ventures (Saebi *et al.*, 2019).

1.1 The problem statement

The path to sustainable business models rests on the ability of SEs to adapt their business models to the environment (Santos *et al.*, 2015). It is well known that there are challenges in aligning a SE business model to local governments’ internal activities (Baden-Fuller and Mangematin, 2013). Though experts see that South African SEs are usually active in filling “institutional voids” (Mair *et al.*, 2012) or “gaps” (Kolk, 2014), there may, however, be insufficient profit-making potential or an absence of requisite functioning market institutions to encourage engagement with these issues by traditional businesses.

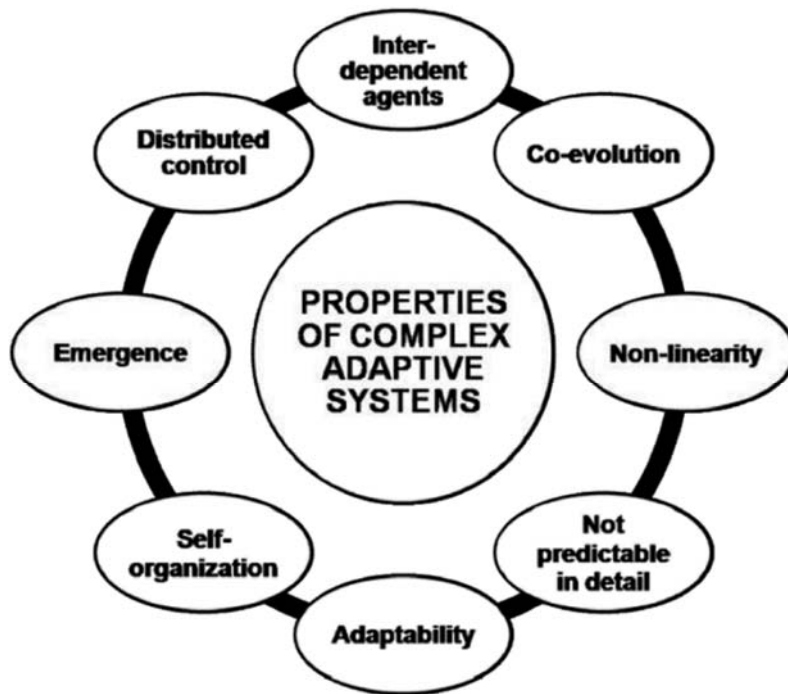
The business models of SEs that provide public services, in the overwhelming complexity of local government environment in South Africa, are not well understood. An exploratory research study that uses a complex adaptive systems approach to understand the operation of SEs in this context is, therefore, warranted. Thus, our study of the way SEs design their business models in South Africa represents a valuable contribution, which addresses an important research gap. The rest of the paper consists of a review of literature in Section 2, a description of the research techniques in Section 3. Section 4 presents a discussion of study results, whilst the paper concludes in Section 5.

2. Literature review on complex adaptive systems

The essence of a complex system is that it is a set of relationships between parts of a system. These parts can be individuals or even groups of individuals or non-human elements (Cilliers, 2004). As a dynamic network of many agents with multiple objectives (Dijkema *et al.*, 2013; Van Dam *et al.*, 2013), constantly acting and reacting, in non-linear relations (Augustinsson, 2006), in parallel to what other agents are doing, the control of a complex adaptive system (CAS) is highly dispersed and decentralized (Ryan, 2008). Coherence of behaviour in the system emerges from competition and cooperation among the agents themselves (Waldrop, 1992; Deming, 1994, p. 50). Complex adaptive systems are akin to neural-like networks of the interaction of distinct components that have cooperative, yet changing dynamics (Uhl-bien *et al.*, 2007).

Stakeholders' exhibit adaptive behaviour based on component interactions and environmental changes (Roundy *et al.*, 2018) and cooperate to find solutions to problems when they trust each other (Ostrom, 1990), though getting widespread agreement between relevant stakeholders is challenging (Sharma-Wallace *et al.*, 2018; Jones, 2020).

Complex adaptive systems in the provision of services such as energy, solid waste removal and hygiene and sanitation services, involve continuous and evolving interactions between the socio-political, technical, financial, environmental and institutional realms (Ghorbani, 2013, p. 3). It is complex, involving multilevel cooperative interactions between different levels of government and key stakeholders on policy issues in the area of “public health, environmental concerns and resource value and economic inclusivity” (Rodic and Wilson, 2017). These relations are shown in Figure 1.



