Social SME Entrepreneurship: A Conceptual Model of Innovativeness in Environmentally Sustainable Social Enterprises

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Abstract: Purpose – The awareness of the severity of global sustainability challenges has reinforced appeals to harness and leverage alternative business forms and ecologically sustainable innovations to grant future generations the capability to meet their own needs. This paper aims to develop a conceptual model for innovativeness of Environmentally Sustainable Social Enterprises (ESSEs). Design/methodology/approach – After undertaking a systematic literature review, a conceptual model including eight dimensions is developed. This is tested by means of a standardized self-completion online questionnaire among ESSEs. Findings – The analysis of the quantitative data enabled us to revise the conceptual model. Our findings confirm the multidimensional nature of the innovativeness of ESSEs primarily inferred from the studies by Lawson and Samson (2001), Hogan *et al.* (2011), and Iddris (2016). The findings of the study provide a contextually insightful and focused understanding of the eco–innovation capability, related to ESSEs. Originality/value - EI literature predominantly focuses on large, profit–maximizing organizations. Less scientific work examines mission-driven SEs as their object of study. Hence, this study bridges the literature of social entrepreneurship, EI, and innovation management.

Keywords: Social enterprise, Environmentally Sustainable Social Enterprises (ESSE), innovativeness, SME

1. Introduction

The awareness for global sustainability is consistently increasing; however, the changes induced to combat the challenges faced and to aim at a more sustainable world seem to be extremely slow in nature. The challenges faced by humankind are multifarious resulting in global climate change and its severe implications like drought, rise in sea-level, extreme weather conditions, etc. (Silvestre and Ţircă, 2019). The heightened awareness of the severity of sustainability challenges has reinforced appeals to harness and leverage alternative business forms and ecologically sustainable innovations to grant future generations the capability to meet their own needs (Vickers and Lyon, 2014).

The slow momentum of the measures taken reflects in the rapid depletion of natural resources, where a large gap is being observed between increasing human demand and the supply of natural resources (Hoefer, 2019). Thus, major attention is steered towards industry and organisations who mainly contribute to environmental degradation. Although they are the main triggers, they are anticipated to have the potential solutions and can reverse their negative environmental impact (García–Granero *et al.*, 2018; Schaltegger and Wagner, 2011). Cohen and Winn (2007, p. 30) argue that environmental degradation can be slowed and the earth's ecosystems can be improved by "harnessing the innovative potential of entrepreneurship with innovative business solutions." Social entrepreneurs are said to bring in the required ecological and social innovations as their entrepreneurship is mission-driven rather than profit-driven; they focus and prioritise social and environmental interests and place them on par with economic interests (DiVito and Bohnsack, 2017; Hall and Wagner, 2012). These social enterprises (SEs) are described in literature as inherently innovative in addressing social, environmental and economic needs (Monroe–White and Zook, 2018; Wilson and Post, 2013).

This study presents the current situation in the field of ecologically sustainable innovations by Environmentally Sustainable Social Enterprises (ESSE); identifies the characteristics and innovativeness of ESSEs, and presents a conceptual model for ESSEs' innovativeness.

2. Literature Review

Substantial literature is available in the field of social enterprises and social entrepreneurship. Research carried out since 1991 concludes that SE and SEship literature is still in the development stage requiring a more formal, rigorous and empirical research methods (Granados *et al.*, 2011). It can be said that these disciplines are maturing and a consistent increase in theory development, empirical testing and validation is seen. This paper focuses on ESSEs and outlines a conceptual model that explains the internal factors determining the innovativeness of ESSEs. It examines mission-driven SEs as its object of study because less scientific work has been conducted in this field so far and the main focus of EI literature has predominantly been on large, profit–

maximizing organisations. Although the majority of SEs are small-sized and young enterprises (Defourny and Nyssens, 2017; Doherty *et al.,* 2014), they contribute largely to the green economy and sustainable development. In effect, ecologically sustainable innovations, also known as eco-innovation (EI) are a composite of business innovation research and sustainable development research. EIs create products and processes that are less wasteful, less resource-intensive and overall more eco-efficient (Leal–Millan *et al*., 2018).

