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**O *FLOURISHING BUSINESS CANVAS* COMO FERRAMENTA PARA A  
MODELAGEM DE NEGÓCIOS SUSTENTÁVEIS EM *STARTUPS***

**THE FLOURISHING BUSINESS CANVAS AS A TOOL FOR MODELING  
SUSTAINABLE BUSINESS IN STARTUPS**

**[TRADUÇÃO INGLESA]**

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CASCADEL

2022

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Dissertation presented in partial fulfilment of the requirements for the degree of **Master of Science in Administration** in the Department of Administration, Western Paraná State University. Dissertation Supervisor: Dr<sup>a</sup>. Sandra Mara Stocker Lago.

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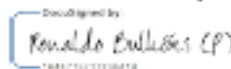
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Dissertação apresentada ao Programa de Pós-Graduação em Administração em cumprimento parcial aos requisitos para obtenção do título de Mestre em Administração, área de concentração Competitividade e Sustentabilidade, linha de pesquisa Sustentabilidade, APROVADO(A) pela seguinte banca examinadora:



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## **DEDICATION**

To my wife Simone, an extraordinary woman, a faithful partner in these many years of coexistence, companion in the moments of adversity and in the good moments of our lives, therefore, it would be no different in this very important moment of my life. Her support was essential for this moment.

To my children, my “little great loves” Antonella and Antony, for being the motivators of my life and for teaching me every day to become a better human being. You are certainly the best part of me. May this work, in the future, inspire you to be better people for our world.

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## RESUMO

Pellin, A (2022). *O Flourishing Business Canvas como ferramenta para a modelagem de negócios sustentáveis em startups*. Dissertação de mestrado, Universidade Estadual do Oeste do Paraná, Cascavel, PR, Brasil.

Esta pesquisa, uma das precursoras no Brasil, teve como objetivo investigar uso do *Flourishing Business Canvas* como ferramenta para a elaboração de modelos de negócios sustentáveis por *startups*. As *startups* são empresas com modelos de negócios potencialmente escaláveis e inseridas em um ambiente de extrema incerteza, assim, à medida que desenvolvem seus produtos ou serviços, não podem estar indiferentes aos pressupostos da sustentabilidade. Neste contexto, mostra-se evidente a necessidade de ferramentas que possam auxiliar essas empresas a transformarem seu atual modelo de negócio para um novo conceito de modelo voltado para a sustentabilidade, e o *Flourishing Business Canvas* tem essa premissa. Deste modo, para atingir o objetivo proposto, o estudo é realizado por meio de uma abordagem qualitativa com procedimento técnico de pesquisa-ação, com a realização de oficinas com quatro *startups* utilizando o *Flourishing Business Canvas*. Nas oficinas são avaliadas a aplicabilidade e a utilidade da ferramenta com base nas percepções dos participantes e observação direta sistemática do pesquisador, ao passo que às *startups* constroem ou adequam seu atual modelo de negócio convencional para um modelo sustentável, integrando os contextos econômicos, ambientais e sociais. Os resultados da pesquisa mostraram que o *Flourishing Business Canvas* é uma potencial ferramenta para a modelagem de negócios sustentáveis por *startups*. Pode ser empregada para entender as práticas e ações de sustentabilidade dessas empresas como um todo, mostrando sua sustentabilidade social, ambiental e econômica de modo esquemático e estratégico, e, por consequência, ser utilizado como ferramenta para a modelagem de seu negócio com a pretensão de serem efetivamente sustentáveis. Este estudo contribui teoricamente para a literatura com seu exame detalhado sobre a ferramenta e a comprovação de sua efetividade e utilidade quando aplicado às *startups*. Apresenta importantes considerações sobre a usabilidade da ferramenta e possíveis melhorias, colaborando deste modo, com uma agenda futura de estudos. Também contribui para a prática ao proporcionar com o estudo uma visão holística da sustentabilidade para os participantes, encorajando a ideação e a visualização de seu modelo de negócios aliados à preocupação com a melhoria social e ambiental destas empresas.

**Palavras-chave:** Sustentabilidade. Modelos de Negócios Sustentáveis. *Startups*. *Flourishing Business Canvas*.

## ABSTRACT

Pellin, A (2022). *The flourishing business canvas as a tool for modeling sustainable business in startups*. Master's degree dissertation, Western Paraná State University, Cascavel, PR, Brazil.

This research, one of the pioneers in Brazil, aimed to investigate the use of the Flourishing Business Canvas as a tool for the elaboration of sustainable business models by startups. Startups are companies with potentially scalable business models and inserted in an environment of extreme uncertainty, thus, as they develop their products or services, they cannot be indifferent to the assumptions of sustainability. In this context, the need for tools that can help these companies transform their current business model into a new model concept focused on sustainability is evident, and the Flourishing Business Canvas has this premise. Thus, to achieve the proposed objective, the study is carried out through a qualitative approach with a technical procedure of action research, with the realization of workshops with four startups using the Flourishing Business Canvas. In the workshops, the applicability and usefulness of the tool is evaluated based on the perceptions of the participants and systematic direct observation by the researcher, while the startups build or adapt their current conventional business model to a sustainable model, integrating the economic, environmental, and social contexts. The results of the research showed that the Flourishing Business Canvas is a potential tool for sustainable business modeling by startups. It can be employed to understand the sustainability practices and actions of these companies as a whole, showing their social, environmental, and economic sustainability in a schematic and strategic way, and consequently be used as a tool for modeling their business with the claim of being effectively sustainable. This study contributes theoretically to the literature with its detailed examination of the tool and the proof of its effectiveness and usefulness when applied to startups. It presents important considerations about the tool's usability and possible improvements, thus contributing to a future agenda of studies. It also contributes to the practice by providing with the study a holistic view of sustainability for the participants, encouraging the ideation and visualization of their business model allied to the concern with social and environmental improvement of these companies.