Source: Palmberg (2009, p. 21)

Figure 1. An overview of the properties of complex adaptive systems (CAS)

A plurality of actors, mechanisms and rapid adaptive change combine to create new forms of social organization (Burnis *et al.*, 2002; Johnston and Shearing, 2003). A leading argument of adaptive governance is that when certain actors are excluded from the decision-making and governance processes, the result often negatively impacts communities (Dietz *et al.*, 2003). SEs in the UK emphasizes the importance of working as part of a network to better handle the needs of poor consumers. Consumers who approach relevant organizations often have complex needs, including disability issues and service delivery issues might be only one part of the issues they face. This network allows the particular SE to be part of those providing more holistic solutions for people within the locality and to ensure that people could be effectively referred to when problems went beyond issues directly connected to poverty (Creutzfeldt *et al.*, 2020).

2.1 Complex adaptive systems social entrepreneurship business models in the provision of public goods in South Africa

The South African Constitution mandates municipalities to promote local development, prioritize the provision of basic needs of local communities and ensure people's access to at least a minimal level of municipal services (Mafunisa, 2008). However, the biggest service delivery challenges facing municipalities relate to their very little capacity for implementing social development programmes. As such, innovative thoughts of a SE will aim to discover the item in the niche sector (existing in the ineffective parts) between the market and the government, to supply goods and services through market mechanisms [1] and to reinvest in society (Austin *et al.*, 2006; Mair and Martí, 2006).

The attractiveness of SEs in the UK and some other countries, to involvement in public service provision, is not unconnected to their great ability to create enduring financial value (OTS, 2006). This makes them have the potential to be sustainable providers of public services. However, elsewhere persistent limitations characterize SEs resource availability, pushing them to device clever survival means. For example, SEs are quite innovative and inventive in identifying resources. Baker and Nelson's (2005) describe how SEs find ways to manage and get along within the means available and use accessible options to shape the development patterns and venture sustainability.

Roundy *et al.* (2018) see a conceptual fit between entrepreneurship and complexity theory. This is because SE is also an intrinsically complex construct. When social entrepreneurs seek to generate blended value, this may give rise to a dual identity, creating internal conflicts and tensions. Pursuing achieving a financial objective brings with it a utilitarian identity whilst the adoption of social objective corresponds with a normative identity (Moss *et al.*, 2011). They, hence, face mission design tensions (Siegener *et al.*, 2017) and trade-offs (Smith *et al.*, 2013) as they strive to combine multiple goals – social and financial – that emanate from divergent institutional logics. The inherent paradox to pursue a social mission through business means inevitably leads to the emergence of competing demands related to social and financial objectives (Jay, 2013). In essence, the pursuit of a plurality of goals makes social enterprises to be designated as hybrid organizations (Battilana and Lee, 2014). This paradox manifests itself in a set of central characteristics of SEs (Mair *et al.*, 2015) that creates tensions for SE managers (Smith *et al.*, 2013).

SEs operation, in countries like South Africa, is made more complex by the fact that they also directly interact with governments and public agencies accountable for the welfare of citizens, to negotiate political or financial support or to influence changes in policies and

regulations (Pache and Chowdhury, 2012). Hence, SEs sustainability in this context is based upon the creation of a mix of income streams, with their local and regional governance, to involve developing relational assets. For funding purposes, SEs mobilize resources through their relational assets with external stakeholders (Newth, 2016). In South Africa, the most important source of micro-SE funding overall is from corporate social responsibility funds of established firms (Barnard, 2019) such as Old Mutuals Foundation who contributed an estimated \$700m in 2014 (World Bank, 2017b, p. 38).

SEs ownership also involves collaboration between governance and the community (Lyon and Sepulveda, 2009). SEs also have to engage a number of business enterprises, other SEs, subcontractors, financial institutions and social investors in contractual arrangements to pursue its mission, some of whom it engages in further collaborative relationships, as with other organizations (non-governmental organizations and not for profit organizations), local and central governments, residents and the media in social activity (Muñoz and Tinsley, 2008).

Social entrepreneurs combine “ethical fibre and result-orientation” or “vision and pragmatism” – in the design and operations of their businesses (Nicholls, 2010). With extraordinary cognitive abilities, they successfully combine utilitarian and normative identities related to business and social logic, respectively (Wry and York, 2017). SEs as the tool to solve social problems and means of social transformation, promote social change in the context of a market economy (Mair and Marti, 2009).

