

SUSTAINABLE COMPANIES' INNOVATION CAPABILITIES

1 INTRODUCTION

Innovation is one of the fundamental premises for a firm's longevity. Firms that have more flexibility to operate and take risks have more developed internal capabilities. Likewise, firms that are concerned with sustainability issues have a competitive advantage. In this sense, how do companies that use the sustainability pillars in their business model integrate these concepts in their capability for innovation? What capabilities need to be changed to achieve all these requirements?

Innovations to foster and assist sustainable development is a topic that has been growing over the last few years, but its implementation framework is the same as other types of innovation (Seyfang & Smith, 2007). Organizations adopt sustainability paths to move towards sustainable development and this is through innovations in this regard (Silvestre, 2015). Innovation is one of the ways companies can contribute to sustainable development, not only in isolation, but in conjunction with the practices of other organizations. Mousavi and Bossink (2017) claim the combination of sustainability and competitiveness impacts firms' capabilities for innovation.

However, the quest for sustainability is already starting to transform the competitive landscape, which will force companies to change the way they think about products, technologies, processes, and business models (Nidumalu, Prahalad & Rangaswami. 2009, p. 2). Innovation that was previously seen as the differential that provided differentiated profits, related to the conquest of the market or added value through the effect of innovation (Schumpeter, 1934), now covers broader issues.

These "sustainable innovation strategies" are characterised by multiple value creation, and by sustaining value beyond the single new product lifecycle (Slowak & Regenfelder, 2017). Therefore, instead of increasing the pace to create new products, (sustainable) business opportunities also arise when product lifetimes are extended and waste is reduced. More than creating value by reusing components or processed materials, the industry starts to implement environmental and social issues in its practices, as well as in the creation of new business models.

Therefore, to investigate how this process of using innovative capabilities in impact business occurs, the purpose of this paper is to analyze the role of the innovation capabilities in businesses that have sustainability pillars as central to their value propositions, through the economic, environmental and social pillars, having as a fundamental guideline. To answer this question, we, first, describe these firms' innovation capabilities; then we map how sustainable factors are inserted in these firms and, finally; we analyze how the combination of innovation capabilities are used.

We base our discussion on two main concepts, innovation capabilities and sustainable businesses and we apply semi-structured interviews with companies whose value purpose is linked to a triple bottom line. The script presents the questions of the two constructs. For that, the theoretical background, the methodology used and the results obtained with the study are presented in the sequence.

2 INNOVATION CAPABILITIES

Neoschumpeterian approach (Nelson & Winter, 1982) have long been discussing the importance of firms' capabilities to economic development. Many studies, since then, tried to identify how to promote economic growth, i.e., innovation. The main approach related to the

technological capabilities (Lall, 1992; Bell & Pavitt, 1995), assuming that innovation was the result of investments made in activities such as research and development (R&D) and in acquiring or developing new equipment, to say a few. The technological approach was not enough to describe the innovation phenomena in many industries though, since it reflected a profile of specific business acting in the high-tech end.

Technological capabilities were not enough, though, to answer to the quick changes of the market and, for that, there was a need to link technological options to market opportunities (Dosi et al., 2000). Dynamic capabilities (Teece et al., 1997) come to answer just that - exploit firms' internal and external competencies to cope with rapidly changing business environments. Or, as mentioned by Dutrénit (2000), while technological capabilities emphasize R&D and operations, dynamic capabilities emphasize management and strategy. According to Teece et al. (1997, p. 515) "capabilities' emphasize the key role of strategic management in appropriately adapting, integrating, and reconfiguring internal and external organizational skills, resources, and functional competences to match the requirements of a changing environment".

Firms, however, have to deal with both - technological set of products and processes that must succeed under specific business models allowing these firms to transact with and profit from the market (Alves et al., 2017). Therefore, every firm to some extent has the following general capabilities: development, operations, management, and transaction (Zawislak et al., 2012; Reichert et al., 2016; Alves et al., 2017).

The innovation capabilities model (Zawislak et al., 2012) brings both technological and business approaches and, therefore, is used as the lens of analysis in the present study. The four innovation capabilities (Zawislak et al., 2012) can be seen in simplified form in Table 1.

Capability	Definition
Development Capability	The ability that any firm has to interpret the current state of the art, absorb and eventually transform a given technology to create or change its operations capacity and any other capability aiming at reaching higher levels of technical-economic efficiency.
Operations Capability	The ability to perform the given productive capacity through the collection of daily routines that are embedded in knowledge, skills and technical systems at a given time.
Management Capability	The ability to transform the technology development outcome into coherent operations and transaction arrangements.
Transaction Capability	The ability to reduce its marketing, outsourcing, bargaining, logistics, and delivering costs. In the words, transaction costs.