The Community Innovation Survey (CIS) distinguishes nine types of eco-innovations (CIS, 2014) that are classified into two categories. Six EIs refer to environmental benefits arising from the processes utilised in the production of green goods and services, and the remaining three deal with environmental benefits derived from the consumers' after-sale use of the product or service (Ben Arfi *et al.,* 2018; CIS, 2014). According to CIS (2014, p. 12) the six types of EI benefits are: reduced material use per output unit; reduced energy use per output unit; reduced CO2 footprint; replaced materials with less hazardous substitutes; reduced soil, water, noise, or air pollution; and recycled waste, effluence or materials. The environmental benefits derived from consumers' after-sale use are (1) consumer benefits, reduced energy use, (2) consumer benefits, reduced air, water, soil or noise pollution, and (3) consumer benefits, improved recycling of product after use.

Thus, innovativeness with the focus on sustainability and vice versa are the key characteristics of EIs (Silvestre and Ţîrcă, 2019; Varadarajan, 2017), which have led to the emergence of alternative business forms like Environmentally Sustainable Social Enterprises (ESSE) (Bettiol *et al*., 2018; Breassan *et al.,* 2016; Picciotti, 2017; Youssef *et al.,* 2018; Kraus *et al.*, 2017) as well as ecological sustainable innovativeness (Gast *et al.,* 2017; Hockerts and Wüstenhagen, 2010; Schaltegger and Wagner, 2011). The ESSEs harness innovation systematically to induce change by combining resources in new ways. They are set at embedding social and/or environmental value into their company's economic value, which makes them novel and distinguishes them from traditional companies. The locus of the ESSEs' innovations is seen in their distinct organisational structures, resources and capabilities (Silvestre and Ţîrcă, 2019; Varadarajan, 2017). Thus, the innovativeness of ESSEs is observed and analysed in this study. It explores the internal factors at the meso-level of the ESSEs that drive eco-innovations as well as sheds light on the internal capability of the ESSEs. It highlights how the ESSEs serve as catalysts and internally promote environmentally motivated innovation through more sustainable consumption and production practices.

2.1 Characteristics of ESSEs

ESSEs are catalysts of change as they combine resources in new ways and strive to create more sustainable consumption and production practices. Although novel in their values and committed to sustainability, they face more challenges than traditional companies (Gast *et al.,* 2017). One of their biggest challenge is decision-making as they try to balance environmental protection and adhere to social standards with economic, financial sustainability. Furthermore, ESSEs often tend to lack skilled human resources, technical expertise, access to finance and research that impede innovation, product development and market creation (Gast *et al.,* 2017, p. 52). Such resource constraints may influence their decision-making strategy (Hall and Wagner, 2012). Nonetheless, their size and structure, leadership style, corporate culture and employees' mind set strongly support their innovativeness. The ESSE entrepreneur plays a prominent role in generating innovations portraying not only a dynamic and horizontal leadership style but also strongly imprints the corporate culture. Their lean, flexible hierarchical structure makes them very responsive to changes.

2.2 Innovativeness of ESSEs

The ability to innovate is a firm-wide behaviour that renders innovative activities within as well as outside the organisation. Lawson and Samson (2001) and Hogan *et al.* (2011) acknowledge the multidimensional nature of the innovation capability construct composed of reinforcing practices and mechanisms within the firm. Thus, the internal factors at firm level are decisive and determine the innovativeness of ESSEs. Based on this notion, this paper refers to a conceptual model developed and tested within the scope of a master's thesis. This model is related to firm-specific internal factors only. External determinants such as governmental regulations, etc. are not captured by this model (Hoefer, 2019).