**Key words:** Sustainability. Sustainable Business Models. Startups. Flourishing Business Canvas.



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## **LIST OF ABBREVIATIONS**

DBTD	Brazilian Digital Library of Thesis and Dissertations
BMC	Business Model Canvas
CAPES	Higher Education Personnel Improvement Coordination
ENGEMA	International Meeting on Business Management and the Environment
FBC	Flourishing Business Canvas
FSSD	Framework for Strategic Sustainable Development
IBICT	Brazilian Institute of Information in Science and Technology
IOT	Internet of Things
MIT	Massachusetts Institute of Technology
OCAD	Ontario College of Art & Design University
ONU	United Nations Organization
UNEP	United Nations Environment Program
SBMs	Sustainable Business Models
SBT	Sustainable Business Transformation Roadmap
SSBMG	Strongly Sustainable Business Model Group
SVAT	Sustainable Value Analysis Tool
TBL	Triple Bottom Line
TBLC	Triple Layered Business Model Canvas
UTFPR	Federal Technological University of the Paraná
VUCA	Volatility, Uncertainty, Complexity and Ambiguity
WCED	World Commission on Environment and Development

## SUMMARY

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## 1 INTRODUCTION

Parallel to evolution and progress, companies are faced with environmental and social dilemmas related to the use of natural resources and the various impacts caused by their actions. Faced with this reality, companies that adopt economic, social, and environmental objectives are of enormous importance for the sustainable development of “our” planet. This practice of adopting sustainability by companies and organizations is considered by Elkington and Upward (2016) as a main moral and economic imperative of this century, being one of the most important opportunities and risks for business, since nature, society and business are intertwined in complex ways and must be properly understood by the parties involved.

Furthermore, sustainable business models are needed that meet the needs of society considering social and environmental aspects. This concept must be observed particularly in the context of nascent companies known as startups, which due to their innovative nature and high scalability potential, it is essential to incorporate sustainable practices and objectives into the development of their business.

As they recognize the demand from society for greater involvement of sustainable aspects and a greater balance of their attitudes with the social and environmental impacts in the development of their products or services, building a responsible and sustainable business becomes a common objective for the startups. This new concept aimed at a sustainable business model is fraught with challenges, and makes companies and organizations continually adapt to changes in consumer behavior, values, and habits. To ensure their survival, established companies and even emerging ones such as startups need to develop mechanisms and strategies to quickly create new products and business models, developing the ability to motivate and engage those involved in innovation in this process (Ries, 2012).

However, building a business model present its own challenges and difficulties, requiring actions to meet customer needs more effectively, capturing and delivering value with these actions. Explicitly or implicitly, every company has a business model, used to describe and articulate the logic of creating, delivering and capturing value to its customers (Teece, 2010). Such a model can be considered a scheme that will guide the company in the definition and implementation of the strategy through organizational structures, processes and systems (Osterwalder, 2004).

To create or innovate in a business model, companies perform the process known as business modeling, that is, a set of cognitive actions with the objective of representing the activities of this company in a simplified way (Ostuzzi & Hoveskog, 2020). This set of actions in the contemporary business world are sometimes limited to the elements of the conventional profit-oriented business model and which aim only the financial performance (Hoveskog, Halila, Mattsson, Upward, & Karlsson 2018). These conventional business models are often based on creating, delivering and capturing economic value, with little or no regard for social and environmental values (Evans, Padmakshi & Short, 2014).

In this context, companies must offer value to all their stakeholders and not just to customers and investors (Laszlo et al., 2020), consider the risks and impacts of the business on the natural environment and society (Lüdeke-freund, 2017). This sometimes implies the creation or improvement of a business model through a business model that adopts a new concept and that encompasses not only the financial interests of the stakeholders, but also their social and environmental interests (Hoveskog et al., 2018).

This change reflects the immediate need for companies to develop new and viable business models, but which aim to achieve social and environmental goals, as well as financial goals known as “tri-profitability” presented by Upward and Jones (2016). This understanding is in line with the three dimensions that form the Triple Bottom Line, a term coined by Elkington (1998) by exposing how companies need and should contribute with the economic, social and environmental dimensions so that sustainability is effectively promoted.

Stubbs and Cocklin (2008) in their seminal study on sustainable business models, they already addressed the idea that for a company or organization to become truly sustainable, it must adopt environmental and social practices as a priority, and not just as a complement to the classic business model. Therefore, rethinking traditional business models focused exclusively on profit are of great importance for sustainable development and should guide the decisions and goals of these companies.

Sustainability-oriented business models are increasingly being discussed and identified (Breuer et al., 2018) and this, in fact, can be observed in some works. Changes in traditional business models have been recognized as a fundamental approach to sustainability (Evans et al., 2017). Another aspect addresses business model innovation as a potential mechanism for integrating sustainability into business (Jolink & Niesten, 2015; Schaltegger & Wagner, 2011; Upward & Davies, 2019), even though a sustainable business model can be more advantageous for companies, producing better financial results when the interest of all stakeholders is involved (Kurucz et al., 2017).