Table 1 - Definition of Capabilities

Source: Zawislak et al. (2012)

A firm's ability to develop capabilities occurs through its ability to absorb and internalize new knowledge that is applied to new processes and services. This process resulting from this ability to apply new knowledge is called development capability (DC). The combination of knowledge, skills and technical system consists the operation capability (OC), rather than implement operational knowledge, this dimension corresponds to the firm's ability to adapt its products to the needs of consumers, having the continuous ability to reduce costs, achieve good quality, flexibility in its operations (Zawislak et al., 2012; Alves et al., 2017).

Management capability uses human action to combine resources to achieve the highest efficiency. In addition to resource management, this capability presupposes the use of

knowledge to reduce the uncertainties of the dynamic environment, especially when the focus is on innovation. Transaction capability is responsible for connecting the firm to the market, including customer service, marketing, logistics and technological change (Zawislak et al., 2012; Whitley, 1989).

According to Zawislak et al. (2014), the firm results from its business relationships, which need a technological drive and a business drive to produce and trade, both need each other for their operation. These drives enable the integration of different areas of the firm to achieve results, and bring the goods and services to the market they operate.

Technological capability approach involves the technological driver: development and operations capability; on the other hand we have a coordination approach containing the economic performance: management and transaction capability, which combined provide the innovative performance (Zawislak et al., 2014).

3 SUSTAINABLE BUSINESSES

According to Stubbs (2019) numerous theoretical lenses have been used to describe sustainable innovations as: green innovation, eco-innovation, ecopreneurship, clean (production) technologies, sustainable technologies, circular economy, closed-loop, product-service systems, among others. Regardless of the theoretical lenses, the concept is mostly related to the environmental and economic dimensions of innovations.

Sustainability-oriented entrepreneurship stems from broader and somewhat older concepts of social, environmental and institutional entrepreneurship. It describes creative and innovative companies that offer solutions to issues involving environmental and social sustainability, along with the pursuit of economic growth. The implementation and development of innovation in sustainability are practices that small and medium enterprises do that drive sustainable development. These companies reach competitive advantages and economic gains by applying these innovative practices that focus on production, social work, the environment, or organization (Belz and Binder, 2017).

Sustainable entrepreneurship is primarily concerned with the personal motives, initiatives and skills of an organization (or individual) focused on achieving social transformation and market success through environmental and / or social innovations. Sustainable entrepreneurs mix several value propositions (economic, social and environmental). In addition to the entrepreneurial attitude, this can be understood as an innovative firm that provides environmentally and / or socially beneficial products or services with large-scale market potential (Belz & Binder, 2017).

The "Our common future" report published by the International Commission for Environment and Development in 1987 already addressed issues related to equality, but only with Eco 92, in fact, the companies signed the commitment to sustainable development. (Elkington, J., 2001). Starting in the 1990s, we began to think more deeply about sustainability issues, moving from an environment-only logic and starting to focus on sustainable development. With this agenda, a huge challenge was created, as well as a great opportunity.

The understanding that environmental issues reflect not only on economic issues, but also on the ability of future generations to meet their needs brings out that what is affected has to do with social issues (and also ethics and especially politics) (Elkington, J., 2001). When it comes to pollution: companies that choose not to treat the waste they generate save the cost that would be required for treatment, making it economically profitable. By throwing this waste into the environment, this generates a cost to society (as it decreases the quality of life, contributes to increase the scarcity of natural resources, among others). Thus, in this brief example, one can see the relationship between the economic, the environment and the social dimensions of sustainability (Elkington, J., 2001).

Sustainable development brings with it a strategy for building a society that takes into account economic and ecological viability too, making it possible to redefine society's relations with nature. Thus, the idea of sustainability implies defining limitations for the possibilities of growth and encompassing practices that consider the existence of interlocutors and relevant social participants in the process. This limitation on growth meets the notion of managing natural and social resources, identifying the causes of an ecologically predatory system - which can be attributed to social institutions, information and communication systems and the values that society values. Thus, it can be understood that there is a need to generate debates about problems, objectives and solutions together with society, encouraging its active participation. (Jacobi, P.,1999).

For Elkington (2001), the three pillars of sustainability are divided between the economic, the environmental and the social. Being the economic pillar characterized by being essentially the firm's profit, being linked to economic capital, which in its traditional definition encompasses physical and financial capital. Adding, over time, the concept of human capital and going a little further, we can talk about intellectual capital. The method of calculating this pillar, which is the most conventional within a firm, uses accounting resources. This forms a model for calculating the other two pillars. The commonality of the three pillars is the concept of externality, which brings with it the costs that are not registered in the firm's accounting, those examples of "side effects" that are a consequence of actions taken by the firm.