SE ventures should also continuously adapt to the changing social and economic context. Levin (2002) suggests that adaptive change is to be found in the evolutionary theory where the natural selection depends on differential selection among component types and the scope of variation among those components within the population. A paradigm shift in business strategy has occurred in which the business ecosystem is emphasizing aligning multilateral stakeholders interacting to materialize value propositions (Adner, 2016), addressing the needs and pressures of the immediate ecosystem (Snihur *et al.*, 2018).

Energy, water and sanitation are politically sensitive sectors in South Africa, where even few for-profit enterprises are currently willing to invest. This is because the sectors are seen as basic services that should be provided by the public sector free of charge at the point of use (World Bank, 2017b, p. 8). Also, public service beneficiaries’ expectations exceed what the state can deliver.

Also, to fill the gap, South African SEs risk the potential for “mission drift” when they engage with the corporate sector in the process of securing black economic empowerment (B-BBEE) rating. They also face significant resource constraints *ab initio*, regarding their ability to operate. Hence, gaining a high B-BBEE rating and associated resources or access to supply chains can be very appealing for social enterprises which may increasingly look to align their business models and strategies with B-BBEE frameworks; it could compromise their mission and competitive advantage (Littlewood and Holt, 2015).

In addition, the introduction of indigent tariffs by South African local governments which sought to provide basic services to poor previously excluded households makes things quite complicated for SE investors. Demographic, institutional and economic public service delivery challenges faced by municipalities are not unconnected with the proliferation of informal settlements or slums (Krugell *et al.*, 2010).

Provision of energy and waste management services falls within the domain of achieving the complex millennium development goals of improving the energy efficiency of the economy and reducing the environmental pollution. To confront such complex problems, various legislative, technological, organizational, educational and other measures are needed. As such, SEs have to deal with many established institutions and emerging ones, a host of other companies and multiple stakeholders with competing interests and claims. The diversity of these groups and their multiple needs affect these new ventures' behaviour and also shape the evolution of their ecosystems.

It is within collaborative approaches that inter-sectoral stakeholder engagement of government and other relevant entities is strengthened to collectively address barriers limiting service quality (Darteh *et al.*, 2019; Eldor, 2019).

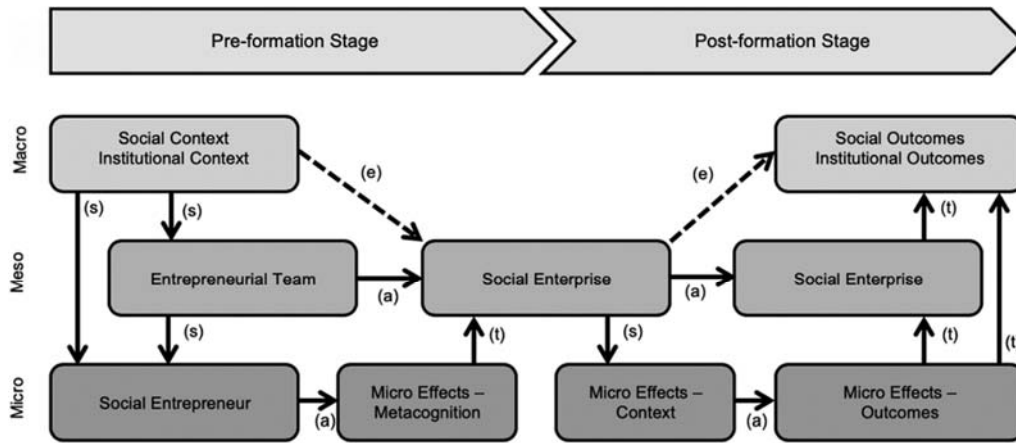
Social enterprises are, therefore, vital institutions for the delivery and development of innovative solutions to such social problems (Shaw and Carter, 2007), but are fragile organizations that struggle to achieve financial sustainability because of the inherent business model tensions.

When business models are designed to achieve higher sustainability, the processes involved inevitably lead to higher complexity as the business model designers need to understand their business effects on the whole ecosystem (Evans *et al.*, 2017). 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).

To successfully create, trade and sustain value, a business must engage its stakeholders' trade and sustain value, a business must engage its stakeholders' trade and sustain value (Freeman *et al.*, 2007, p. 311).

SE's sociality could lie in the organizational processes they adopt. Socially innovative solutions have been pioneered by SEs in terms of employment practices in Africa (using low-skilled workers, women and individuals from previously disadvantaged backgrounds), supply chain management and access to credit and financial services (in the form of different types of microfinance).