At this juncture, organizations are increasingly concerned and aware of sustainable aspects and the advantages that this can bring (Porter & Kramer, 2006). Although this perception and focus of sustainability management are traditionally addressed in large companies, industries, or organizations, this reality of incorporating sustainable aspects is becoming increasingly important and practiced by companies of all sizes, such as medium and small companies (Halberstadt & Johnson, 2014).

In this way, startups commonly considered small or medium-sized companies and with their scalable business models and inserted in an environment of uncertainty must adopt and incorporate such sustainable practices in the development of their business. Startups are considered as key actors in the economic development of a country or society (Petru et al., 2019). Great businesses are generated by them, in addition to revolutionary innovations, they contribute to job creation and economic growth (Tripathi et al., 2019). Yet, according to D'Avino (2015), these businesses have always played an important role in the development of the global economy, but recently their importance has grown significantly.

Therefore, with the objective of helping these startups and companies of the most varied sizes and activities, several business modeling tools aimed at sustainability have emerged (Hope, 2018), having in common the focus on incorporating socio-environmental principles and values into the strategic planning of these institutions. However, these sustainable business modeling tools are still little known, even though business models aligned with the principles of sustainable development are increasingly popular (Bocken et al., 2013).

In this context, this study is focused on a specific analysis tool, the Flourishing Business Canvas (FBC) developed by Upward & Jones (2016). The FBC is a tool in screen format for the implementation and creation of sustainable business models and has the premise of promoting the concept of sustainable business development through a visual and collaborative design, with a common language for stakeholders, allowing work together effectively to describe and plan a sustainable business model (Elkington & Upward, 2016). Considered an extended version of Osterwalder and Pigneur's Business Model Canvas (2010), can even be replaced, helping companies, organizations, and even universities to perform a schematic representation of their entire business model, considering levels of economic, environmental, and social sustainability (Broeck, 2017). Therefore, this study will focus on the usefulness and applicability of FBC in startups, due to the reduced amount of studies related to this specific type of company or organization.



From the results of the studies found on the applicability of the FBC, it can be seen that this tool can help companies to define opportunities and challenges around sustainability, integrating them into their activities and strategies. Thus, it is observed the importance of an empirical approach of this tool to understand the impacts, its effective applicability and usefulness in the development of sustainable and responsible models for startups. Therefore, the problem to be investigated will be presented below.

## 1.1 SEARCH PROBLEM

The problem presented in this study is related to the adoption and use of sustainable practices and principles by startups both in their operational strategy and in the development of their business model. As they develop their activities aimed at innovation and entrepreneurship of new products or services, startups cannot ignore or be indifferent to the assumptions of sustainability in all its aspects. Ferreira Junior (2019) already presented in his work a problematization that addressed this indifference and even what the author calls startups “forgetfulness” of these assumptions of sustainability, focusing primarily on the profits necessary to succeed.

The challenges of these startups are precisely in implementing these sustainable concepts and assumptions from the beginning of their existence. It is in the early stages of a company that organizational culture, identity, routines are formed, and which are difficult to change later (Kelly & Amburgey, 1991). In this way, the implementation of a business model focused on sustainability in the early stages of a startup can be extremely important. There is an understanding that in a society that values sustainable aspects, a startup can gain a positive reputation if it is sustainable, it can even perform better when adopting such concepts (Lange, 2017), conferring advantages in a way that generates the confidence of society and investors (Reverte, 2015).

However, not only the adoption of a business model focused on sustainability by startups can be understood as a problem to be solved by this research. The very definition and requirements needed to efficiently develop a sustainable business model need a better understanding.

Another perceived situation that raises the need for further studies refers to the reduced amount of academic papers published nationally on sustainable business modeling aimed at startups. Nevertheless, general studies on the conceptualization or applicability

related to the FBC are also scarce in Brazil, which is one of the pioneer works on this tool in the country. It is understood, therefore, that there are still possible questions to be solved and this research can contribute to this.

Studies on this tool are being developed recently in several countries. Among these, some stand out such as those of (Broeck, 2017; Elkington & Upward, 2016; Upward & Davies, 2019; Upward & Jones, 2016) in which they conceptualize and present the tool in greater detail. Other studies use the tool in order to test its effective applicability in the development of sustainable actions by organizations, such as (Dahou, 2018; Hoveskog et al., 2018; Karlsson et al., 2016; Sonowal, 2017). Studies also present the FBC as a business analysis tool (Amaliah, Najib, & Jahroh 2019; Echeverría, 2017; Jiménez Herráez, 2019). Comparative studies of sustainable business modeling tools that address FBC are presented by (Hope, 2018; Mathues, 2019).

Therefore, opportunities were observed to take actions to solve these problem situations encountered, that is, to encourage sustainable practices by startups through the application of sustainable business models. Consequently, by carrying out this approach with the application of the FBC tool, it is possible to contribute to the development and improvement of business modeling tools aimed at sustainability.

### 1.1.1 Research Question

Considering what was exposed in the previous section, the research question it raises is: What is the potential of Flourishing Business Canvas as a tool for the development of sustainable business models for startups?