To measure how environmentally sustainable a firm is, the environmental pillar needs to define what can be understood as natural capital. The complexity of natural capital is great, because just counting the number of trees in a forest and pricing them does not contemplate their entire form. The natural richness that underpins the ecosystem, environmental benefits, commercial products, mediation functions between atmosphere, soil and surface, gas release and all consequences with flora and fauna (Elkington, 2001).

Finally, the author treats the social pillar as the most controversial, because at the time of the creation of this theory, it was being related to communism. Being of great resistance by the companies, the acceptance of this theme as a fundamental part for the development of sustainability. The concept of social justice is what emerges from the discussions of this pillar. A firm that is concerned with sustainability needs to consider its impact on social issues and, for that, it is necessary to understand what social capital is. Social capital is directly related to the trust that people place in each other, which creates stronger and more useful bonds when thinking about companies and society. Trust is what will make the firm thrive in both employee and stakeholder relationships (Elkington, 2001). Thus, this theoretical lens in relation to sustainability will be used to develop analyzes and relationships with the research object, thus following the methodology that will be exposed in the next chapter.

3.METHODOLOGICAL PROCEDURES

This is an exploratory research, as it deals with research with few previously published studies (Sampieri, Collado & Lucio, 2013). Regarding the approach, we use the qualitative, so that the necessary deepening to understand the proposed objective can be performed. Qualitative research has a connection as a direct source of data. A multiple case study was conducted as a research strategy (Creswell, 2010), resulting in a comparative analysis between the cases adopted here as a way to better analyze the characteristics (similar or discrepant) they had.

The data collection instrument chosen in the study was the interview. To apply the in-depth interviews, a semi-structured script was developed, based on the theoretical concepts presented in the previous chapter, which guided the flow of the interviews.

The first criterion for selecting cases was business that work with products or services that have sustainable innovation as their business model. The interviews will be conducted with the entrepreneurs. As an initial contact, it is intended to seek entrepreneurs for convenience, located in different cities, but the firm's work who sustainable products or services.

For data analysis, we opted for content analysis according to Bardin (2016) precepts. The categories used concentrate the two theoretical constructs, the Innovation Capabilities (Technology development, operation capability, management capability and transaction capability) proposed by Zawislak et al. (2012; 2014) and the precepts of the Sustainability Pillars (Economic, environmental and social pillar) by Elkington, J. (2001).

The interviews were conducted in person by the researchers from November 26 to December 13. All interviews were recorded, with the permission of the interviewees, who agreed to participate in the study. Interview duration varied between 42 minutes and 1 hour 15 minutes. For the best presentation of the data, we chose to use the firm nomenclature, sequenced by the numbering from 1 to 7. The synthesized data and the corresponding interview times can be observed in table 2. For the data treatment, the transcriptions were performed, as required by the scientific criteria.

Business	Business type	Firm Description	Product/ Service	City/ Country	Firm's Time
Firm 1	Sustainable Glasses	<i>"become a sustainable design studio, and working with environmental and sensory impact through the product, like that we always wanted to be that our product carried the message of sustainability and Brazilian's, finally fair trade and all the purpose of the brand so through product". (F1)</i>	Product	Porto Alegre-RS	2014
Firm 2	Paper Wallet	<i>"leave the world more open, irreverent and good and we understand that the products are means for this, we do not put the products on pedestals ... We joke that if we sell a jar of air ... This air pot must transform society, carry positive experience together, impact together" (F2)</i>	Product	Montenegro - RS	2016
Firm 3	Sustainable Fashion	<i>"offer timeless pieces (...) that do not need to be changed every 6 months, or every 4 months" (F3).</i>	Product	São Paulo -SP	2014
Firm 4	Shared Furniture	<i>"the freedom to change, our main value is to bring this issue of making people capable, increasingly free." (F4).</i>	Service	São Paulo - SP	2019
Firm 5	Promote Solar Energy in Communities	<i>Promote and democratize access to solar energy, helping companies to connect to social projects, bringing social benefits to the community</i>	Service	Rio de Janeiro - RJ	2016

Firm 6	Sustainable Hotel	<i>“means of sustainable lodging, focusing on hospitality, comfort, a great location, focused on the well-being of the people who come here, seeking the quality of hospitality and comfort, mixed with sustainability”(F6).</i>	Service	Cambará do Sul -RS	2009
Firm 7	Sustainable Fashion	<i>“ It's an impact company that works on three fronts: corporate gifts, B2C sales people products, and this reinvention that we're actually shifting to vital design that is a big industry consultancy that we've been focusing on” (F7)</i>	Product	Porto Alegre - RS	2013

Table 2 - Interview data

Reference: Prepared by the authors

Therefore, after describing the methodological procedures applied in the present research, the form of data collection and the corresponding analyzes. The next section presents data from the companies interviewed, as well as the results obtained in the study.