It is a multistage and multilevel phenomenon as illustrated in Figure 2.



Notes: (s) Situation mechanisms (a) action mechanisms (t) transformation mechanisms
(e) explanatory shorthand
Source: Saebi *et al.* (2019)

Figure 2. Social entrepreneurship as a multistage, multilevel phenomenon

Table 1. Composite service delivery index scores by municipal category and province in South Africa, 2016

	Index				
	Sanitation	Water	Refuse removal	Electricity	Service delivery index
<i>Municipal category</i>					
Metropolitan municipality (A)	4.7	4.5	4.5	4.6	4.6
Secondary city (B1)	4.4	4.3	4.0	4.6	4.3
Large town (B2)	4.3	4.0	3.9	4.5	4.2
Small town (B3)	4.3	4.0	3.6	4.5	4.1
Rural municipality (B4)	3.5	2.8	2.3	4.5	3.3
<i>Province</i>					
Western Cape	4.8	4.6	4.7	4.8	4.7
Eastern Cape	4.1	3.3	3.2	4.4	3.8
Northern Cape	4.3	4.1	3.9	4.6	4.2
Free State	4.4	4.3	4.1	4.7	4.4
Kwa-Zulu Natal	4.1	3.8	3.5	4.5	4.0
North West	4	3.8	3.7	4.6	4.0
Gauteng	4.7	4.5	4.5	4.5	4.6
Mpumalanga	4	3.9	3.2	4.6	3.9
Limpopo	3.6	3.3	2.6	4.7	3.6
South Africa	4.3	4.1	3.9	4.6	4.2

Source: StatsSA (2016:81)

2.2 The design of social entrepreneurship business models

Authors such as Teece (2018), Groeger *et al.* (2019, p. 103) describe a business model as an open system that operates to create, deliver and capture value over time for all stakeholders. SE creates new business models. They create new models for providing products and services catering directly to basic human needs that remain unsatisfied by current economic or social institutions (Seelos and Mair, 2005, p. 48) (Table 1).

The literature sees strategy as being founded on a business model and tactics are founded on strategy (Seddon *et al.*, 2004; Casadesus-Masanell and Ricart, 2010). A business model depends on an underlying enterprise ontology, which defines an enterprise as a system consisting of composition, structure, environment and production. The business of an enterprise is then understood as its function, as characterized by the products and services that are delivered to the environment.

True hybridization is, thus, limited to “cross-species” interactions, particularly such that integrate markets, civil society and the State (Grassl, 2012). From a design perspective, a generic business model must as a minimum specify the “what”, “for whom” and “how of production”. It must at its essential core identify content, structure and governance (Zott and Amit, 2010). Content includes a value proposition, which takes the following generic form. This is the typology of social enterprise that suggests potential business models (Alter, 2006; Malki, 2009) (Table 2).

Table 2. Generic SE business model

Social entrepreneur organization	Stakeholders (government, community, other competitors)	Mission
SE will serve (X)	Who is being served?	What is SE’s mission
		Who is SE’s customer(s)
		What do SE’s customer(s) need/value?
By SE doing what? (Y)	How are they being served?	Which goods/services are produced?
		How do they address a customer need?

Source: Adapted from Grassl (2012)

Anderson and Billou (2007) propose the four A’s framework, identifying key criteria of affordability, availability, awareness and acceptability, which they suggest need to be achieved to sell successfully in low-income markets. Adapting an existing business model is often not an easy task (Saebi *et al.*, 2019). Business models should not be inert over time. Adaptation may imply changes in the firm’s value proposition, market segment, value chain and value-capture or how these are linked in an architecture. Adapting an existing business model is often not an easy task. Adaptation may imply changes in the firm’s value proposition, market segment, value chain and value-capture or how these are linked in an architecture.

2.3 Social enterprises, value proposition, value creation and adaptation

Alter (2006) distinguishes social enterprise models based on their mission orientation (from mission-oriented to profit-oriented), on their target group and on how the social programs and the business activities related to each other. Alter (2006) identifies three core models of social enterprise:

1. embedded (when social programs are inherent in the business activities, as in Fair Trade);
2. integrated (when social programmes overlap with business activities, for instance at the Scojo Foundation in India); and
3. external (when business activities are an external source of funding for social programmes, typically in health or education not-for-profits).

