

Research Article

The creation process of environmentally sustainable enterprises

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Abstract

Objective: To analyze the phases that involve the process of creating environmentally sustainable companies. **Method:** Qualitative approach, with an exploratory and descriptive purpose. The strategy employed was the multi-case study, carried out with five micro-companies in the state of Paraná. Data were collected through semi-structured interviews and observed under document analysis. **Originality/Relevance:** Evidenced the scarcity of studies that investigate how the sustainable environmental entrepreneurial process occurs, this study can be seen as an initial effort to help fill this gap. **Results:** The evidence demonstrated the sustainable environmental entrepreneurial process as a multifaceted phenomenon, which admits different configurations, depending on the profile of the individual responsible for it, the motivations for the creation of the business, the central proposal of the company and the context of development. **Theoretical/methodological contributions:** Proposing a specific structure in the field of sustainable environmental entrepreneurship, which allows for recursion between the phases and / or the non-coverage of any of them in the creation of such an undertaking. **Social contributions:** The proposed model can guide entrepreneurs entering the creation of environmentally sustainable companies.

Keywords: Entrepreneurship; Entrepreneurial process; Sustainable entrepreneurship; Environmental sustainable entrepreneurial process

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Resumo

Objetivo: Analisar as fases que envolvem o processo de criação de empresas ambientalmente sustentáveis. **Método:** Abordagem qualitativa, com propósito exploratório e descritivo. A estratégia empregada foi o estudo de multicase, realizado com cinco microempresas do estado do Paraná. Os dados foram coletados por meio de entrevistas semiestruturadas e observados sob a análise documental. **Originalidade/Relevância:** Evidenciada a escassez de estudos que investigam como o processo empreendedor sustentável ambiental ocorre, este estudo pode ser visto como um esforço inicial para auxiliar o preenchimento dessa lacuna. **Resultados:** As evidências demonstraram o processo empreendedor sustentável ambiental como um fenômeno multifacetado, que admite diferentes configurações, a depender do perfil do indivíduo por ele responsável, das motivações para a criação do negócio, da proposta central da empresa e do contexto de desenvolvimento. **Contribuições teóricas/metodológicas:** Proposição de uma estrutura específica ao campo do empreendedorismo sustentável ambiental, que possibilita a recursividade entre as fases e/ou a não abrangência de alguma delas na criação de um empreendimento de tal natureza. **Contribuições sociais:** O modelo proposto pode nortear empreendedores entrantes na criação de empresas ambientalmente sustentáveis.

Palavras-chave: Empreendedorismo; Processo empreendedor; Empreendedorismo sustentável; Processo empreendedor sustentável ambiental.

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INTRODUCTION

Sustainable entrepreneurship can be understood as the act of exploring, developing and implementing business solutions capable of harmoniously integrating environmental, social and economic dimensions (Schaltegger, Beckmann and Hockerts, 2018). Its evolution as a research subfield is due to the increased demands for production and consumption systems better aligned with ideals of sustainability (De Bruin, 2016), situation in which new forms of business performance are required (Muñoz and Cohen, 2018).

The difficulty in promoting balance between the aforementioned spheres makes room for the responsible entrepreneur to prioritize the line of action that presents greater conformity in relation to his personal purposes (Dickel, 2018), resulting in typologies of practice. Among these, there is sustainable environmental entrepreneurship, the focus of this study.

Established in the understanding that any entrepreneurial action focused on the environmental needs to integrate economic and social aspects to obtain satisfactory results (Domańska, Żukowska and Zajkowski, 2018), in entrepreneurial activities of this nature, it is postulated that the environmental aspect act by leading the decisions of the entrepreneur since the initial stages of business creation (Demirel, Rentocchini, and Tamvada, 2019).

The perspective of the organizational creation process is widely used in the field of conventional entrepreneurship (Borges, Filion, and Simard, 2008), as well as in the scope of sustainable environmental entrepreneurship; in this, however, as it is a still recent research subfield, there is little understanding of how such a company is established (Demirel, Rentocchini, and Tamvada, 2019).

Seeking to shed light on the subject and assist in filling the demonstrated gap, in this study, the following question was used: how does the process of creating environmentally sustainable enterprises occur? The answer was given through the construction of a seven-phase conceptual model, based on a multi-case study, carried out with five micro-enterprises located in the state of Paraná.

In order, then, to present such a conceptual model, this research was subsidized, initially, by reviewing the literature on the topic; and, subsequently, by the data collected in the multi-case study already mentioned, explaining the method used and discussing the results found. Following the structuring of the text, the practical / theoretical implications, the main contributions and limitations of the study, as well as suggestions for future research are highlighted.

THEORETICAL FRAMEWORK

Environmentally Sustainable Entrepreneurship and Sustainable Entrepreneurial Process

Environmentally sustainable entrepreneurship is based on the argument that any entrepreneurial action seeking to benefit the environment needs to integrate economic and social aspects to obtain satisfactory results (Domańska et al., 2018). Increased awareness of environmental issues, attributed in part to organizations, has spurred studies on the phenomenon in recent years (Schaltegger et al., 2016).

Despite the remarkable growth in the area (Gast, Gundolf, and Cesinger, 2017), few studies aimed at understanding how organizations of this nature are created have been developed (Matzembacher et al., 2019). In this context, the procedural approach is envisioned, as relevant to assist in this task, being considered in the present study as the set of activities developed to create an enterprise capable of developing activities with positive impacts on the environment and society (Belz and Binder, 2017).