4 ANALYSIS OF THE RESULTS

The business conception, in one way or another, approaches to what Stubbs(2019, p.1063) say “Transformative sustainable innovation involves a radical shift in thinking, radical (re)design of products, cutting-edge technologies, new forms of value creation, and the development of new business models”. This fact is evident in the business concepts themselves presented in this section: it is innovativeness. Furthermore, the next section exposes how innovation capabilities are immersed in the routine of the organizations studied.

4.1 Mapping the innovation capabilities

It then exposes the innovation capabilities identified, both the development capabilities, the operation, management and marketing of the surveyed.

4.1.1 Development capability

The development capability consists of adapting technological means in the operationalization of organizational practices. This development is mainly aligned with the implementation of new knowledge applied in processes, services or products. One of the characteristics noted in the companies interviewed is that in different ways, businesses seek to be adapting their models to remain competitive.

To product design, it is observed that the companies surveyed, much more than performing their design, have the product development and the design to serve customers in their services. Companies based on product portfolios have mastery of the technologies applied in the preparation of the product. “We had a design and production process knowledge base” (F1); “We do the modeling here, try it here, the play here” (F3) and “all done by me from start to finish” (F7).

In firm 2, in addition to a creative team, for prototyping, production organization and everything related to product development, the Firm increases its production capacity through

the use of external partnerships for the development of prints, by artists who leave their name tied to the company. This strategy, which over time was also implemented in other companies surveyed, such as firm 1, which was a booster for brand visibility and proof of technical recognition from the outside public, was invited to carry out other projects thanks to technical / technological knowledge acquired by treating recyclable waste.

The adaptation of new processes to adapt existing technology is one of the ways we can perceive the high technological development capacity of companies. Unlike other traditional companies, it is possible to realize that companies with value propositions that involve sustainability, try to change the logic established in the classic markets. Innovation is used as a motor of transformation.

Business somehow tries to go against the traditional logic of the market, especially those related to fashion. firm 2, for example, sought to adapt the technology applied to the product, as you can see in the excerpt: “we stayed from 2013 until March 2016, testing a lot how to print on this material (...) if we made some changes in the ink from a traditional printer” (F2). In order to develop a more resistant and suitable product to last longer than the existing ones, being a strategic differential.

By contrast, the technology applied in the traditional business models of the hotel and for example, in the physical structure of the place and customer communication are the strategic points and artificial intelligence in all virtual communication channels. And in fashion, technology is applied to raw materials, fabrics and finishing materials.

With regard to trends, it is observed that companies have not institutionalized a routine of similar product research or competition. Trends are worked and adapted in business models, in research of what occurs in the world. “*We did some fairs abroad and such, but it is nothing structured like that, it is very feeling. (...) but it is to go following the consumption trends*” (F1). Customers are the main reference for following trends for companies, 2,6 and 7, where everything is guided by following the “*look is much more internal with the people in orbit of F2 than these companies. outside (...) get customer feedback from them as well, some ideas and such*”.

4.1.2 Operation capability

Operational capacity is responsible for the combination of knowledge, skills and technical system of the firm's operational capacity. The companies studied presented a well-defined production process, both with the idea of selection prior to the production process, as well as the careful selection of suppliers, technological equipment and human resources, besides constantly rethinking improvements in the processes used.

An interesting point noted was that most of the companies interviewed have their business organized on demand. Both product developers and the hotel, for example, use internal demand-related strategies. Although the hotel provides a service, it adjusts its capacity by floors to use the least amount of structural and physical resources, since its inception the facilities have been strategically thought to function in this way.

In terms of technology, there is a predominance of high-tech equipment, especially in companies that sell products. As can be observed: “Laser cutting that is ultra technological that is digital technology and manufacturing” (F1). To maximize operational capacity, some collaborative strategies are incorporated by companies, as shown in the following:

“It is not us who creates the prints, they are artists. Anyone can join our base to be a co-lab, so send us your designs and our product and get 5% commission for every item sold, so today there are over 900 prints on the site from over 400 artists different”(F2).

This strategy is open to clients, in which artists, besides earning financially for the amount sold, also have their work disclosed by the firm, because there is the association of the work with the artist's signature. However, although there is outsourcing for the development of a process step, there is an internal team to also develop products and that advises the interaction of external collaborators.