## 1.2 OBJECTIVES

### 1.2.1 General

Investigate the use of Flourishing Business Canvas as a tool for the development of sustainable business models by startups.

### 1.2.2 Specifics

- a) Introduce and apply the Flourishing Business Canvas tool with startups through workshops;
- b) Evaluate the perception of workshop participants in the use of Flourishing Business Canvas;
- c) Validate the tool after holding workshops with startups;
- d) Propose improvements in the tool to make it suitable for the context of startups.

### 1.3 JUSTIFICATION AND CONTRIBUTION OF TECHNICAL PRODUCTION

This work is justified by two aspects: first, by the importance of adopting principles of responsibility and sustainability in their business models by companies and organizations in general, and that in this study in particular focuses on startups and the development of their business models focused on sustainability. A second justification is related to the gap in the literature on studies related to business modeling, especially about the use of the FBC tool, the central theme of this work. Growing evidence suggests that startups should be considered in light of sustainable development (Halberstadt & Johnson, 2014). Broeck (2017) in his study considers the importance of creating, capturing and delivering sustainable values to its customers through sustainable business models, making startups strongly adapted to this concept from the beginning of their operations. Other works address the importance of sustainability initiatives, through business models for companies and organizations (Boons & Lüdeke-Freund, 2013; Lüdeke-Freund et al., 2016; Schaltegger, Hansen, et al., 2016; Stubbs & Cocklin, 2008). However, as much as the approaches of these works refer to companies or organizations, such concepts can also be applied to startups.

In this way, the motivations for sustainability management and adoption of these practices by startups are relevant when starting their activities or even in modifying their already established business model. Among these, some of the great importance can be considered, such as the high power of scalability, that is, startups do not remain small, but rather, are oriented to rapid growth (Gregory et al., 2005). Another aspect is related to the fact that they practice entrepreneurship in an environment of extreme uncertainty (Ries, 2012), this makes the startup more susceptible to competition, legislation and even systemic problems caused by the economy (Nassif et al., 2020).

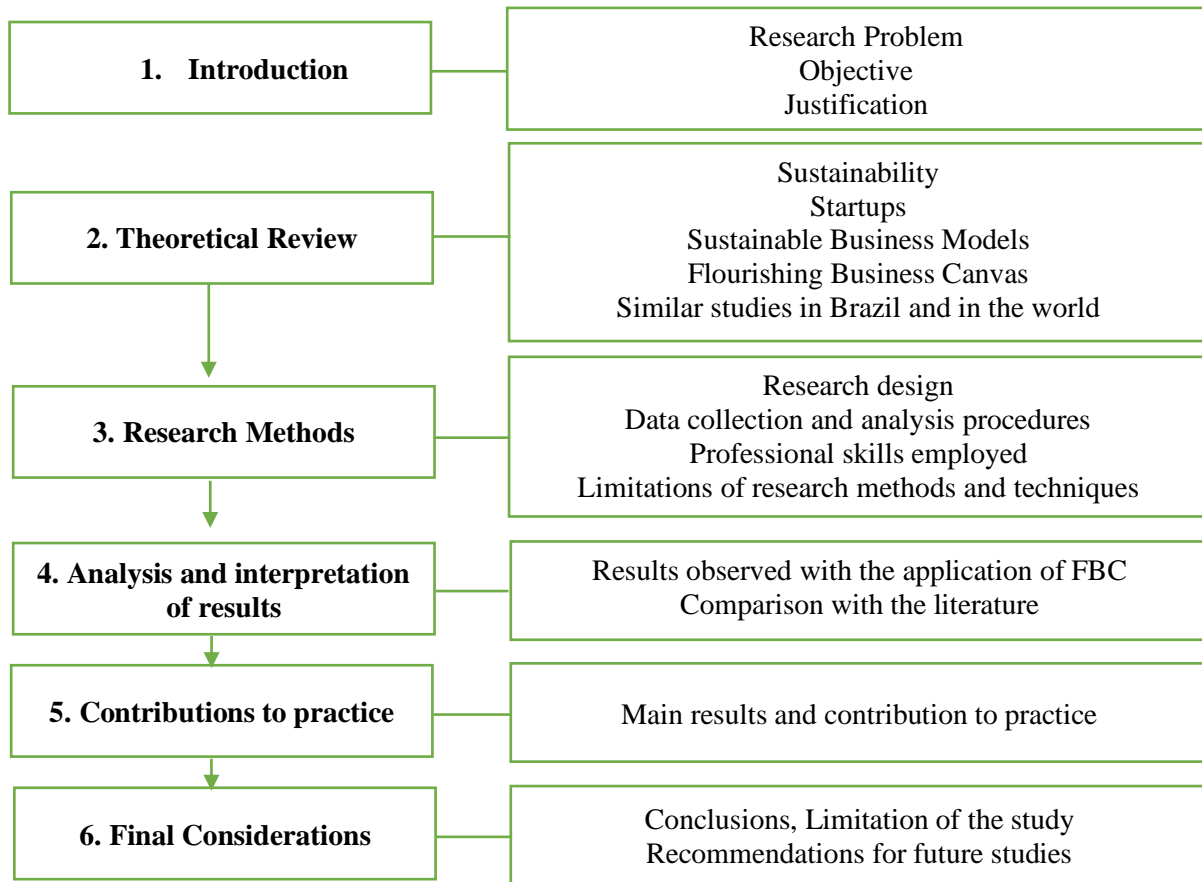
The reason for the failure of some startups is precisely in the focus only on the development of the product or service, neglecting the business model (Blank, 2007). Efforts to develop a new product must be accompanied by the elaboration of a business model that really defines its value capture strategies (Chesbrough & Rosenbloom, 2002; Teece, 2010). In this sense, it is entirely justifiable for startups to redesign their existing business models, to a model with a more sustainability-oriented direction, this can offer an opportunity to differentiate themselves from competitors and create a competitive advantage (Schmitt & Renken, 2014) as well as obtaining mechanisms to perpetuate itself in the market.