Among the studies conducted on a sustainable entrepreneurial process, it is noteworthy that although there are those who consider two dimensions of sustainability as the model used by Corner and Ho (2010) and Keskin, Diehl, and Molennar (2013), by virtue of the definition of environmentally sustainable entrepreneurship used here, these models will not be addressed.

In the list of studies that deal with the creation of sustainable enterprises considering a triple basis, there is the research of Choi and Gray (2008). In this, the authors proposed a five-phase model (recognition of an opportunity; resource acquisition; launching the enterprise; management of growth and business harvesting) suggesting how a sustainable organization is created. However, none of the phases of the structure is specific to sustainable entrepreneurship generating criticism, giving the model a generic status, easily applicable to enterprises of different typologies.

More recently, Belz and Binder (2017) conducted a study of four ventures and proposed that sustainable enterprises are created through six phases (recognition of a social/environmental problem; recognition of a social/environmental opportunity; development of a dual-based solution; development of a triple-based solution; financing and training of organization and creation/entry into a sustainable market). As main conclusion the authors points out that the three dimensions of sustainability are not integrated at the beginning of the process, but during its development.

In this sense, the creation of a sustainable enterprise has its origin, if not in the recognition of an opportunity, in some factor very close to it. Considering entrepreneurial opportunities as a fundamental part of the entrepreneurial process (Shane and Venkataramn, 2000) it is warned that, unlike conventional entrepreneurship in which exploitation is essentially motivated by economic gain, opportunities in sustainable entrepreneurship need to allow the creation of systems that maximize integrated environmental, economic and social solutions (Boszczowski and Teixeira, 2012).

To investigate how these opportunities in sustainable development are discovered, Patzelt and Shepherd (2011) developed a model composed of dimensions of knowledge of the natural/communitarian environment; perception of threat to the natural/communitarian environment; altruism towards others and entrepreneurial knowledge. The focus on which characteristics of the entrepreneur can help facilitate the process, represents a significant contribution of this study.

To test Patzelt and Shepherd (2011) model, Choongo et al. (2016) developed a quantitative research with 220 entrepreneurs in Zambia. The results offered limited support by demonstrating that knowledge about the natural/communitarian environment and perceived threats are insignificant in discovering sustainable opportunities. On the other hand, the authors partially supported the idea that altruistic individuals with previous knowledge have an easier time identifying opportunities to undertake sustainably.

Recently, another empirical study using Patzelt and Shepherd (2011) model, was developed by Hanohov and Baldachino (2018). Conducting semi-structured interviews with eight Berlin entrepreneurs, the author's results support and expand the tested model in three points (knowledge of the natural/communitarian environment, motivations and entrepreneurial knowledge), evidencing that opportunity to spend periods in other countries and establish contact with different cultures can enrich perceptions capable of assisting in the development of sustainable business ideas. Additionally, works and projects previously executed are sources of strengthening the entrepreneur's knowledge and that personal ambitions can act as a motivational factor, excluding the understanding of solely altruistic motivation (Hanohov and Baldachino, 2018).

From the mention of structures and phases that lead to the recognition of sustainable opportunities and the configuration of the creation of an enterprise of this nature, the models of Belz and Binder (2017) and Patzelt and Shepherd (2011) were used as a basis for the elaboration of the conceptual model guiding this study, as presented in the following sub-item.

Conceptual Research Model

Seeking to investigate phases that permeate the creation of environmentally sustainable enterprises, in this study, two models were selected to support a conceptual model proposition.

The first of these is that of Patzelt and Shepherd (2011), whose choice is justified by the fact that, although a substantial part of the existing structures representing the entrepreneurial process begin by addressing an already recognized opportunity,

creates/ enters a market focused on sustainability. In addition to presenting specific activities of the subfield investigated here, such as the creation of a sustainable solution.

If, on the one hand, the Patzelt and Shepherd (2011) model had aspects extended beyond the moment when a sustainable opportunity is recognized, in the other hand, in the proposed by Belz and Binder (2017) model, additional changes were made to allow adaptation to the context of environmentally sustainable entrepreneurship.

Thus, the phase presented by Belz and Binder (2017) as an aspect that initiates the sustainable entrepreneurial process, entitled "recognition of environmental/ social problems" was replaced by "perception of threat to the natural/community environment" as presented by Patzelt and Shepherd (2011). This change has the consequence that the environmental problem recognized by the entrepreneur occurs specifically in the environment in which his organization is constituted.

The second phase of development a two-dimensional solution (Belz and Binder, 2017) was removed from the proposed model. As a justification, a coherence with the definition of environmentally sustainable entrepreneurship is adopted in this research, which postulates that, given the independence of society and economy in relation to the environment (Schaltegger et al., 2018), any solution focused on environmental issues will have an impact on society even if it is not directly associated with the social dimension of sustainability. In this case, the impact will be a secondary result of meeting the environmental dimension.

The illustrated model can be viewed in Figure 1 and is discussed as follow.