The use of standard operating procedures appears very clear in the actions present in all by the business. It is especially observed in businesses 2,3 and 6, which participate in certifications such as System B and ISO 14.001, as they are standardized requirements for certification qualifications, which are conferred annually. For this purpose, the insertion of operational standardization is inevitable. firm 5 also strongly presents the use of POPs however, because it has concepts closely linked to the multinational that created the brand.

When asked about the capacity to expand production, most companies claim to be able to broaden their scope of production; however, it is claimed that they are not interested at the moment, sometimes simply by strategy. The differentiation of a traditional firm is in controlling all processes in a more intensive way, seeking to guarantee the origin of the raw material, avoid excess generation of waste, reuse materials, etc.

The interconnection between operating systems and technologies is a strategic factor for all companies. However, beyond operational capacity, manageability plays a key role in maintaining and consolidating the innovative process within the business, as we present in the next topic.

4.1.3 Management capability

When asked how strategic objectives are elaborated, companies claim to have formally established them and are continuously monitored. firm 7, for example, has an external strategic board, made up of people from the area and who are partners of the brand for years, to constantly update the path to be traced by the firm.

Firm 2 claims not to work with strategic goals, but sets higher goals. *"We have these major goals of being a reference company regarding experience and positive social impact and then we set some micro goals,"* (F2). A different method from the conventional one, including different management practices, is shown in the following excerpt:

"we have the rituals, for example, every beginning of the month, we have the gathering of numbers, the financial presents everything that came in, everything that came out of the DRE financial report, cash flow, everything, for everyone in the company, (...)Many discussions arise, so, of course, of course, and all of the ways to follow how one can collaborate with another so that a particular goal they set is attained, is much more fluid based on these rituals than definition thus, of bah. Now let's sit down and set, for example, it's much more fluid like that" (F2).

Regarding the inclusion of social and environmental responsibility in the strategy, the interviewees stated that they did not include it, as it is part of the essence of this type of business and that they include the continuous improvement of the quality of actions as important for success. As you can see in the speech: *"It's not a question, we don't treat it, it will be or it won't be, it simply is. Just as quality is, just as sustainable is, and circular is. I will never again develop in life a product that is not returnable, that will not be thought of in a technical cycle"*(F7).

Regarding management techniques and tools, respondents presented different forms in management practice. Firm 1, because it is composed of a design, claims to use a specific tool *"we have always been based on the Design thinking methodology"* (F1), as a central management base, calling specialists for specific things. Others use firm people and partners,

but add as strategic components the organs of the S system “Sebrae and Senai CTIC aid - we saw that there is a well-equipped laboratory with plenty of research equipment” (F7).

In addition to these characteristics, we present the fourth capability: The Transaction capability.

4.1.4 Transaction capability

Price, unlike the traditional market, is generally a little higher, as the sustainable business proposition is about fair remuneration for workers, good quality of products to make them last longer (timelessness, for example). example) “*We value work is done more humanely, so it is paid much more expensive than others*” (F2).

Also, they are concerned not only with the quality of materials but also by being green and, final, to maintain this structure and continue to develop innovations in their formats for this constant adaptation, which is the path of sustainability. All this makes companies have a slightly higher cost and therefore a higher price.

Concerning relation to suppliers, we highlight the careful analysis of companies:

“These criteria are very complicated for you to follow so strictly in the market because many suppliers do not consider, or better not expose some things, are suspicious of why you are asking these things” (...) So we have and some of these criteria are respected for the environment, win-win, not having the traditional way of negotiating, squeezing one side, things like that” (F1).

It is noticed that the raw materials are the main bottleneck found in the process, whether due to sustainability requirements such as access. “*Our raw material is imported and has only one importer in Brazil. So we don't have much choice, a lot of business to do ... So that's it. It is very difficult to find machines that print on this material*” (F2).

For companies, customers are the main pillar of business development. Embedded in the processes, they help with feedback and generate information that helps direct which path to take. Within sustainable businesses, the client is ideologically linked to the cause of sustainability, environmental preservation, social justice and conscious consumption, for example. This makes the willingness and engagement of this customer higher than an ordinary customer, as this link to the cause makes it more meaningful with that purchase.

In addition to selling branded goods to a limited number of people (by positioning strategy), companies are looking for big brands such as Uber, Fruki, and Toyota to partner on specific projects. The companies help in the elaboration of a branded product but with the use of the sustainability concept already developed by the firm. “We only use our expertise, our relationship with suppliers, and knowledge of the production process” (F1).