Another important justification concerns the gap in academic production on sustainable business models, especially the FBC tool. To support the present work, a systematic review of the literature on the state of the art of the FBC was previously carried out (Pellin & Lago, 2021). After extensive research in renowned national and international journals in the areas of administration, in a bank of national thesis and dissertations and in the main world indexers, only 16 works were found that somehow applied or conceptualized the FBC tool, and among these, only one was published nationally in 2018 at the International Meeting on Business Management and the Environment (ENGEMA). Therefore, this study is one of the precursors about this tool and its business modeling methodology. In this way, it justifies the interest and relevance in contributing both academically and in practice to fill the gaps found on this topic.

#### 1.4 DISSERTATION STRUCTURE

As shown in Figure 1, this study is structured in six chapters: introduction, theoretical framework, research methods and techniques, analysis and interpretation of results, contributions to practice and final considerations.

Figure1 - Structure of the dissertation



Source: own authorship (2021).

The introductory chapter aims to present a brief description of the topic that will be addressed in future chapters, as well as to present the research problem that was used to support the development of this study, it also presents the justifications for carrying out this study, and the objectives that they seek to obtain through their realization.

Chapter 2 presents the theoretical framework that serves as a basis for the development of the work and that supports the general and specific objectives. This framework delimited the scope of study to concepts that are relevant to the research problem, such as: sustainability, startup-type organizations, sustainable business models and the Flourishing Business Canvas sustainable business modeling tool. Also, similar experiences in Brazil and in the world with the application and conceptualization of this tool are presented in this chapter.

Chapter 3 presents the research methods and techniques used to develop the work. The research design, procedures for data collection and analysis, personal experiences used for the elaboration of the study and, finally, the limitations of the methods and techniques used are presented.

Chapter 4 presents the analysis and interpretation of the results obtained with the application of the tool with startups, as well as the understanding and perception of the participants and researcher about the usefulness and usability of the tool for business modeling. Additionally, the findings are compared with the theoretical basis and studies already published.

Chapter 5 presents the main results obtained, lessons learned from the study in practice and the consideration of the validity of the FBC as an efficient tool for modeling sustainable business for startups. Chapter 6 presents the final considerations of the study, as well as limitations and recommendations for future studies.

## 2 THEORETICAL AND PRACTICAL REFERENCES

One of the most important steps in the elaboration of a research project is the literature review. It is through the theoretical foundation carried out by the analysis of the published literature that the theoretical framework that will provide the conceptual support for the development of the research will be traced (Silva & Menezes, 2005). It serves as a first step to know the state of the investigated problem, also serving to establish an initial theoretical model of reference (Prodanov & Freitas, 2013). Thus, this theoretical survey chapter will focus on clarifying the essential concepts for the development of the research of this dissertation. Themes related to sustainability, startups, sustainable business models and the Flourishing Business Canvas will be presented.

The search and analysis of the documents occurred primarily from January to April 2021, although additional data collection occurred longitudinally, that is, throughout the development of the project. In a first stage, searches for theses and dissertations were carried out in the CAPES Theses and Dissertations Catalog and in the Brazilian Digital Library of Theses and Dissertations (BDTD) of the Brazilian Institute of Information in Science and Technology (IBICT). In a second step, the searches focused on papers available in indexing databases, and for this purpose the following databases were chosen: Elsevier, Ebsco, Science Direct, Oxford Academic, Sage Journals, Scielo, Scopus, Web of Science, WorldCat, Emerald, Google Scholar and the Capes Periodicals portal, considering scientific articles, published chapters of books and full books.

For the searches the terms sustainability, startups, business models, sustainable business models and Flourishing Business Canvas were used, in Portuguese and English when applicable. By reading the abstracts, methodology and conclusions, the relevant papers were selected for the basis of this study. It is worth pointing out that, as a rule, we accepted articles classified under the Qualis A1, A2, B1, B2 or B3 classification system in the "Business and Public Administration, Accounting and Tourism" evaluation area of the Coordination for the Improvement of Higher-Level Personnel (CAPES).

However, some international works were used that were not possible to be framed in these classifications, but that had great relevance for the study, including some books considered as seminal and essential for the development of this research.