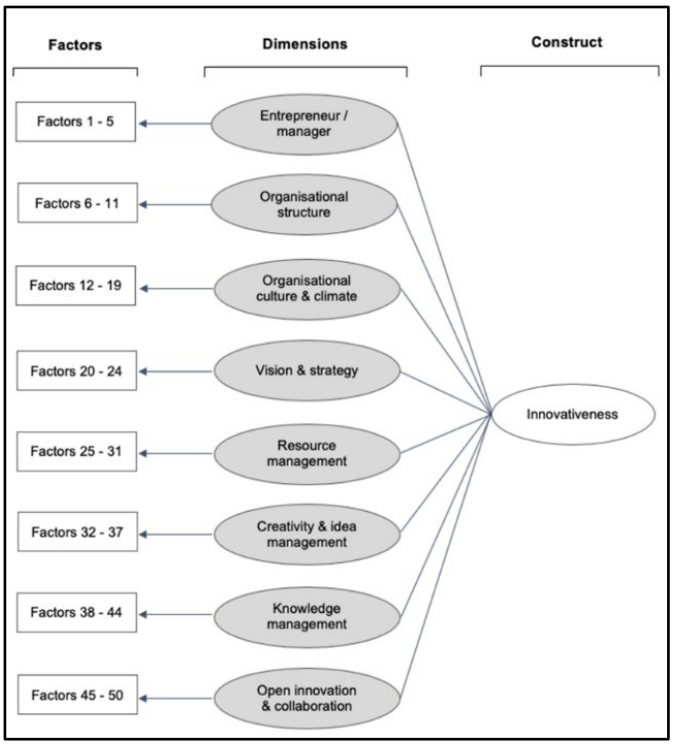

Figure 1: Conceptual Model (Hoefer, 2019, p.37)

As illustrated in the above figure 1, there are eight dimensions that affect the innovativeness of a firm.

2.3 Dimension One–Entrepreneur

The way, how individuals see, understand themselves and act their role as entrepreneurs plays a very important role in the decision making and activities undertaken (Zur, 2020). The social identity of the entrepreneur concentrates on what the entrepreneur actually does (Anderson and Warren, 2011) and plays a central role in the environmentally sustainable innovation processes of a company. It is the sustainability and entrepreneurial orientation of the founder, the founder's personality, managerial experience and green transformational leadership style that are defined as the core factors. Chen and Chang (2013, p. 109) propose the novel notion of "green transformational leadership style" that stimulates the innovative performance of organisations. It refers to the behaviour of an entrepreneur who motivates one's employees to achieve environmental goals and higher performance levels through creative thinking. S/he sees problems from new perspectives; communicates a vision, and provides individual support to one's employees.

2.4 Dimension Two–Organisational Structure

"Organisational characteristics are shown to bear a major influence on a firm's innovative activity" (Martínez–Román and Romero, 2017, p. 549). The more flexible an organisation is, the more reactive it is to its changing environment enabling internal flexibility when it comes to its processes, systems and the way its products or services are delivered (Ben Arfi *et al.,* 2018). Also, less hierarchical structures denote low levels of bureaucracy resulting in a wide span of control, greater flexibility and adaptability (Parzefall *et al.,* 2008).

2.5 Dimension Three–Organizational Culture & Climate

An innovation culture refers to behaviours, values and beliefs that foster an openness to innovation. The concept of climate describes specific facets of a firm's culture like a climate for psychological safety that tolerates mistakes and learns through failure (OECD and Eurostat, 2018; Parzefall *et al.,* 2008). Hence, leaders of ESSEs must try to create and foster a culture compatible with their innovation strategies (Pham *et al.,* 2019). An environmental culture of an organisation can facilitate both proactive and reactive green innovations (Chen *et al.,* 2012). The above-mentioned cultures empower employees giving them autonomy and creative time (Iddris, 2016). This is reflected in participative decision-making, emphasis on learning, support and collaboration, power sharing as well as risk tolerance (Hurley and Hult, 1998).

2.6 Dimension Four– Vision & Strategy

ESSEs are found to have an explicit organisational strategy emphasising proactive environmental sustainability and innovation orientation that is disclosed in their vision and mission statement (Dangelico, 2016; Parzefall *et al.,* 2008; Pham *et al.,* 2019). Such a strategy can serve as a core driver for the overall organisational development (Klewitz and Hansen, 2014). In addition, specific green policies and strategies such as green management, material and energy efficiency, supply chain management and commitment towards limiting negative environmental impact prompt green product innovation development (Dangelico, 2016). Since ESSEs are generally rooted and embedded in a location, they may face organisational identity challenges when they expand globally, which may affect their organisational culture, climate, vision and strategy. Thus, they should align well with both local and global audiences to meet their community visions and goals as well as connect with the realities of the external markets like technological advances, market and customer knowhow (Siegner *et al.,* 2021).