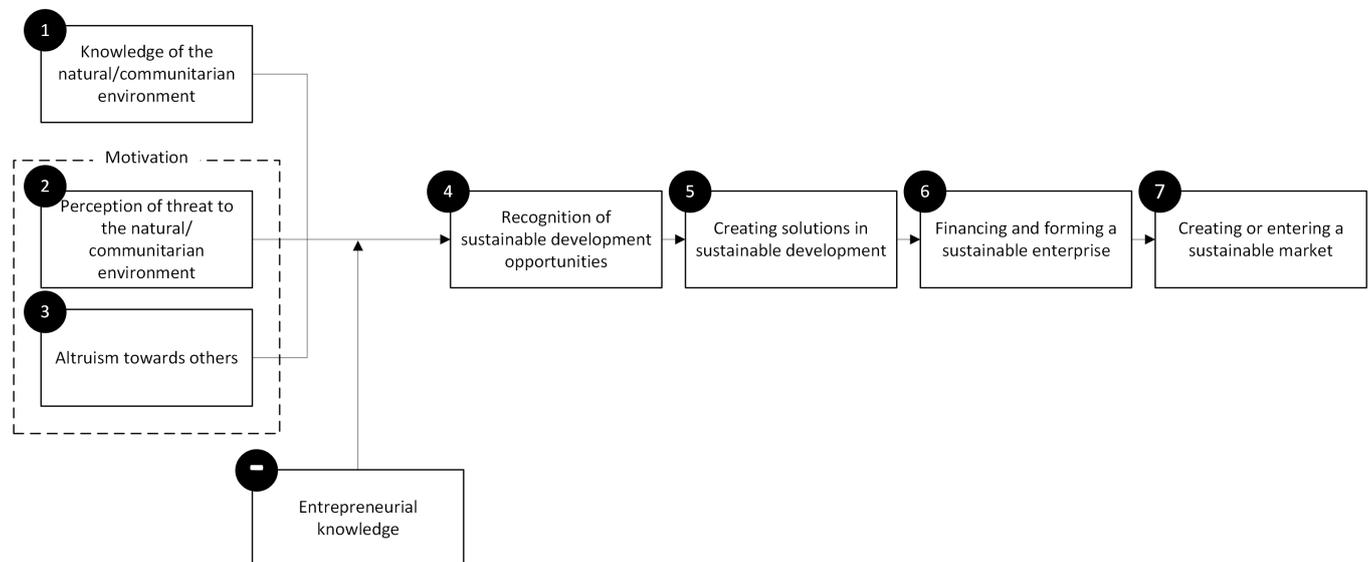


Fig. 01

Conceptual model of the research

Source: Adapted from Belz and Binder (2017) and Patzelt and Shepherd (2011).

understanding which factors help in the process of discovering a potential opportunity (Patzelt and Shepherd, 2011) it is a relevant factor in a holistic approach to the phenomenon, which deserves to be observed.

The second is that of Belz and Binder (2017), whose choice is justified by encompassing all the phases that comprise the creation of a sustainable enterprise from the moment an opportunity is recognized, until the moment the entrepreneur

In the illustrated model (Figure 1), the following are pointed out: (1) the need for greater knowledge of entrepreneurs of the natural/community environment; (2) emphasizes in their ability to perceive threats that surround such an environment; (3) preponderantly concerned with the well-being of other people; (4) recognizing environmentally sustainable opportunities aimed at coping with such threats (if any, prior knowledge of entrepreneurial activities will strengthen these relationships) (Patzelt and Shepherd, 2011); (5) creation of solutions capable

of generating benefits to the local community in a particular way and society in general; (6) financing and creation of organization takes place, which, depending on the degree of innovation, may (7) create new markets or enter existing ones (Belz and Binder, 2017).

The model that will guide the conduct of the research is presented and discussed, in the following section, the methodological procedures are emphasized.

METHODOLOGICAL PROCEDURES

The present study was conducted following parameters of a mixed research logic (Ali and Birley, 1999), given that, although the existing theory was used to elaborate a conceptual model, this factor was not characterized as an impediment for emerging aspects to be identified and integrated throughout the fieldwork. It is a qualitative research (Creswell and Creswell, 2018), with exploratory (Neuman, 2014) and descriptive (Thornhill, Saunders and Lewis, 2009) purpose.

Due to the nature of the undertaken question, the multiple case study strategy (Yin, 2015) proved to be appropriate to its realization. In studies using this strategy, Eisenhardt (1989) advocates the difficulty in establishing an exact number of cases, a situation in which theoretical saturation is pointed out as relevant to assist in this task. In this study, the number of cases was delimited when the collected data were considered sufficient to meet the research objective (Glaser and Strauss, 1967), resulting in the selection of five environmentally sustainable micro-enterprises operating in the tourism sector, located in the state of Parana.

Arguments that justify the selection of projects framed in this profile are necessary. (a) with regard to size, it is considered that the relevance of micro-enterprises for the country's socioeconomic development (Sebrae, 2014) linked to the fact that, previous studies establish that a significant part of organizations with sustainable orientation is born in the context of small and medium-sized enterprises (Demirel et al., 2019), what demonstrates the importance of performance that they can play in the search for the transition towards a more sustainable future; (b) with regard to the option for the tourism sector, in addition to being characterized as one of the fastest growing in the world (World Tourism Organization, 2018), its activities are strongly dependent on the harmony between entrepreneurship and sustainability actions (Crnogaj et al., 2014).

Following Table 1, the criteria used to select enterprises are summarized.

Criterion	Premise
Environmentally sustainable enterprise	Enterprises with an environmentally sustainable focus that develop actions aimed at preserving the environment (protection of forests, flora, fauna), in addition to actions in business management seeking to minimize the environmental impacts of their activities (waste management, saving water, electricity) (Gast, Gundolf, and Cesinger, 2017).
Micro-enterprise	Micro-enterprise: an enterprise whose gross annual revenue is equal to or less than R\$ 360 thousand (Sebrae, 2014).
Enterprise active in the tourism sector	Organizations that offer tourism products or services to an individual or collective demand (Ministry of Tourism, 2007).