Table 1 presents the references of authors used to prepare this reference according to each theme:

Table 1 - Authors used for the theoretical framework

Themes	References
Sustainability	Van Bellen (2004); Lago (2013); Romeiro (1999); Meadows et al. (1972); Ribeiro, 2010; World Commission on Environment and Development (1987); Elkington (1997); Mebratu (1998); Ferreira Pimenta e Nardelli (2016); Heinberg (2010); Sachs (2002); Dyllick e Hockerts (2002); Barbieri et al. (2010); Hubbard (2009); Norman e MacDonald (2004); Tullberg (2012); Gibson (2009); Schaltegger e Burritt (2013); Weissbrod e Bocken (2017); Bocken (2015).
Startups	Ferreira Junior (2019); Figueira et al. (2017); Pereira (2020); AbStartup (2021); StartupBase (2021); Ries (2012); Minatogawa (2013); Oliva e Kotabe (2018); Blank e Dorf (2014); Cusumano (2013); Dalmarco et al. (2017); Wu e Atkinson (2018); Blank (2013); Aulet (2015); Biazús (2020); Brigidi (2009).
Sustainable business models	Nielsen e Lund (2018); Breurer (2018); Bashir et al. (2020) ; Bocken et al. (2013); Boons e Lüdeke-Freund (2013); Zott, Amit e Massa (2011); Dahou (2018); Upward e Jones (2016); Broeck (2017); Fernandes et al. (2021); Nosratabadi et al. (2019); Oftedal et al. (2021); Boons e Lüdeke-Freund (2013); Bashir et al. (2020); Dentoni et al. (2020); Holliday, et al. (2017); Breuer et al. (2018); Schaltegger et al. (2016); Elkington (1997); Stubbs e Cocklin (2008); Lüdeke-Freund e Dembek, (2017); França et al. (2017); Martinuzzi e Krumay (2013); Porter e Kramer (2006); Hope (2018); Joyce e Paquin (2016); Yang et al. (2017); Ahmed e Sundaram (2012); Broman e Robert (2017).
Flourishing Business Canvas	Upward (2013); Osterwalter e Pigneur (2010); Jones e Upward (2014); Upward e Jones (2016); Ehrenfeld e Hoffman (2017); Hope (2018); Broeck (2017); Lüdeke-Freund et al. (2016); Elkington e Upward (2016); Kaplan e Norton (1992); Upward & Davies (2019); <i>Flourishing Enterprise Innovation</i> (2021); Pellin e Lago (2021); Zagel e Tarhonskyi, (2020).

Source: own authorship (2021).

## 2.1 SUSTAINABILITY

### 2.1.1 Historical concept of sustainability

Great changes marked the second half of the 20th century as a result of growing doubts about the future of the environment. The multiplication of environmental disasters such as those in Minamata Bay in Japan in 1956, the Bhopal accident in India in 1984, the accident at the Chernobyl nuclear power plant in the former Soviet Union in 1986 and the Exxon Valdez oil spill in 1989 triggered an important advance in the awareness of the environmental problems and impacts that human activities can cause (Van Bellen, 2004). In this way, it awakened in society the need to include these themes related to the environment in its debates (Lago, 2013).

In such a context of events, the concern for sustainable development became part of the concerns of global interest, and even in the early 1970s environmentalists and world



organizations began discussions in favor of preserving the environment. This concept of sustainable development initially emerged according to Romeiro (1999) with the name of "ecodevelopment" being a response to the impact produced by the Club of Rome report, known as "The limits to growth" (Meadows et al., 1972) an association of scientists, politicians and businessmen concerned with global issues, however, with different views on the relationship between economic and environmental growth. Still, according to Romeiro, this polarized group was classified between the radical "techno-centric" for whom the environmental limits to growth were relative and irrelevant through the driving force of economic growth, and on the other hand the radical "eco-centric" group, for which the environment presents absolute limits to economic growth, with humanity being close to a catastrophe.

In the same year as the publication of the Club of Rome report in 1972, the United Nations Conference on the Environment, also known as the Stockholm Conference, was held in Stockholm, Sweden. During the conference, it was highlighted that most environmental problems occurred on a global scale and grew exponentially, thus breaking with the idea of absence of limits for the exploitation of natural resources as a counterpoint to the growth of industrial society (Van Bellen, 2004). On this occasion, aspects related to atmospheric pollution were also discussed and the creation of the United Nations Environment Program (UNEP) was decided upon, a program that began to lead discussions on environmental factors on a global scale (Ribeiro, 2010).

In 1987, in the search for the reduction of social and environmental impacts, the classic definition of the concept of "sustainable development" emerged, created by the World Commission on Environment and Development (WCED), which led to a relevant report entitled "Our Common Future". Also known as the Brundtland Report, due to the fact that the commission was chaired by the then prime minister of Norway, Gro Harlem Brundtland, it expresses sustainable development as development that "meets the needs of the present without compromising the ability of future generations to meet their own needs" (World Commission on Environment and Development, 1987). Thus, sustainability reaches the 21st century being considered a great paradigm, with its concepts and solutions for socio-environmental problems gaining space on the list of international concerns (Elkington, 1997; Mebratu, 1998).

In 1992, held by the UN (United Nations), the largest conference on the environment since Stockholm took place in Brazil. Known as the United Nations Conference on Environment and Development, or Earth Summit, also called Rio-92 or Eco-92, it had 175

delegations from different countries, and five official documents were approved at this conference, including three conventions: Biodiversity, Desertification and Climate Change, in addition to a Declaration of Principles and the creation of Agenda 21, thus consolidating the concept of sustainable development (Ferreira Pimenta & Nardelli, 2016).