There are tremendous societal benefits of providing appropriate products to lower-income and disadvantaged consumers and companies doing so can derive substantial profits (Porter and Kramer, 2011). Profits evolving from the pursuit of social missions represent a higher form of capitalism, that will enable a society to advance more rapidly whilst allowing companies to grow even more. The result is a positive cycle of company and community prosperity, which leads to profits that endure (Porter and Kramer, 2011). Categories of SEs that blend social goals with business goals are generally called “double bottom lines organizations” or “bottom of the pyramid ventures”. They are for-profit social entrepreneurial ventures. The combination of a strong social purpose and an entrepreneurial drive to create a profitable business tend to deliver genuine results in inclusive growth.

Austin *et al.* (2006) find that social entrepreneurs are restricted from tapping into the same capital markets as commercial entrepreneurs. They tend to tap their own funds first and later pursue external sources funding sources (Dorado, 2006). When a good opportunity is identified, social entrepreneurs engage in innovative activities to create social value, during the course of which it becomes essential to build a competent team, this ultimately results in social enterprises making money (Stevenson and Jarillo, 1990). They are, hence, akin to commercial entrepreneurship in for-profit companies which affects business activities for the maximization of firm performance (Son *et al.*, 2018). They seek innovative ways to overcome market failures and to create both social and economic values. Their entrepreneurial orientation can promote product innovation and active utilization of social capital. Being proactive they tend to anticipate and prepare for future demands or changes of business environments (Lumpkin and Dess, 1996).

The value proposition is SE’s offering to address customers’ needs or wants. Value delivery concerns the activities and networked relationships with partners and suppliers through which organizations deliver value (Seelos and Mair, 2005). Value capture is used to describe how value is captured from revenues and how costs are managed during value creation and delivery (Hahn *et al.*, 2018).

Social value creation is not expected to be an easy construct especially as SEs usually operate in resource-scarce environments. Dees (1998) suggests that SEs should act as change agents in the social sector by engaging in a process of continuous adaptation, whilst Mair and Marti (2009, p. 433) recommend accepting the potential resistance from some stakeholders as given and adapt to it.

3. Research aims

This research aims to understand SE business model design paradigms within the complex environments of local governments in South Africa. It seeks to gain substantive insights into the business model design paradigms of the sample group of companies, to understand their conceptual framework that could potentially increase the survivorship and sustainability of future social enterprises, thereby creating sustainable emergent change within the system. Tensions exist within the context of creating social and economic value, especially given the context of the complex environment of local government services in South Africa. This perplexing conundrum is interesting to study. It is crucial to understand the interconnectedness of social enterprises, with a view to appreciating how this relationship with stakeholders manifests itself.

3.1 Research question

The research question is to understand how the social enterprise business model is designed from the perspective of creating value for the network of stakeholders that are connected to the firm. This is intended to assist us to understand how the social entrepreneur construes the content of the business model from their own ontological worldview.

3.2 Research method

That SEs still remain a somewhat perplexing conundrum (Hlady-Rispal and Servantie, 2018), motivated the study to focus on market hybrid SEs. Judging from the Returns Continuum Framework (Balbo *et al.*, 2010), we focus on the social purpose businesses and chose profitable SEs as organizations to be sampled. Following the method suggested by Miles and Huberman (1994), social entrepreneurs were selected purposefully from South Africa's Gauteng and Western Cape provinces. Face-to-face interviews were then conducted with senior managers or executives of these organizations, who associated themselves with SE or identified their company as such. The adopted semi-structured interview method consisted of two levels of questions: main themes and follow-up questions (Saunders and Lewis, 2012). This has been used in a mono-method qualitative approach to study business model design paradigms of SEs in the South African local government environment, focusing specifically on those that function within the electricity distribution, water reticulation and waste management services sectors. Also, following Ciambotti *et al.* (2020), the main themes follow predetermined questions that we asked in varied chronological order. Within them, participants were encouraged to speak freely about their perceptions and experiences. These themes covered the general history of the SE, the social business model; challenges that SEs faced and how these were overcome and scaling strategies and pathways to growth, etc. 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 (Khan, 2008).

3.3 Interview technique

The scheduled face-to-face interviews with SE managers/owners were done at their preferred locations. A pre-developed "codebook" formed the basis to further build the categories that could consequently be amalgamated into umbrella themes to enable the researcher to carry out structured and systematic contextual analysis (Flick *et al.*, 2004). The possibility of generating many new codes from open-ended questions, especially when a theoretical framework is used (Collis and Hussey, 2009, p. 167), motivated us to probe participants

further until data saturation was reached after 12 interviews were conducted (Guest *et al.*, 2006). Morse (2015, p. 587) takes the view that saturation is “present in all qualitative research” and it is commonly considered as the “gold standard” for determining sample size.