Tab. 01

Criteria observed in the selection of cases

Source: Elaborated by the authors.

Based on the previously established criteria, five micro-enterprises were selected and have their profiles detailed in Table 2.

	Case A	Case B	Case C	Case D	Case E
Year of Legal Constitution	2016	2001	2018	1999	2001
Opening Year	2019	2001	2017	2010	2001
Size	Micro-enterprise	Micro-enterprise	Micro-enterprise	Micro-enterprise	Micro-enterprise
Number of Founding Partners	01	01	03	02	02
Branch of Activity	Accommodation	Tour operator	Tour operator	Local craft trade	Rural tourism

Tab. 02

Profile of enterprises

Source: Elaborated by the authors.

As a source of evidence, semi-structured interviews (Yin, 2015) were conducted between July and December 2019 with the entrepreneurs responsible for founding these enterprises from a script used was previously discussed in a section with specialists and subsequently validated. As a criterion of validity and reliability, the interviews were recorded (Yin, 2015) with prior and documented authorization from the participants and later, fully transcribed. At the end of the transcripts, the documents in PDF format were sent by e-mail to the entrepreneurs for consultation and confirmation of the content (Table 3).

Case	Entrepreneur	Data (2019)	Duration	Interview Location	Transcribed Pages
A	A	02 Jul	42 min	Enterprise in focus (business hours)	13 p.
B	B	05 Aug	45 min	Enterprise in focus (business hours)	15 p.
C	C1	07 Aug	33 min	Local restaurant	9 p.
	C2	07 Aug	57 min	Local restaurant	16 p.
	C3	28 Aug.	23 min	Residence	8 p.
D	D	13 Nov.	46 min	Enterprise in focus (business hours)	15 p.
E	E1 and E2	30 Nov.	1h4min	Organic Fair	17 p.

Tab. 03

Detailing of interviews

Source: Elaborated by the authors

These documents were used to supplement and, in some situations, confirm the information, documents we analyzed (Godoy, 1995). In Table 4, a parameter of the available documents in each case is presented.

Following the recommendations of Yin (2015), criteria of validity (construct and external) and reliability were adopted in Table 5.

INTERNAL DOCUMENTS (Produced by the enterprise)					
	Case A	Case B	Case C	Case D	Case E
Site	-	X	X	-	X
Graphics in general (Flyers, Folders, Cards, etc.)	-	X	X	-	X
Projects	-	X	-	-	-
Other	Social Network	Social Network	Social Network	Social Network	-

EXTERNAL DOCUMENTS (Produced outside the Enterprise/by third parties)					
	Case A	Case B	Case C	Case D	Case E
Legal records (CNPJ, State Registration, Licenses, etc.)	X	X	X	X	-
Environmental License	X	-	-	-	-
Company Reports	X	-	X	X	X

Tab. 04

Parameter of the documents used

Source: Elaborated by the authors .

Criterion	Tactic adopted in research
Construct validity	The study used different sources of evidence, more specifically semi-structured interviews and document analysis.
External Validity	The different cases that comprised the research fulfilled the replication logic.
Reliability	The information and other research data have been stored and can be accessed by the interested public.

Tab. 05

Validity and Reliability Criteria

Source: Prepared by the authors based on Yin (2015).

The collected data were analyzed using the content analysis technique (Bardin, 2004), involving: (a) pre-analysis - all interviews were transcribed and read in full and had notes made; (b) exploitation of the material- use of the Atlas.ti software to assist in coding the information obtained from the interviews (in all, 43 codes related to the dimensions of the conceptual model and emerging from the field were assigned); and (c) treatment of results, inference and interpretation- the cases were analyzed using the cross-case analysis technique (Eisenhardt, 1989).

In Table 6, a parameter of these codes and their alignment with the categories investigated, is demonstrated. For emerging elements, a highlight in italic has been assigned.

PRESENTATION AND ANALYSIS OF RESULTS

In this section, the data will be discussed based on the categories present in the proposed model. It is worth mentioning that although no case presents a similar sequence, the discussion will be carried out following the structure of the model.

Knowledge of the Natural/Communitarian Environment

In the category, the evidence supporting a relationship of the natural environment and communitarian was identified in four cases (Table 7), demonstrating individuals who had knowledge

because they already live in those localities (A and E) or, by experiences obtained with sightseeing tours in the regions (C and D):

Case A	"I've always lived in this neighborhood, I've always lived with these neighbors and I really believe that to be connected, to build an environmental relationship, you have to relate to the place." (Entrepreneur A)
Case C	"The name has to do with why we started in the backyard of our home, in Morro do Canal, Anhangava, which were hills that we have been climbed for a long time, before the enterprise existed". (Entrepreneur C2).
Case D	"The Island is a huge passion of mine, since the first day I got to know it, I said I was going to live here". (Entrepreneur D)
Case E	"First, we went to live on the farm, then came the business". (Entrepreneur E2)

Tab. 07

Knowledge about the natural/ communitarian environment

Source: Elaborated by the authors.

Based on these findings and, considering that only in case B a previous relationship was non-existent, it is considered that, unlike the study by Choongo et al. (2016), in this research, the individuals' prior knowledge may have been significant for the recognition of a sustainable opportunity or even the selection of the place in which it would be explored.