Based on the ideas of Bansal and Desjardine (2014), businesses using the sustainable approach do more innovation than other businesses, given that focusing on their longer-term rather than short-term results enables them to realize disruptive and transformational instead of incremental. In addition to providing more R&D for development and process improvement.

This is in line with Nerurkar (2015), who states that sustainability innovation opportunities cannot be sequential, unlike other markets, and enable the ability to develop sustainability-oriented innovations for their consumers, as noted in the next section.

4.2 Discussion the three pillars of sustainability

In this chapter, we will talk about the pillars of sustainability in the light of the theory of Elkington (2001), by illustrating excerpts from the seven interviews, showing the relationship of theory with practice.

4.2.1 Economic Pillar

The economic pillar is based on profit and what it can provide for the firm's. Thus, analyzing this pillar brings with it the responsibility of financially supporting its structures. The interviewee reports coming back to a collab partner to contest the price issue, as they placed a very high margin for the end consumer. "This is a luxury positioning and we do not want this, as our brand with us will have to be readjusted (...). Fair Trade."(F1)

The idea of prioritizing a fair price for both commodities and workers' compensation is a hallmark of sustainability, as it thinks so much of conscious consumption where no more waste is being generated and that the pursuit of products is not the only thing. the core of people's lives, as well as fair pay is possible so that workers are not undervalued.

While keeping in mind an over-stimulation of consumption, so that materials can be developed, new designs and all the necessary support, the fair price on products from companies with sustainable bias encompasses a margin that can be created. quality products. The price sensitivity of the market means that these sustainable business products are consumed (generally) by consumers who are linked to the cause in some way because of their high price.

Another point arising from this consumption characteristic is that sustainable companies provide some type of service (complementing their function of producing some goods with F1 and F3, for example). These also make projects for other companies, collab, consulting. They use their expertise and knowledge to generate more income.

It is important to understand which economic pillar is fundamental for business sustainability, for Belz and Binder (2017), the concepts related to sustainable entrepreneurship and social entrepreneurship, one with a more social pillar approach, the other for the environment. What the theory makes explicit is the presence of the economic pillar in both forms of entrepreneurship, in which in the three-pillar theory it also follows with its utmost importance.

4.2.2 Environmental Pillar

The environmental pillar brings with it the challenge of understanding and quantifying natural capital, its direct impacts are easier to identify, but the indirect ones need a little more study to measure.

"We always work too, at F2 there is also a matter of supplying raw materials... The MVP issue... So, for example, we want our products to have the least possible negative impact and the greatest impact. possible, but we know that today, having access to products that are 100% ecological are still very expensive, so we always draw a plan ... "(F2)

The firm must constantly balance its financials, sales and alignment with sustainability for everything to be viable. This excerpt shows how this process is going. 100% environmentally sustainable products are very expensive, so these small businesses need strategies to work with reality. While the firm cannot produce 100% environmentally friendly, one can have these counterpart alternatives, in which the firm makes an action (such as

recycling much more waste than it produces) to keep the discourse consistent with practice, as noted in the following excerpts:

“(Plastic) Yes every month I recycle 42kg and I use 4kg. We make a much larger compensation than we needed, but I think it's worth the cost benefit there. What else? The whole process itself, we always think of reuse, the tag is then recycled paper with seed inside to plant, it is not just one here that you will look at the price and then put it away. It is something that you can enter into your home and reuse.”(F3)

Second, Belz and Binder (2017), ecological and social issues go hand in hand. Integration of the third dimension completes the sustainable supply. Thus, the environmental and social pillars are part of the set that makes up this coherence in the proposal.

4.2.3 Social Pillar

The social pillar is on the same level as the environmental pillar, but with even more complex definition and quantification. Measuring both positive and negative impacts is extremely difficult. Understanding social capital is directly linked to understanding about the relationships and ties that the actions these companies take.

The main element observed in fashion-related companies (F2; F7) is the direct concern with the amount of compensation paid to workers and partners who work in the operational part. By having a history with the traditional market previously, and believing that in a contrary move, respect for people is prioritized. In some other way all companies express this attitude, be it with customers, employees, suppliers or society.