### 2.1.2 Sustainability precepts

According to Heinberg (2010), the precepts of sustainability are based on the essence of what “can be maintained over time”. This implicitly means that a society or any aspect of that society involved, even if not measurable, cannot be maintained over the long term, and at some point it may cease to exist or function (Heinberg, 2010).

To Sachs (2002) sustainable development is a global challenge, regardless of how it is conceptualized since the current configuration of the world is in total imbalance. At this point, according to the author, a sustainable society is characterized by “meeting simultaneously the criteria of social relevance, ecological prudence and economic viability, the three pillars of sustainable development” (Sachs, 2002).

Thus, one of the most important approaches to the dimensions of sustainability in recent years is presented by Sachs (2002) with his eight dimensions of sustainability, according to Table 2:

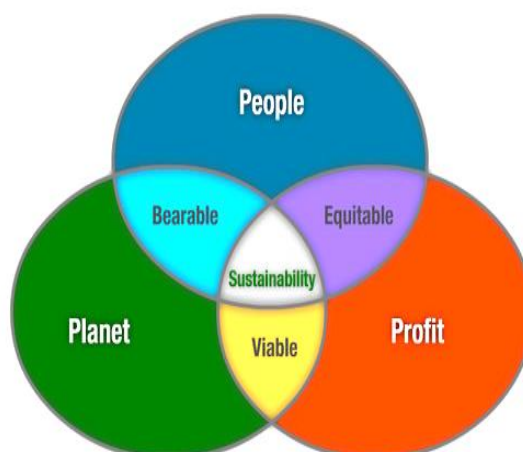
Table 2 - Sustainability rating

Dimensions	Concept
Social	It is related to the achievement of social homogeneity, with a fair distribution of income, in which there is equal access to resources and social services.
Cultural	Suggests balance, tradition and innovation, autonomy in the elaboration of integrated national projects.
Ecological	Proposes the preservation of natural capital and the limited use of these natural resources.
Environmental	Dimension related to respect and care for natural ecosystems.
Territorial	It deals with the balance between urban and rural configurations, with the improvement of the urban environment and the development strategies of the regions.
Economic	Addresses the economic balance between sectors, food security, modernization of production means, scientific and technological research, and its insertion in the economy.
National policy	Involves democracy, human rights, and the implementation of national projects in partnership with all entrepreneurs at a reasonable level of social cohesion.
International policy	It deals with the promotion of peace and international cooperation, international financial control, management of natural and cultural diversity, and scientific and technological cooperation.

Source: own authorship (2021) based on Sachs (2002).

One of the best known and most used concepts to describe sustainability is probably the term coined by John Elkington (1997) known as the “Triple Bottom Line” (TBL). In its model, the relationships and influences between the three guiding pillars of sustainability are explained: economic prosperity, environmental quality and social justice (Elkington, 1997). According to Elkington, sustainable balance can be achieved when an organization considers the integration of the three pillars of sustainability by observing what he calls the 3 “P” (people, planet, profit), where the term “people”, addresses the human capital of a society or organization, the term "planet" is related to the natural capital of the society or organization, and "profit" refers to the organization's positive economic results. Therefore, sustainability concerns the balance or harmony between economic sustainability, social sustainability and environmental sustainability. Graphically, this relationship can be represented as the intersection of three circles (Figure 2), and only when all three factors are considered.

Figure 2 - The interconnection of the elements of the Triple Bottom Line concept



Source: own authorship (2021) based on Elkington (1997).

A similar understanding is presented by Heinberg (2010) by stating that sustainability is composed of three overlapping and mutually dependent objectives, encompassing the three pillars of sustainability as well as TBL: “living in an environmentally sustainable or viable way in the very long term”; “living economically sustainable while maintaining long-term standards of living”, and “living in a socially sustainable way, now and in the future”.

In this dissertation, as it is a study involving sustainability in the business environment, the TBL sustainability approach proposed by Elkington (1997) is adopted. This approach appears to be adequate, because according to Dyllick and Hockerts (2002) the development of the TBL concept applied to the business environment, showed that when

implementing sustainability in these environments it is important to integrate all three dimensions simultaneously to create a truly sustainable company.

Along the same lines, Barbieri et al. (2010) in their study on sustainable and innovative organizations, they declare the three dimensions of TBL as elements of sustainability. They consider the three dimensions of sustainability: at social levels, where the concern is linked to the social impacts caused by organizations; at the environmental level, where the concern is focused on the environmental impacts caused by the use of natural resources and the emission of pollutants; and at the economic level, where the concern is related to the economic efficiency of the organization with the generation of profit and its perpetuity.

The concept of TBL, according to Hubbard (2009), fits the assumptions of sustainable development proposed by the WCED. However, it finds its application as a tool to measure organizational performance by integrating the TBL concept with initiatives to measure and evaluate organizational performance (Hubbard, 2009).

However, there are criticisms of sustainability assessment initiatives based on the TBL. Norman and MacDonald (2004) in a study elaborated on a critical analysis of the TBL notion, they argue that the inclusion of these initiatives alone does not guarantee that companies or organizations actually introduce effective social and environmental actions. Tullberg (2012) presents a critical analysis of the TBL, considers that there must be an improvement in the model to what he refers to as primitive, suggests in this study the creation of a fourth “P” representing Progress. Gibson (2009) suggests that for the successful introduction of TBL in a company, it is necessary that the three pillars (environmental, social and economic) are not managed separately, but rather consider the interdependencies between them. Broeck (2017) in a similar understanding states that only by integrating these three dimensions; social, environmental and economic sustainability, can a company really take sustainability to its business seriously. Schaltegger and Burritt (2013) they also argue that the great challenge is not just to integrate these three dimensions into the business structure but to optimize all three equally.