Perception of Threat to the Natural/ Communitarian Environment

In this category, we sought to understand whether environmental problems, when envisioned by entrepreneurs, were specific to the environment with which they had a previous relationship. The evidence captured demonstrated a distinct configuration from that proposed by the authors Patzelt and Shepherd (2011). This is because, in the three cases that environmental problems were identified, their perception occurred in macro contexts, presenting a better alignment with the category entitled "recognition of ecological problems", proposed by Belz and Binder (2017) (Table 8).

Case A	"I visualized the impact of accommodation in some terms: The consumption of water, energy, and this transit of people because for you to go to a place you need to release CO2, people who walk are rare, imagine traveling." (Entrepreneur A)
Case B	"To this day, we face several environmental problems in Brazil. One of them was the lack of structure and services within the conservation units". (Entrepreneur B)
Case C	"The reconnection of people with nature that certainly causes other problems such as pollution, garbage, unnecessary wasting of water". (Entrepreneur C1)

Tab. 08

Recognition of ecological problems

Source: Elaborated by the authors.

The fact that the recognition of context-specific environmental issues has no influence on the discovery of sustainable opportunities was observed in the study by Choongo et al. (2016) and received support in this study. Furthermore, the evidence demonstrates that the entrepreneur's background on environmental issues can help him recognize environmental problems in general contexts (Hanofov and Baldachino, 2018) and, subsequently, develop solutions to deal with these externalities in places with which they have some kind of relationship.

Assigned Codes	Categories of Analysis	Authors
Relationship with the natural/communitarian environment in which the enterprise was created {9-0}	Knowledge of the natural/communitarian environment	Patzelt and Shepherd (2011)
Recognized environmental problem {8-0}	Perception of threat to the natural/communitarian environment	Patzelt and Shepherd (2011)
Impulse to recognize environmental issues {2-0}		
Altruism towards the environment {7-0}		
Market gaps {9-0}		
Need to "earn a living" {2-0}		
Passion for what you do {6-0}		
Satisfy their own quality of life aspirations {13-0}	Motivation	Patzelt and Shepherd (2011)
Green values {5-0}		
Desire to have new professional experiences {1-0}		
Dissatisfaction with previous employment {5-0}		
Addressing a potential opportunity {3-0}		
External drive for opportunity recognition {5-0}	Recognition of opportunities in an environmentally sustainable development	Patzelt and Shepherd (2011)
Recognized environmental opportunity {5-0}		
Opportunity assessment {14-0}		
Opportunity exploration {10-0}		
Professional experience in creating previous enterprises {4-0}	Entrepreneurial knowledge	Patzelt and Shepherd (2011)
Professional experience in the management area {4-0}		
Experience in entrepreneurial ecosystems {3-0}		
Participation in courses/ workshops and the likes focused on entrepreneurial activities {9-0}		
Creation or use of environmental solutions that valued the conscious use of water {5-0}		
Creation or use of environmental solutions that valued the conscious use of energy {2-0}		
Creation or use of environmental solutions that valued the proper waste management {7-0}	Creating solutions in environmentally sustainable development	Belz and Binder (2017)
Creation or use of environmental solutions that valued the protection or conservation of local wildlife {3-0}		
Creation or use of environmental solutions that valued the protection or conservation of forests and other local natural resources {4-0}		
Creation or use of environmental solutions aimed at instilling environmental awareness in customers {16-0}		
Creation or use of environmental solutions aimed at bringing information and providing customer contact with the environment {12-0}		
Creation or use of environmental solutions that valued the establishment of partnerships with sustainable enterprises {2-0}		
Financing source used {7-0}		
Organization of facilities {7-0}		
Equipment organization {3-0}		
Hiring employees {2-0}	Financing and training of an environmentally sustainable enterprise	Belz and Binder (2017)
Difficulties in implementing environmentally sustainable actions {1-0}		
Difficulties with bureaucratic issues {2-0}		
Difficulties in making work with natural materials feasible {1-0}		
Difficulty in maintaining the focus solely on the enterprise being created {2-0}		
Difficulty in linking theory with practice {4-0}		
Conducting a specific course to understand the dynamics of the sector {4-0}		
Performing services informally {9-0}		
Organization of bureaucratic issues {3-0}	Creating or entering a sustainable market	Belz and Binder (2017)
Legal constitution of the enterprise {6-0}		
Inauguration of the enterprise {6-0}		
Performing the first (formal) service {4-0}		

Tab. 06

Codification Parameter Atlas.ti software

Source: Elaborated by the authors.

Motivation

Altruism with others as an aspect that could motivate entrepreneurs (Patzelt and Shepherd, 2011) was not identified in any of the cases. It is argued that this may have occurred due to the nature of environmentally sustainable entrepreneurship, a situation in which, even in cases where an interest in raising society's awareness of environmental externalities was identified, the concern of individuals was only with the environment (A, B, C2 and D).

In accordance with the results found by Hanohov and Baldacchino (2018), it was noted that in all cases entrepreneurs were motivated by a series of internal and external drivers, among which are: market gaps, need to "earn a living", passion for what they do, satisfy their own aspirations for quality of life, desire to have new professional experiences, dissatisfaction with previous employment and engaging a potential opportunity. These findings demonstrate that sustainable entrepreneurs can be driven to create an enterprise by aspects unique to this typology or similar to those found in other categories of entrepreneurs (Linnannen, 2005) (Table 9).