Another point observed during the study was that companies incorporate in their business, only partnerships or products that are aligned with their values, as can be seen in the speech:

“We already stopped launching a product, which was going to be very innovative in the Brazilian market, because the only way to get the items needed to produce it was from China (...). We know that China is evolving a lot, the guys are fucking good at what they do, but we had no guarantee from these suppliers of what their work was like, and we had no money to afford an audit, much less to travel and travel. produce something for our customers that this company is indeed. So we didn't launch these products”(F2)

Firm 2 also exposes two institutionalized social projects, the first being F2 +1, which consists of raising R \$ 1.00 from the sale of each product sold in the store, to a social investment fund, which is annually invested in a social project chosen by the firm, disclosed to all customers on its platforms. Also from Black Friday social, which is held since the first year of its foundation, it gives discount only to customers who prove a donation for a social project in November. In addition to providing the product template, which can be used by anyone who accesses the website, as in the example below:

“There is a project that is the Identity project, it is from Recife, literates illiterate adults and seniors. We opened the mold in 2017, they have been using our mold since April 2017 for their entrepreneurship workshop, which teaches them how to run a business and then they sell the paper portfolio (...) Just because we opened it this mold. (...) by opening the industrial secret is transforming the lives of these people, and this is the main project that we have more follow-up.”(F2)

Businesses generally have social issues as part of the sustainability package. Thus, they always put on their agenda this theme. Performing social projects, constantly, linked to the environmental point or the part of consumption, reverting part of profits to help projects is

common. too. The firm may not have this focus, but it incorporates this into its practices as it is part of the sustainability discourse.

Companies that do not have institutionalized social programs within the business model, as it turns out, help some specific projects: “We made specific projects to bring social impact because we wanted to” (F1); “Natal F3 every purchase made on the site 10% will be reverted to a needy institution, needy children, orphaned children, we try to make this connection between these pillars ”(F3);. In this way, the core of its value proposition lies in the social pillar.

To summarize the main results found in the study, a summary of the main factors identified as innovation resources observed in companies that use the sustainable perspective in their business model is presented, as shown in table 3.

Capability/ Pillars	Economic Pillar	Social Pillar	Environmental Pillar
Development capability	-Timeless pieces (F3;F2; F1;F7) -Slow fashion (F3; F7)	-Use of the product as a training and protagonist tool in the inserted society (F5)	-Development with zero impact environment (F1) -Increased furniture life cycle (F4)
Operations Capability	-collabs (F1; F2; F3) -operating partners (F1, F7) -consultants (F1, F3, F6, F7)	-Instruction of seamstresses / artists into local production (F2, F7) - Waste will come from street blankets, for example, and other products (F3) -Management skills for product installation and maintenance (F5)	-Recycling (F3) -Reverse logistic (F2) -Use of seed paper(F2)
Management Capability	-use of strategic planning; - constant research and development work; -use of strategic partners for business definition		
Transaction Capability	-Physical structure design enables a lower break-even point than the market that operates (F6) - Innovative concept that provides a good profit margin (F1; F2; F5 ; F7)	- Prioritization of local and national suppliers (F6)	-Sales price increase due to environmental concern (F1;F2;F3;F6;F7)

Table 3: Innovation capacities in relation to the three pillars of sustainability.

Reference: Prepared by the authors

In short, sustainable practices are typically flexible and modular, to help organizations adapt to environmental changes so that sustainable practices are aligned over time (Teece, 2007; Bansal & Desjardine, 2014). However, there are authors such as Adam (2016), who argue that sustainable innovation is a very radical and systemic operation and not just efficiency oriented, thus creating new business models. The strategies used in the companies studied indicate that there is a high level of innovation capacity in their operation, with the strategic use of resources external to the firm, both for competitiveness and to positively impact society as a whole.

5 CONCLUSION

This article proposed to analyze how innovation capabilities are applied in businesses which use sustainability as central to their value propositions. The first proposed specific objective, identified that the companies studied have a high capacity for innovation and the profiles show the companies are small but with a high level of knowledge, both by the profile of business owners and by the type of business that requires this high level of knowledge. The small size of companies helps to have greater flexibility and possibility tests, errors and hits, which this facilitates the innovation process.

The second specific objective maps how sustainable factors are inserted into these businesses and found several aspects about business sustainability, given that most value propositions have this direction, either for the environmental pillar or for the social pillar. All pillars end up being worked out, either directly or indirectly, which shows the great relationship they have and an interdependence - so that they work well. The great point that is visible is that through the trajectories told, everything is a process that is constantly enhanced by the reflections and knowledge gained over the experience and time of the firm.

In analyzing the combination of innovation capabilities used for sustainable business, one of the points noted is that companies (F1, F3 e F7, for example) work not only selling goods but also by providing some kind of service (such as consulting or projects or partnerships). that contributes to the economic pillar of the firm and allows it to spread a little more of the ideas they carry. The interesting insight here is the possibility of thinking that the execution of these services, which exploit this expertise of these companies (whether in the environmental, materials, life-cycle or social, thinking about the positive and negative impacts on a community, for example), can become part of the business model, becoming an important avenue for the economic support of the firm, exploring both your B2C and B2B relationships.