We adopted three elements of the interview guide suggested by Patton (2002). Sample triangulation (Yin, 2009) was used by selecting three different sample typologies and also by introducing geographical triangulation of the sampled group. Face-to-face conversation was complemented with observations on the social context to understand how it influences the attitude and behaviour of social entrepreneurs and how, in turn, they influence the ability to adapt to the social context. This significantly strengthened measuring instrument reliability and ensured data validity.

Primary data collection was supported by audio recordings of interviews which were transcribed and uploaded to ATLAS.ti for data analysis. Although we analysed the data deductively, the necessity to extract a coherent approach to SEs business models within complex ecosystems, enables us to extract emerging themes and categories from the data which provide preliminary support for the conceptual 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. As a framework for the combined results, we used the categories and codes from the literature, as well as inductively derived codes from the material. This is in line with established procedures for inductive theory building (Denzin and Lincoln, 2005). Furthermore, by triangulating the themes within the various sectors, it can be inferred that the different sectors have low levels of variability between the different themes, therefore strengthening the coherence of the proposed conceptual framework.

A pre-test was conducted with a social entrepreneur in the local government environment and represented the characteristics of the population of the study. This 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. Description of participants and context

The study participants were South African SEs, operating within the electricity distribution, water reticulation and waste management services in the local government context, and hence had a thorough understanding of public service dynamics. Engaging with these SEs 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. Their profiles are presented in Table 3.

Table 3. Survey participants and context

Company pseudonym	Industry	Company age	City
Solar A	Solar and Renewable Energy Company	17	Pretoria
Solar B	Solar and Renewable Energy Company	3	Johannesburg
Solar C	Solar and Renewable Energy Company	17	Pretoria
Solar D	Solar and Renewable Energy Company	2	Johannesburg
Solar E	Solar and Renewable Energy Company	16	Cape Town
Waste A	Waste Management and Recycling Company	40	Johannesburg
Waste B	Waste Management and Recycling Company	10	Pretoria
Waste C	Waste Management and Recycling Company	36	Johannesburg
Waste D	Waste Management and Recycling Company	9	Cape Town
Waste E	Waste Management and Recycling Company	33	Johannesburg
Water A	Water and Wastewater Engineering Company	17	Pretoria
Water B	Water and Wastewater Engineering Company	7	Pretoria
Water C	Water and Wastewater Engineering Company	4	Pretoria
Water D	Water and Wastewater Engineering Company	19	Johannesburg
Water E	Water and Wastewater Engineering Company	35	Cape Town

4.1 Research findings and results

When building SE business models to operate in a market, the importance of designing a viable and clear value proposition and making customers aware of SE's products and/or services cannot be over-emphasized. The value proposition should reflect SE's social mission, with a clear link between issues customers face and SE's solution (Ciambotti *et al.*, 2020). According to Vanourek (2013), a business model is characterized by:

- optimizing production and operational processes;
- delivering more value to customers and users through effective channels;
- capturing more value through profits and growth;
- obtaining competitive advantages over rivals;
- driving innovation in the venture and
- understanding venture as a whole and how its elements fit together.

Our findings relating to SEs four A's framework of Anderson and Billou (2007) are presented here. These are the identifying key criteria of affordability, availability, awareness and acceptability, which they suggest need to be achieved to sell successfully in low-income markets. We also explain their adaptation framework.

Table 4. 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

Notes:

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

Source: Study finding

4.2 Network interface and stakeholder management

Elkington and Hartigan (2008) argue that SEs disregard ideological restriction, resolve social issues in a pragmatic way, bring about change offering products and services, concentrate on generating social value,.... and firmly believe that every person may play a part in sustainable growth. The context of how SEs interface with their stakeholders features very prominently in the data. It is also the most cited category in the value network theme with 11 respondents

underscoring this phenomenon. All respondents identified the importance of network interfacing and the stakeholder relationship management process. The SE network was the most dominant code group of this category. The respondents highlight the building of trustworthy relationships to enhance network awareness:

So, in terms of the evolving nature of our business model, we are actually putting mechanisms in place to strengthen the relationship with stakeholders than we were previously. It is almost a requirement. It is now much more formal, it involves having regular meetings, regular interactions. All that happened over time. It is the dimension, which has deepened up and, the number of stakeholders that we have to touch base with and engage with to make this happen just burst out. When we look at a stakeholder, we try to engage with that stakeholder holistically [...] It gets exhausting, But It's okay because we are repeating the same issues all the time. Then we don't have to worry about our messaging. Because if I'm just telling a story, I can say that again and tomorrow it will be the same – Waste A.