	A	B	C1	C2	C3	D	E1	E2
Altruism in relation to the environment	X	X		X		X		
Desire to have new professional experiences			X		X			
Dissatisfaction with previous employment			X	X		X		
Need to "make a living"						X	X	
Passion for what you do/ green values	X	X						
Satisfy their own quality of life aspirations	X	X		X				
Attending a potential opportunity					X			X
Market gaps	X	X	X	X		X		

Tab. 09

Motivation

Fonte: Elaborated by the authors.

It is noteworthy that these aspects, although not deductively investigated in the study, had already been found in previous studies on the subject (Schlange, 2006; Kirkwood and Walton, 2010; Fischer, Mauer, and Brettel, 2018). This co-existence of factors that motivate the creation of a sustainable enterprise can be envisioned as a result of typologies of entrepreneurs as stated in the studies of Linnannen (2002) and Walley and Taylor (2002). These typologies demonstrate that both individuals more engaged with the environmental cause (A, B, C2 and D), and individuals more interested in obtaining economic gain (C1, C2 and E2) can, within their possibilities and aspirations, contribute to issues of sustainable development through the creation of an enterprise.

Recognition of an Opportunity in Environmentally Sustainable Development

This category was found in all cases and was permeated by different conditions: experience acquired from travelling (A) and professional experiences previously developed (B and D), both evidenced in the study by Hanohov and Baldacchino (2018).

In addition, an emerging element of fieldwork demonstrated the influence that external figures (C1 and E2) can play in this phase (Table 10).

Case A	"I always traveled a lot and stayed in many places, more collaborative platforms and I saw that there was not an accommodation format that they talked about". (Entrepreneur A)
Case B	"I saw that there was a lot to do, Brazil has a lot of potential and we had very few enterprises working with this inclination of offering different destinations, with this eco-friendlier footprint". (Entrepreneur B)
Case C	"We live in Quatro Barras, in front of Anhangava which is a mountain there in the region and then my mother looked outside and said: "Gee, why don't you do something related to tourism? You always liked travelling and stuff.". That start it, the seed had been planted". (Entrepreneur C1)
Case D	"When I thought about having a store here, I perceived an opportunity to sell the work I already presented, being a sales professional. I saw that it did not have this sustainability side, a proposal of ecological education". (Entrepreneur D)
Case E	"In 2000, the city launched rural tourism. So, we realized that we could enter this tourism process because we had a space that was available." (Entrepreneur E2)

Tab. 10

Recognition of an opportunity

Source: Elaborated by the authors.

Entrepreneurial Knowledge

In the research on entrepreneurial knowledge, it was identified that two entrepreneurs (C3 and D) had already created an enterprise and that one had already participated directly in the creation of an enterprise (C1). In addition, situations related to the theoretical knowledge acquired through the realization of entrepreneurial disciplines, courses and workshops (A, B, C2 and E1) and the experience in entrepreneurial ecosystems (A), aided with opportunities to be recognized.

These findings expand the dimension of entrepreneurial knowledge (Patzelt and Shepherd, 2011) beyond the practical question, encompassing the importance of theoretical knowledge in the creation of environmentally sustainable organizations (Tabela 11).

Case A	"I did an optional subject on entrepreneurship in university and much of my ecosystem is already entrepreneurial, so this provides an experience". (Entrepreneur A)
Case B	"I had never undertaken a venture before. What we did a lot was courses in the area of environment and tourism. Some in management also at SEBRAE". (Entrepreneur B)
Case C	"I helped found Ca'dore, when I was in the idea phase, I was still with a partner. Then I joined Mondri with this other partner who was from Ca'dore. I stayed there for a year and then decided to start the Backyard." (Entrepreneur C1)
Case C	"During university we had a lot of creative projects and business plans. We did not open an entire enterprise but opened small areas of an enterprise in these matters". (Entrepreneur C2).
Case C	"I had already started a venture. I have music school, a studio". (Entrepreneur C3)
Case D	"I had a bar at night and then worked another four years with a snack bar". (Entrepreneur D)
Case E	"I took an entrepreneurship course focused on the area of tourism in order to understand the dynamics of the sector, because there are many things that sometimes you can't even imagine". (Entrepreneur E1).

Tab. 11

Recognition of an opportunity

Source: Elaborated by the authors.



Creating solutions in Environmentally Sustainable Development

The phase comprising the creation/ use of solutions in environmentally sustainable development (Belz and Binder, 2017) was also contemplated in all cases. In case A, by virtue of the recognized opportunity, the solution created was translated directly into the business architecture. In the other cases (B, C1, C2, C3, D, E1 and E2), the exploration was focused especially on proposals to raise awareness about environmental issues and other issues, as well as guidelines to properly deal with such externalities (Table 12).

Case A	"The whole conception of the enterprise was conceived focused on the environmental area, from the construction itself that led to the principles of permaculture, slow design, local materials and even with rainwater capture, efficient lighting, themes, related contents". (Entrepreneur A)
Case B	"We created programs directed at the national market, to take people on photographic expeditions, go with a nature photographer and he tells them what his experience is, the experience with nature. Or expeditions with a biologist to learn a little more about the fauna, flora and to interpret this environment". (Entrepreneur B)
Case C	"At the beginning of the activity we always do a briefing saying where we are and what our importance in that environment is. We take the staff and teach how to walk the trail, the importance of collecting your own garbage, the importance of not taking flowers, not taking plants". (Entrepreneur C2)
Case D	"I had with me that the t-shirt you get at some tourist spots, is difficult for you to wear because the knitwear is promotional, are not good and is that thing of tourism that not everyone likes. So, I wanted to remove this line, have quality fabric. When I managed to fit this recyclable cotton, which in addition to having a proposal, a very big positive appeal to the environment, has quality". (Entrepreneur D)
Case E	"It was a tourism experience, being taken to see a spring, there was the question of identifying the trees ... so there were these actions, of informative tourism too. The issue of care, management". (Entrepreneur E1).