2.7 Dimension Five–Resource Management

ESSEs require the availability of diverse resources, such as people, know-how and technology (Pacheco *et al.,* 2017). People are the most important resource for innovation as they embody the firm's knowledge and are the source of creative new ideas (OECD and Eurostat, 2018). Moreover, ecological sustainable entrepreneurs emphasise on hiring personnel who share their personal values (Gast *et al.,* 2017). The combination of enterprise and social mission is a motivating force that gives employees the intrinsic reward of job satisfaction and the feeling of being meaningful contributors to community (Doherty *et al.,* 2014).

2.8 Dimension Six–Creativity & Idea Management

Creativity is considered "the primary impetus of innovation" (Chen and Chang, 2013, p. 110). It is viewed as thinking differently and expressing ideas in new ways (Pham *et al.,* 2019). It involves brainstorming and requires sufficient time to elaborate on ideas (Pham *et al.,* 2019). Green creativity refers to organisational and marketing practices that drive EI. In addition, "idea management [as one dimension of innovation capability] […] provide feedback and reward for innovative ideas" (Iddris, 2016, p. 248). Eco design, for instance, requires companies to think of ways to "repair, reuse, disassemble, remanufacture, and/or recycle a product" to achieve a more environmentally benign product design (Klewitz and Hansen, 2014, p. 67).

2.9 Dimension Seven–Knowledge Management

Knowledge management entails the different activities of knowledge creation, sharing and utilisation that encompass a firm's internal and external factors (Wong and Aspinwall, 2004). A firm can source knowledge within the organisation from its employees, through R&D, learning-by-doing and learning-by-failing effects. Additionally, industry knowledge is necessary for acquiring other resources such as more capital, networks or reputational assets without which it would be difficult for technological, environmental innovations to progress into commercial offerings (Halme and Korpela, 2014, p. 559).

2.10 Dimension Eight–Open Innovation & Collaboration

Innovation for the environment and society is undertaken through interactive collaboration and knowledge sharing with a wide range of external stakeholders (Phillips *et al.,* 2015). It can be distinguished between collaboration with actors of the firm's value chain and agents of specific and technical knowledge such as research centres, universities, etc. (Martínez–Román and Romero, 2017).

3. Data Collection and Analysis

A standardised self-completion online questionnaire was designed as the survey instrument using the online survey software Enterprise Feedback Suite (ESF). The questionnaire comprised fifteen questions, grouped into three thematic parts. The first part contained questions on the enterprises' demographics. The second part measured the Social Entrepreneurship Fit (SEF) of the enterprise to ensure that it met the definition of ESSEs. The third part of the questionnaire collected data for all eight latent dimensions of the conceptual model on the innovativeness of ESSEs. Eight closed questions were asked to get a self-reported assessment on the extent to which the enterprises consider the respective identified internal factors to be influential on ESSEs' innovativeness.

The 50 internal factors were measured by means of a four-point Likert scale ranging from “strong influence” to “no influence”. With the additional non-attitude choice "cannot assess," non-attitudes were separated from middle positions (Neuman, 2000). After a pre-test, certain questionnaire items were modified to eliminate ambiguity. 150 questionnaires were sent out to ESSEs and of the 103 respondents, only 52 fully completed the questionnaires. The study could, hence, yield a response rate of 24%. Data analysis was conducted in two stages: (1) univariate analysis to summarize the information collected on the enterprises and their SEF; and (2) Exploratory Factor Analysis (EFA) on the data gathered on the enterprises’ internal factors.