So it's a mutually beneficial relationship, not a friendly one. We all sit and converse around the table, freely; and everyone feels that their input has been valued and nobody feels cheated – Solar D.

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

They all get allocated a customer or list of customers, with 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, how we could divert. And then also we've got nine branches and all those branch managers actually have to manage stakeholder relationships as their important KPI – Waste E.

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

You need 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 stakeholder relationship was the statement, second most referred to in this category. Seven respondents validated the value of having a network of trust as part of the business model:

The design of the business model needs to build a trusted network within it 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 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 says, Okay, I give you my word, sometimes its not even necessary to sign a piece of paper. 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 are having the weather; in 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 is 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 recycling projects because what is in the 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 organized in the form of a community forum:

We now have 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, 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 formulized, 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. Go and see them. Basically, that's what it is. Just basically, get in touch with them, contact them, stay in communication, frequent communication – Water B.

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

I always try and formalize it as much as I can. 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 from 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. At the end of the day,

you need to know, what's the outcome is 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 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, 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 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.

4.3 Value creation

4.3.1 Design-thinking and customer-centricity.

Within the value network theme, the importance of value creation was the second category most cited. Design-thinking and customer-centricity was the most cited code group in this category and was also validated by 11 respondents in the three sectors. 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 businesses, it is actually more about customers and their needs. So, if a customer says, Oh, we need this and we need that, the issue is about whether we can do it or whether it makes sense to do it. The answer is Yes, we can, let's do it.– Waste D

I'm very customer-focused. That's one of our biggest strengths [...] the best thing is, to listen to what the customers' needs are [...] use a customer-centric approach to see how we can create more value in terms of recycling and that will automatically give us the financial needs – Waste D.

4.3.2 Value creation in line with financial market preferences.

One of the most important characteristics of complex adaptive systems is their capacity to learn (Stacey, 1995, 1996; Sherman and Schultz, 1998). 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 merely doing “social good” is not sufficient for a sustainable enterprise:

When we did our market research, we found that people are interested in doing good, but they also don't want to sacrifice returns [...] So, for example, everybody prefers the option of getting higher returns with doing good than fewer returns – 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 are unemployable. The ladies that are doing the sorting. There's not one South African, Mozambicans, Zimbabwe. Malawians and cannot 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 bring them 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. And we can provide each and every one of those aspects – Water E.

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

However, there is a need to create not only social value but the 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 how to grow the business and also how to add value to the community"? – Water A.

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

This leads the analysis into the next two subcategories of value creation which are product value and service value.

4.4 Product value

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

We, in the water and wastewater treatment industry, have made major inroads. The products that you will see outside is of the highest quality in the world; and are equal to military standards [...] even the Germans have 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 trusting relationship with our clients; we give them 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 this massively valuable cash flows annuities to Eskom. So instead of just giving them very valuable assets, the aim is also to give them value for the 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 emphasized 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 adds 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 the product they can understand, it's the product that does what it's supposed to do. It's simple – Solar E.

And the thing about our network is that it's simple and it's the most critical thing – Solar D.

4.5 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:

The service that I want to deliver is quality service. Basically, quality service is the 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 has done on that site, in a span of three months, it 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 there are too many small companies around, you want to create customer loyalty. 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 get a customer and you want to and they want to do business with you and you use a service provider, you are very much dependent on the service level of that service provider. Hence, 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.

4.6 Value capturing

The process of value capturing is 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:

the word-of-mouth marketing of your social impact initiatives feeds back into your business by creating a reputation that's desirable for the markets [...] my customers create additional customers for me – Solar A.

They sign up to Waste B because we 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 is the necessity of capturing economic gains and was cited by seven respondents who gave some interesting insights. The waste management sector especially was 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 past two years. So, from a financial perspective, it's fantastic [...] 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 if people don't pay for something, they devalue the service – Waste D.

So, you try, you try to give the benefit to the customer whilst you are making margin and keeping your head afloat. But yes, the margins are quite slim [...] it's a volume game and 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:

Social engagement is achieved through interaction with people, in demonstrating and showing goodwill. We are not shouting from the mountain tops; People come to us because they are having the Water E experience [...] we're going to make major inroads in terms of our social slant – Water E.