Tab. 12
Creating solutions in environmentally sustainable development
Source: Elaborated by the authors.

Simultaneously in the environmental solutions created was the purpose of environmental awareness, a situation in which entrepreneurs articulated strategies so as to instigate environmental awareness in customers or provide information through contact with the natural environment.

Financing and formation of an environmentally sustainable enterprise

Although in the context of sustainable enterprises the financial issue was scored as one of the main obstacles (Choi and Gray, 2008), the research of the financing and formation phase (Belz and Binder, 2017) showed that in none of the cases analyzed this aspect represented significant difficulty. The reason for this can be attributed to the fact that entrepreneurs used their own resources, either because they needed a low value or, in cases of a larger investment, they had the necessary amount.

Moreover, in cases D and E1, the use of own resources occurred because these individuals did not find external sources according to their needs, either due to a lack of knowledge (D) or because they did not fit the criteria of existing programs (E1).

In the formation of the enterprise (Belz and Binder, 2017), while for entrepreneurs A, D and E1 significant time was dedicated to organize the physical structures that would sustain the enterprise, entrepreneurs B and C2 demonstrated that this issue was quite simple, given the small space needed (Table 13).

Case A	"Many things have been considered, including the reuse of materials, the idea to consume fewer new things". (Entrepreneur A)
Case B	"We started inside the apartment, in a room. So, the initial investments were two computers, a printer and a fax". (Entrepreneur B).
Case C	"We have a suitable space to put on the vests, climbing hardware, ropes, dry equipment, wash equipment". (Entrepreneur C2)
Case D	"(The idea of) having a small space that we could take care of and also be able to work a little less". (Entrepreneur D)
Case E	"I had to build more bathrooms because the legislation did not allow the unit's bathroom to be used by tourists, for example". (Entrepreneur E1).

Tab. 13
Enterprise formation
Source: Elaborated by the authors.

Creating or Entering an Environmentally Sustainable Market

In the phase of creation or entry into a sustainable market (Belz and Binder, 2017) it was found that in the cases investigated the provision of the first service occurred both in a short time after the legal establishment of the enterprise (B, E1), and after a long period aimed at making necessary adjustments (A). It became evident that some entrepreneurs began acting informally (C1, C2, C3) and, after some time of experience with the best structured services, entered the market formally.

PRACTICAL AND THEORETICAL IMPLICATIONS

Based on the proposed model, specific considerations for environmentally sustainable entrepreneurship can be made, are presented in this section.

The individual's knowledge about a given natural/communitarian environment, although not essential for the recognition of opportunities, is relevant for the selection of the environment in which the enterprise will be founded. Thus, although problems are recognized in macro contexts, the creation of the solution to deal with them will tend to be brought to the place where these entrepreneurs live. In practice, these considerations position the dissemination of knowledge about negative environmental externalities that plague humanity at the macro level as an initial impulse to allow solutions to be developed in local contexts.

Motivations for creating the organization revealed different aspects, none of them in accordance with the proposal of altruism towards people. This implication can be seen as possessing a more theoretical than practical potential. This is while at the same time that a co-existence of motivational aspects reveals profiles of sustainable entrepreneurs, in practice, this does not seem to significantly influence the social impacts arising from the creation of enterprises.

Theoretical knowledge in entrepreneurship was noted as an important element for the recognition of opportunities and creation of enterprises. This implication, while expanding the

dimension of entrepreneurial knowledge initially proposed, reveals that, in practice, entrepreneurship education can serve as an important aid tool for individuals to create their enterprises to provide support for actions even when in initial contact with entrepreneurial activities.

The recognition of opportunities proved to be permeated by different situations, highlighting the importance of acquiring personal and professional experiences, as well as the influence of third parties to assist in the perception of existing socioenvironmental gaps. In the theoretical context, these considerations make room for the assumption that sustainable opportunities will not necessarily be recognized by the entrepreneurs responsible for creating the organization. In practice, they point out that contact with different cultures/ environments promotes an increase in individuals' capacity to perceive possibilities for business performance in sustainable markets.

The analysis surrounding the dimension of creating environmentally sustainable solutions showed that the type of solution elaborated has a direct relationship with the activity explored. Still, the search to promote environmental awareness in society was unanimous in business independent of the central proposal. In the theoretical aspect, this consideration may reveal another specific characteristic of environmentally sustainable entrepreneurship: the purpose of disseminating environmental values through its activities.

Regarding the fact that the financial aspect was not noticed as difficulty in the creation of the enterprises analyzed in this study, it is considered that this result is due especially to the size of the enterprises investigated: micro-enterprises. Thus, it is possible that the financial issue is emerging as a major limiting factor in studies with larger enterprises.

Based on these considerations, the proposed model was reformulated. Its representation can be seen in Figure 2 and is discussed next.

The reformulated model (Figure 2) represents the proposition of a situation considered as the most complete set of phases in the process of creating an environmentally sustainable enterprise.

For this reason, and, consistent with the results of the analyzed cases, it is assumed that depending on the situation, one or another stage is no longer contemplated.

In the first five phases, field evidence demonstrated that it is not possible to emphatically establish which will be responsible for initiating the process. For this reason, the possibility of recursion proposed in these steps denotes that anyone can be responsible for initiating the process. From the moment the individual enters the phase entitled creation/ use of environmentally sustainable solutions, it is understood that a linear sequence occurs in relation to the subsequent steps.