Of the 20 industries that responded to the questionnaire, food, beverages (14%), sustainable fair fashion (13%), retail and e-commerce sector (10%) take the lead in this mission-driven purpose. The responses were mainly from young micro enterprises (67%), of which almost half (46%) have been established between one to four years and are located in the *DACH* region of Europe (89% in total).

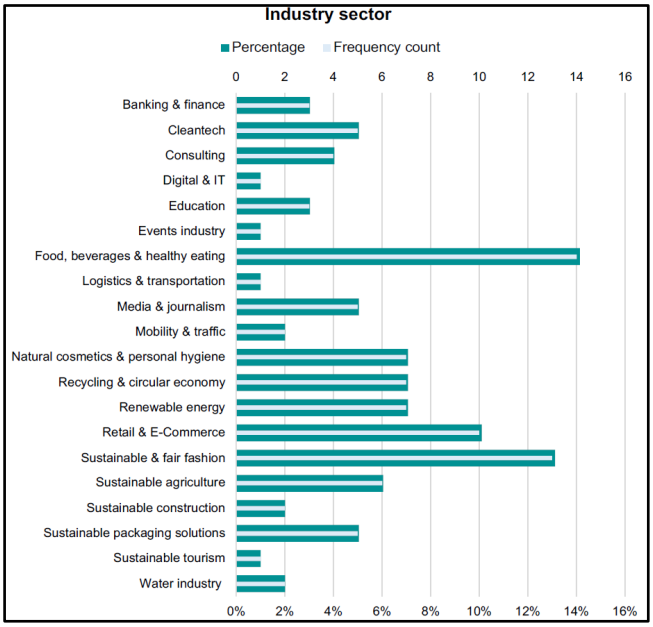

Figure 2: Industry Sector

It was crucial to scrutinize the SEF i.e. mission-driven SEs which place environmental and social impact on par with their economic success. The boxplot determined that the environmental objectives (with a median of 40%) were mainly prioritised over social (with a median of 30%) and economic value creation (with a median of 30%).

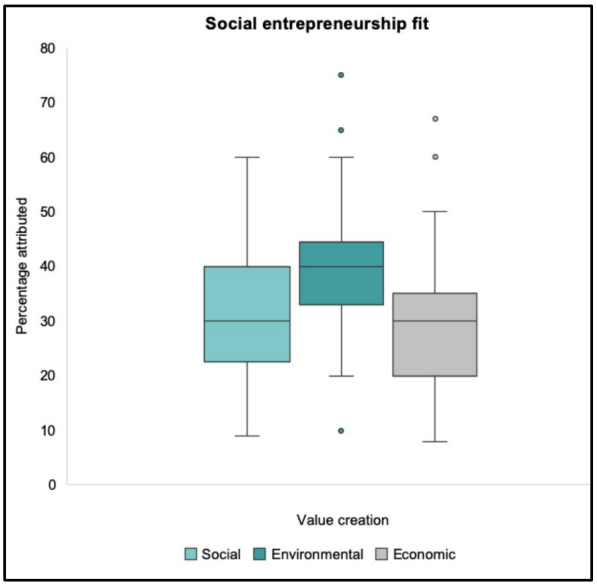

Figure 3: Box Plot, Social Entrepreneurship Fit

In this study, EFA is applied to reduce the number of internal factors from 50 to a smaller set of factors that explain the eco-innovativeness of ESSEs. A series of eight EFAs were conducted on each identified latent dimensions of the conceptual model: (1) entrepreneur (2) organisational structure (3) organisational culture and climate (4) vision and strategy (5) resource management (6) creativity and idea management (7) knowledge management (8) open innovation and collaboration. Next, the principal component analysis (PCA) and the orthogonal factor rotation method *Varimax* were applied to test the probable violation of the EFA assumptions as well as to examine the dimensionality of the eight dimensions, respectively. The stopping rules for factoring i.e. latent root criterion, percentage of variance criterion and parallel analysis were also performed. Finally, the factor structure adequacy was also tested. For instance, factor loadings $\geq$ 40 were considered as significant and set as the cut-off value. Similarly, significant cross-loadings [items loading on more than one factor > 40] were not shunned by deleting double-loading items, but instead, were viewed as an indicator of the factor on which it loads with higher loading (Maskey *et al.,* 2018). Also, factors were considered adequate when they were theoretically meaningful (Watkins, 2018) and showed a minimum of two salient factor loadings with internal consistency reliability of ≥ 60 measured by Cronbach's alpha ≥ 70 desirable, but ≥ 60 acceptable in exploratory research, as per Hair *et al.* (2019).