A limitation of the study is the restricted number of companies surveyed, given the type of selection proposed, for convenience. Another limitation was the data collection time that did not allow the return of other contacted companies. For future studies, it is suggested to analyze companies of a specific cut-off that have a stricter selection criterion, such as System B. Companies from a single industry should also be analyzed, such as only fashion-related enterprises.

REFERENCES

- Adams, R., Jeanrenaud, S., Bessant, J., Denyer, D., & Overy, P. (2016). Sustainability-oriented innovation: A systematic review. *International Journal of Management Reviews*, 18(2), 180–205.
- Alves, A. C., Barbieux, D., Reichert, F. M., Tello-Gamarra, J., & Zawislak, P. A. (2017). Innovation and dynamic capabilities of the firm: Defining an assessment model. *Revista de Administração de Empresas*, 57(3), 232-244.
- Bardin, L. (2016). *Análise de conteúdo*. São Paulo: Edições 70.
- Bansal, P. & Desjard M (2014) Business sustainability: It is about time. *Strategic organization*.12.70-78.
- Bell, M., & Pavitt, K. (1995). The development of technological capabilities. *Trade, technology and international competitiveness*, 22(4831), 69-101.

- Belz, F. & Binder, J.K. (2017) Sustainable entrepreneurship: a convergent process model. *Business strategy and environment*. 26, 1-17.
- Creswell, J. W. (2010). Projeto de pesquisa: métodos qualitativo, quantitativo e misto (3. ed.). Porto Alegre: Artmed.
- Elkington, J. (2001). *Canibais com garfo e faca* (p. 444). São Paulo: Makron Books.
- Jacobi, P. (1999). Meio ambiente e sustentabilidade. *Revista de Desenvolvimento e Meio*.
- Lall, S. (1992). Technological capabilities and industrialization. *World development*, 20(2), 165-186.
- Mousavi, S. & Bossink, A. (2017) Firms' capabilities for sustainable innovation: The case of biofuel for aviation. *Journal of Cleaner Production*.
- Muñoz-Pascual, L., Curado, C., & Galende, J. (2019). The Triple Bottom Line on Sustainable Product Innovation Performance in SMEs: A Mixed Methods Approach. *Sustainability*, 11(6), 1689.
- Nelson, R. R., & Winter, S. G. (1982). The Schumpeterian tradeoff revisited. *The American Economic Review*, 72(1), 114-132..
- Nerurkar, O (2015). Sustainability Driven Innovations Matrix a conceptual framework for environmental sustainability opportunities. *International Journal of applied engineering Research*.
- Nidumalu, R., Prahalad, C., & Rangaswami, M. (2009) Why sustainability is now the -key driver of innovation. *Harvard Business Review*.
- Sampieri, R. H., Collado, C. F., & Lucio, M. del PB (2013). *Metodologia de pesquisa*, 5.
- Seyfang, G., Smith, A., (2007). Grassroots innovations for sustainable development: towards a new research and policy agenda. *Environ. Polit.* 16 (4), 584e603.
- Schumpeter, J. A. (1934). The theory of economic development. *Harvard: Economic Studies*, 46.
- Silvestre, B.S. (2015). Sustainable supply chain management in emerging economies: environmental turbulence, institutional voids and sustainability trajectories. *Int. J. Prod. Econ.* 167, 156 e 169
- Slowak, A & Regenfelder, M (2017) Creating value, not wasting resources: sustainable innovation strategies, *Innovation: The European Journal of Social Science Research*, 30:4, 455-475
- Stubbs, W.(2019) Strategies, practices, and tensions in managing business model innovation for sustainability: The case of an Australian BCorp. *Corporate social responsibility and environmental Management*.

Teece, D. J. (2007) Explicating Dynamic Capabilities: The Nature and microfoundations of (Sustainable) Enterprise Performance. *Strategic Management Journal* 28(13): 1319–50.

Zawislak, P. Alves, A.; Gamarra, J.; Alves, C. A.; Barbieux, D. & Reichert, F. (2014) The different innovation capabilities of the firm: further remarks upon the brazilian experience. *Journal of innovation economics & management*.13 .129-150.

Zawislak, P. Alves, A.; Gamarra, J.; Barbieux, D. & Reichert, F. (2012) Innovation Capability: From technology development to *transaction capability*. *Journal of technology management & innovation*.

Whitley, R. (1989). On the nature of managerial tasks and skills: their distinguishing characteristics and organization. *Journal of Managerial Studies*, 26, 209-224.