In an ideal situation, the reformulated model proposes that the process begins with the recognition of an environmental problem by the entrepreneur that concerned with the negative impact arising from this problem on the environment, is motivated by a distinct set of aspects to create an environmentally sustainable organization in his environment of insertion.

If a person has theoretical/ practical knowledge in entrepreneurial activities, it is assumed that this individual will have greater facility to recognize potential opportunities for creating an enterprise. In view of their service, the entrepreneur will create environmentally sustainable solutions aligned with the central proposal of their enterprise. Subsequently, financial resources and other aspects necessary for the establishment of the enterprise will be gathered. To complete the process, the entrepreneur will create or enter an environmentally sustainable market.

FINAL CONSIDERATIONS

In the present research, we sought to answer the following question: How does the process of creating environmentally sustainable enterprises occur? - starting from a conceptual model previously proposed. With based on empirical results, it was possible to present that the environmentally sustainable entrepreneurial process is a multifaceted phenomenon, admitting different configurations depending on aspects such as: characteristics of the individual who starts a venture, context of business creation and main activity explored.

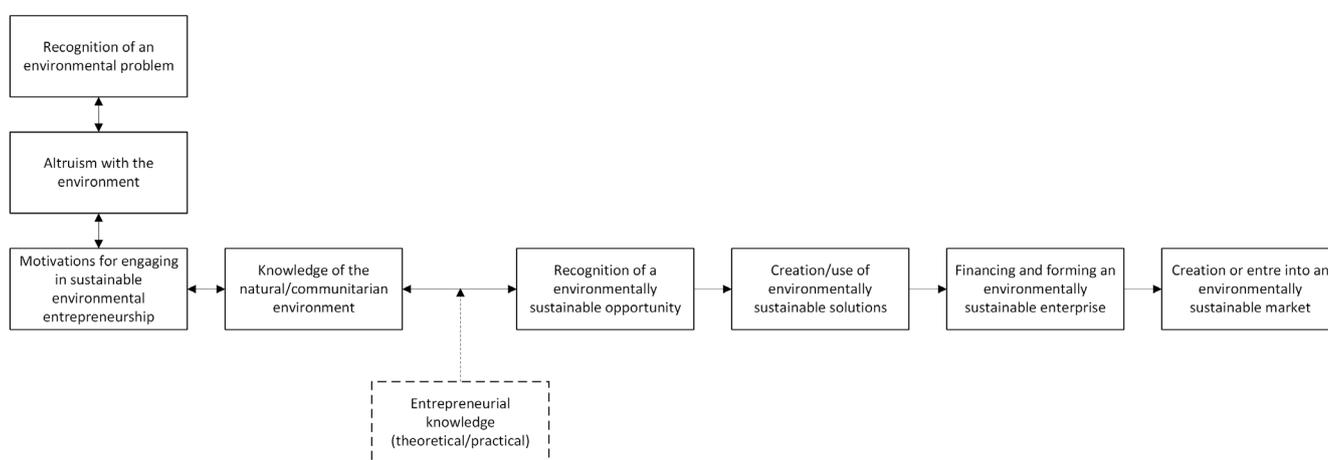


Fig. 02

Proposal for an environmentally sustainable entrepreneurial process model

Source: Prepared by the authors

Note: ↔ Recursive phases;

→ phases that follow linear sequence;

→→ phases that, when existing, can improve the relations between the previous phase and posterior.

By proposing a model of an environmentally sustainable entrepreneurial process commencing from the moment a problem is recognized, permeating aspects related to motivation, theoretical / practical knowledge, until the moment an enterprise of this nature is created, it is understood that a theoretical and practical approach more holistic to the phenomenon can be achieved.

From a general perspective of entrepreneurial theories, the main results of the research, discussed punctually in the previous section, reveal the importance of theoretical knowledge to guide entrepreneurial actions even when in initial contact with the practice, as well as the existence of external impulses to assist in the recognition of opportunities. In the specific field of environmentally sustainable entrepreneurship, the main results contribute to the understanding that organizations of this nature can be created by interests distinct from the altruistic purpose with the environment and that, different solutions can be shaped in line with the organization's purpose.

Due to the current global scenario, marked by the need for the organizational environment to instill environmental and social values in its activities, the establishment of a structure intending to explain particular elements about how an enterprise created with a focus on the environment, can cause impacts on the social environment functions as a stimulus and guiding aspect for entrepreneurs to create their enterprises with specific actions, without having to borrow structures from other research fields.

As a limitation of the study, although considerations about the process were made at the present time, the phenomenon had already been configured in the past. Thus, it is possible that relevant information has not been sufficiently recalled by the interviewed individuals. Therefore, a suggestion for future research is that the proposed model be tested through longitudinal studies, allowing it to monitor the creation of environmentally sustainable enterprises throughout its development.

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Conflict of interest statement

The authors hereby confirm that there are no competing interests to declare.

Authors' statement of individual contributions

Roles	Authors Contributions	
	Santos, JAR	Teixeira, RM
Conceptualization	X	X
Methodology	X	X
Software	X	-
Validation	X	X
Formal analysis	X	X
Investigation	X	-
Resources	X	-
Data Curation	X	X
Writing - Original Draft	X	-
Writing - Review & Editing	-	X
Visualization	X	-
Supervision	-	X
Project administration	X	-
Funding acquisition	X	-

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