4. Results

Preliminary analysis of the statistical assumptions of EFA determined that the correlation among the variables was appropriate for factor analysis. Table 1 shows the results of Bartlett's test of sphericity and the KMO measure of sample adequacy for each of the latent dimensions.

Table 1: KMO and Bartlett Test

Dimension	KMO	Bartlett
Entrepreneur / manager	.732	.000
Organisational structure	.776	.000
Organisational culture & climate	.733	.000
Vision & strategy	.740	.000
Resource management	.701	.000
Creativity & idea management	.645	.000
Knowledge management	.768	.000
Open innovation & collaboration	.672	.000

The Bartlett tests were significant (p=.000), and apart from two, the KMO statistics were above the desired value of .70 for conducting a factor analysis. Being close to .70, the KMO values of .645 and .672 still fall within the acceptable level (> 50).

The results of the EFAs carried out on each of the eight dimensions of the conceptual model highlight the salient internal factors that influence each dimension. In the case of *entrepreneur*: the two main factors that emerged were the *characteristics of the entrepreneur* and *experience and leadership style.* For the second dimension, *organisational structure*: *organic and flat structure* and *flexibility and responsiveness* were the main factors that appeared.

Table 2: Rotated Component Matrix entrepreneur and organizational structure

Rotated Component Matrix

	Component	
	1	2
Founder's personality	.845	
Entrepreneurial orientation of the founder / manager	.812	
Sustainability orientation of the founder / manager	.694	
Managerial experience of the founder / manager		.905
Green transformational leadership style of the founder / manager	.425	.716
Cronbach's alpha	.744	.627

Rotated Component Matrix

	Component	
	1	2
Lack of hierarchy	.837	
Little bureaucracy & administrative processes	.720	
Permeable business boundaries	.669	
Responsiveness to changes & opportunities		.865
Informal & fast communication channels		.694
Flexible organisational structure		.653
Cronbach's alpha	.688	.683

In the third dimension, *organisational culture and climate*: three main factors were observed: *culture of experimentation and learning-by-failing*; *employee participation and job variety*; thirdly, *eco-innovation orientation*. The fourth dimension, *vision and strategy* highlighted *long-term sustainability* and *clear communication of innovation and sustainability*.

Table 3: Rotated Component Matrix organisational culture and climate and vision and strategy

Rotated Component Matrix

	Component		
	1	2	3
Freedom for risk taking & experimentation	.842		
Tolerance for mistakes & learning-by-failing	.733		
Employee empowerment & autonomy	.497		
Variety of job tasks		.803	
Participative decision making	.422	.631	
Environmental culture		.588	.495
Culture of innovation			.853
Availability of creative time for employees			.640
Cronbach's alpha	.683	.605	.509

Rotated Component Matrix

	Component	
	1	2
Environmental company policies & strategies	.822	
Sustainability vision & strategy	.811	
Long-term strategic focus	.647	
Clear communication of vision	.545	.442
Innovation strategy		.936
Cronbach's alpha	.674	.427

The fifth dimension, *resource management* indicated three important factors: *qualification and diversity of the workforce*, *availability of resources and green training* and *green motivation of employees.* In the sixth dimension: *creativity and idea management*, *employee and team creativity* and *green creativity approaches* were emphasised upon.