4.7 Value delivery

Value delivery concerns activities and networked relationships with partners and suppliers through which SEs deliver value (Seelos and Mair, 2005). The least cited category of the value network theme is the distribution channel, as only three respondents refer to this construct. However, similar to other categories, the value of having a trusting and supportive relationship with suppliers was emphasized:

...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 on a deal in Germany to exchange an inverter and it took 4 months and had to pay €25,000. So I'd rather use products that have support in our country and suppliers 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 are actually stimulating demand – Water C.

[...] and I believe the bottom-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 is important [...] introducing the product, creating a demand strategy for the product – Water D.

4.8 Adaptation

Adaptability entails the capacity to smoothly adjust structures and processes of SE partnerships that underlie business models (Rosenstock *et al.*, 2020). 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;

...over time how our model has changed – Waste A.

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

It's been driven from opportunity to opportunity and learning [...] So, your business model needs to be adaptive – Waste C.

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

It was developed in the early years. We experimented and did a lot of research [...] it's taken us seven years to get this thing and we are 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 the funding model, operations, products, technology, service levels, contractors, the competitive landscape, corporate governance, etc:

Going back 20 years, we were just a 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 survive on 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 we realized that another company's paying a higher price for only white products and only colour. 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. Concluding remarks and summary of findings

This paper is a high-level overview of the various constructs that have been validated by SEs in electricity distribution, water reticulation and waste management services to communities in South Africa. As expected, a strong emphasis has been placed on network interface mechanisms and stakeholder management techniques. Most respondents focus on building a

network of trust with stakeholders. This is predominantly achieved through a wide array of communication mechanisms that emphasize 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 which has been confirmed by a strong focus on design-thinking and customer-centric approaches that strengthen the value creation process of the organization. The value creation process used 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 organization 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 organization to ensure the sustainability of the organization.

6. Implications for research, practice and/or society

Social good, but resource providers are demanding more concrete evidence to help them understand their impact (Struthers, 2013). This is because it is intrinsically difficult for many social organizations to document and communicate their impact in more than an anecdotal way.

The double (economic and social) or even triple bottom line (economic, social and environmental) of social enterprises present new challenges and opportunities in measuring impact. It is a complex process to operate sustainably in the market whilst also trying to maximize social good. Without information systems that capture data for both bottom lines, monitoring them can be very difficult.

The SE framework of Austin *et al.* (2006) shows how entrepreneurial activities have a connection with the usage of business model frameworks. Business model frameworks guide researchers and practitioners to use visual thinking to identifying people, context, deals and opportunities in organizing value creation. Understanding SE Business models, hence, paves a useful path to understanding SE value creation. This is an effective tool for corporate decision-makers to capture information, analyse situations and make decisions to create competitive advantages for their enterprises. Also, understanding SE model value creation is important because it will help establish how sustainable the social enterprise is, which is important funding or subsidy requirements.

The barriers to data collection about the impact of SEs are many and include those relating to SEs endowment of limited resources, lack of knowledge and inadequacy of information systems available to them (Mook *et al.*, 2005). This is important in teaching, influencing public policy and research. Our paper has used SEs four A's framework of Anderson and Billou (2007) which enhances practitioners' understanding of identifying key criteria of affordability, availability, awareness and acceptability, which they suggest need to be

achieved to sell successfully in low-income markets. Our paper, hence, contributes to the body of knowledge in this regard.

Authors suggest that Social entrepreneurs who address basic social needs such as food, shelter or education, very often find it difficult to capture economic value because, although the customers are willing, very often they are unable to pay even a small part of the price of the products and services provided (Seelos and Mair, 2005). Our study reports the importance of customer-centricity design-thinking, the incorporation of societal values that address market failures, the creation of valuable services for the multiplicity of stakeholders. Product value should go beyond product quality, to embrace value for money and affordability. It is also important that the business model design should adapt to the dynamics of the value network.

6.1 Suggestions for future study

Based on our findings, the following potential domains have been identified for future research:

- It will be useful if future studies could examine complex adaptive systems approaches to commercial entrepreneurship business model designs in South Africa.
- Also, it is suggested that the complex adaptive business model canvas should be tested quantitatively for South Africa and other African countries, by determining whether social entrepreneurs follow the conceptual constructs as articulated by the framework.
- Other studies could also study commercial enterprises that use complex adaptive business model approaches to create sustainable competitive advantages.
- Also, quantitative studies that test the comparative financial and/or social success rates of social enterprises that apply complex adaptive business model strategies will be interesting.
- Finally, future studies could explore the possibility of using complex adaptive business model design processes within the theoretical contexts of open innovation.

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