Table 4: Rotated Component Matrix resource management and creativity and idea management

Rotated Component Matrix

	Component		
	1	2	3
Qualified & skilled employees	.829		
Technological expertise	.706		
Diverse & interdisciplinary workforce	.688		
Sustainability training & development		.858	
Access to financial resources		.738	
Intrinsically motivated employees			.833
Green shared values of employees		.525	.619
Cronbach's alpha	.655	.648	.329

Rotated Component Matrix

	Component	
	1	2
Employee idea contribution	.892	
Employee creativity	.844	
Team creativity	.761	
Green creativity through biomimicry		.882
Green creativity through eco-design		.819
Rewarding innovative ideas (removed)		.482
Cronbach's alpha	.807	.730

The seventh dimension, *knowledge management* denoted internal knowledge development and utilization, which describes how the organization uses the knowledge held by its employees, and generates new knowledge through environmental R&D. The second factor was external knowledge acquisition & organizational learning. The eight dimension *open innovation and collaboration* captured *collaboration with external actors*; secondly, *collaboration with partners from the value chain*.

Table 5: Rotated Component Matrix knowledge management and open innovation and collaboration

Rotated Component Matrix

	Component	
	1	2
Environmental Research & Development	.828	
Industry knowledge	.791	
Internal knowledge sources	.592	.519
Utilisation of new knowledge	.557	.487
Organisational learning		.767
Knowledge creation & sharing		.694
External knowledge sources	.465	.530
Cronbach's alpha	.747	.526

Rotated Component Matrix

	Component	
	1	2
Collaboration with local government	.909	
Collaboration with universities and/or research centres	.858	
Collaboration with environmental groups	.803	
Collaboration with suppliers		.857
Collaboration with customers through user experience		.797
Collaboration with business partners		.635
Cronbach's alpha	.838	.680

These salient internal factors that were identified at the meso–level to determine the innovativeness of ESSEs, were adopted and adapted to the conceptual model as illustrated below in figure 4.

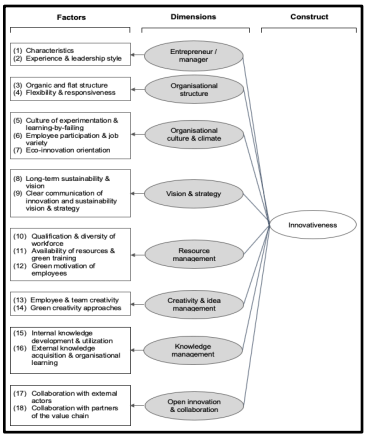

Figure 4: Adapted conceptual model (Hoefer, 2019, p. 75)

5. Discussion and interpretation

Thus, it can be said that the innovativeness of ESSEs is *multidimensional* as well as of internal origin in nature confirming our findings on the multidimensional nature of ESSEs' innovativeness by Lawson and Samson (2001), Hogan *et al.* (2011), and Iddris (2016). The *entrepreneurs* of ESSEs appear to have specific characteristics like entrepreneurial and sustainability orientation, high recognition of environmental opportunity, reactiveness, risk tolerance for innovative solutions to complex environmental problems and positive influence of leadership in driving innovation. These findings are in line with studies by Lumpkin *et al.* (2013), Madill *et al.* (2010), and DiVito and Bohnsack (2017).

The *organic and flat structures* with low levels of hierarchy and little bureaucracy among ESSEs stimulate intercommunication within the diverse workforce and give room for individual expression. In view of their organisational structure, flexibility and responsiveness to opportunities and changes are suggested as important. ESSEs often operate in uncharted territory dealing with uncertainty when trying to find innovative sustainable products and services. Thus, our findings are consistent with Lawson and Samson (2001) and Bos–Brouwers (2010). Parzefall *et al.* (2008) postulate that *organisational culture and climate* provide stimulus for employee innovativeness. ESSEs' trial-and-error approach towards innovation processes promotes employee empowerment and encourages experimentation along with learning-by-failure. ESSEs emphasise employee participation and job variety. This is instrumental in motivating employees as it offers an opportunity for learning and personal growth. Their eco-innovation orientation is characterised by allowing employees sufficient time to explore on ideas and to think creatively. These findings are congruent with Keskin *et al.* (2013), Pereira and Vence (2012) and Pham *et al.* (2019). Furthermore, ESSEs' eco-innovative behaviour is strongly intertwined with their long-term sustainability *vision and strategy*. The clear communication of the companies' vision and mission statement establishes a shared green vision that paves the path and orientation for daily business operations. All ideas and projects are weighed against this vision, and their innovation and sustainability strategy determines the mobilisation and allocation of resources for feasible projects. These findings are congruent with Pham *et al.* (2019), who studied determinants of EI and stress the importance of a shared green vision.

ESSEs adopt a *human resource management* that provides a stimulus for innovation activities. They place high value on hiring a qualified and diverse workforce to fulfil tasks in the design phase of innovation. In this manner, those tasks do not need to be outsourced. Also, diversity prompts interaction and knowledge exchange among employees. These findings are congruent with research by Doherty *et al.* (2014) and Gast *et al.* (2017), who find that environmental and social missions provide intrinsic motivation. Moreover, ESSEs make financial resources and green trainings available to its employees to drive innovation, operation and competition. Sustainability trainings and development also enhance the companies' eco-mindedness. This confirms Jenner (2016), who found that participants valued access to financial resources to drive innovation. Lastly, employees' green motivation is found to be an asset for developing innovation as a favourable environment and culture encourages the conception of new products and services. Furthermore, ESSEs adopt eco design and biomimicry in their innovation process to develop more environmental benign product/service designs by assessing the environmental effects and risks of a product. Moreover, ESSEs build innovation capability through internal *knowledge development and idea utilisation*, as well as acquisition of external knowledge and organisational learning to induce eco-innovation within their organisations. ESSEs design their structure and culture such that

they prompt interaction and knowledge sharing among employees and accumulate specialised knowledge necessary for innovation through internal environmental R&D, as proposed by Klewitz and Hansen (2014) and Adams *et al.* (2012). ESSEs are found to leverage the advantages associated with an organisational learning orientation, which is rooted in their learning-by-failure culture. They also make full use of external knowledge sources. This is in line with Cai and Li (2018, p. 111), who state that "the process of eco-innovation is actually environmental knowledge accumulation, integration, and utilisation." Lastly, ESSEs actively seek collaborative networks *with external actors* like universities, research institutes, environmental groups, local governments and partners from the value chain, i.e. business partners (Martínez–Román and Romero, 2017; Dangelico, 2016). Since ESSEs are often faced with resource shortcomings, those networks can be the missing link in development and support in times of need (Albort–Morant *et al.,* 2018). The ESSEs are also found to attribute great importance to the open strategy-approach to innovation.

6. Conclusions

This study has several limitations. The non-probability convenience sampling does not represent the entire population due to the low sample size of 52. Also, the study focuses on the internal capability of ESSEs to develop ESIs, thus, captures firm–specific internal factors only. Other external determinants the so-called "regulatory push/pull" and "market pull factors," that also influence the ESIs are outside the scope of this study. The conceptual model only explains the internal factors that determine the innovativeness of ESSEs. It does not give statistical evidence on the influence the eight dimensions have on ESSEs' innovativeness. Hence, the results do not draw inferences on correlation and causality. Despite those limitations, this study would have significant positive implications on theory, management and policies. EI literature predominantly focuses on large, profit–maximizing organisations. Less scientific work examines mission-driven SEs as their object of study. Hence, this study bridges the literature of social entrepreneurship, EI, and innovation management. It also develops and presents a theoretical conceptual model of the eco-innovativeness of ESSEs reflecting ESSEs internal ability to eco–innovate and delineates eight firm–related antecedents of eco-innovativeness. The findings provide a contextually insightful and focused understanding of the eco–innovation capability of ESSEs. As an exploratory research, the proposed conceptual model could be considered as a first comprehensive step towards a model of overall eco-innovativeness of ESSEs. It could be used as a guideline for prospective social entrepreneurs and as a self–assessment tool for existing social entrepreneurs to check their strengths and weaknesses. It could also serve as a guide to prospective stakeholders when making investment decisions. It is in the face of the current environmental and social challenges that more enterprises are needed with the "DNA" of ESSEs and SEs. An increased recognition and visibility of their efforts along with the social entrepreneurship model in general would be appreciated, as they are also taxpayers, job creators and above all climate crisis fighters.

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