When relating sustainability practices to startups, the subject of the next item in this reference, Weissbrod and Bocken (2017) state that for startups to add value to their products or services, they must incorporate sustainable principles into their business model and innovations. Bocken (2015) sees in startups a great possibility to create sustainability and innovation through its business model, being seen, therefore, as a response to the solution of social and environmental problems.

## 2.2 STARTUPS

The origin of the term startup is directly linked to entrepreneurship, and it spread in the United States in the early 90s of the 20th century amid the emergence of the internet bubble, also characterized as the “dot com” bubble (Ferreira Junior, 2019; Figueira et al., 2017). However, there is no exact definition of the emergence and use of the term in Brazil, it is estimated that the concept started to be used from the year 2010 (Pereira, 2020), and this understanding corroborates the data from the Brazilian Association of startups, where a vertiginous growth of this type of company is verified from 2010 (Abstartups, 2021). According to data from StartupBase (2021) Brazil currently has 13,509 startups in activity, mostly distributed among the states of São Paulo, Minas Gerais, Rio Grande do Sul, Rio de Janeiro and Paraná.

One of the most classic concepts to characterize a startup is presented by Ries (2012), in her work entitled *Lean Startup*. The author characterizes a startup as “a human institution designed to create a product or service under conditions of extreme uncertainty”, with innovation, whether technological, product, service, process or business model, as the center of its activity’s operations.

Ries (2012) emphasizes that, since the startup is an institution and not a product or service, there is a need for a management and business model adapted to this context of uncertainties. This condition of uncertainty is related to the lack of knowledge if this new product or service will find a business model that is viable for your organization in a business environment of high volatility, uncertainties and complexities (Minatogawa, 2013; Oliva & Kotabe, 2018).

Blank and Dorf (2014) in their manual for the startup entrepreneur, define a startup as a temporary organization in the search for a business model that is scalable, recurring and profitable. Cusumano (2013) states that startups form an engine in economic renewal and technological evolution around the world. They exist to face uncertain situations with the objective of developing new businesses, and in order for them to succeed, these organizations must focus on developing their business model in a market where there is a possibility of rapid and scalable growth (Cusumano, 2013; Ries, 2012).

The startup can be considered as a company born from an agile and lean business model, capable of generating value for its customer by solving a real problem with a scalable solution for the market with the use of technologies (Abstartups, 2021). The same perception as that of Oliva and Kotabe (2018) when pointing out that startups are agile organizations

with dynamic capabilities to take risks of different natures due to their appetite and tolerance for these risks, acting quickly in their strategy to keep up with changes in their business environment. business.

These organizations do not follow a linear path in the development of their business, that is, unpredictable events and process improvements and the exploration of new technologies change both the performance and the market of these startups (Dalmarco et al., 2017). In this sense, Wu and Atkinson (2018) they cite characteristics that startups should adopt, such as finding ways to grow even before they are able to generate large revenues; they must be prepared for competition on a global level; they need to be able to develop and protect their intellectual properties and they need to be prepared to attract talent for the development of technologies.

Traditionally presented as a new business at an early stage, the startup concept has been used from different perspectives, sometimes highlighting the specific characteristics of these businesses about their objectives, at other times, related to the context in which they are created, however, differentiating itself from the traditional concept of a business or organization (Blank, 2013; Ries, 2012). In this sense, Blank and Dorf (2014) claim that a startup is not a smaller version of a large corporation. In fact, it distinguishes itself from this in that it does not run a business model where customers, resources and problems are known, but rather operates through the search and construction of a recurring and profitable business model.

However, a startup is not only different from a large organization, but also from small traditional businesses. Bill Aulet, director of the Entrepreneurship Center at MIT (Massachusetts Institute of Technology) presents a dissociation between entrepreneurship carried out by small and medium-sized companies and that carried out by innovation-oriented startups (Aulet, 2015). The author also highlights that, unlike small and medium-sized businesses considered traditional, startups seek to build a business model with some technology, process or innovation that provides them with a competitive advantage compared to other conventional businesses.

Aulet (2015), presents a list of characteristics that differentiates these two types of ventures (Table 3), paying attention to the fact that for a healthy economy, both styles of entrepreneurship are necessary, but that, due to their substantial differences, they need a business model and different skills to succeed.

Table 3 - Differences between entrepreneurship of small and medium companies and startups

Small and medium enterprise entrepreneurship	Entrepreneurial startups
Focus on local markets.	Focus on global or regional markets
Innovation is not necessary for the creation and growth of these companies, nor is it even a competitive advantage.	Is based on some kind of innovation (technology, business process, model) and gains potential competitive advantage from it
Present as non-tradable jobs usually done locally (e.g. restaurants, services, manufacturing).	Marketable work - work that does not have to be done locally.
Often family businesses or businesses with little outside capital.	More diverse ownership base, including a wide range of external capital providers.
Usually grows at a linear rate. Responds quickly when money is injected into the company, the system (revenue, cash flow, jobs, etc.) will respond quickly in a positive way.	Company starts by losing money, but if successful will have exponential growth. Requires investment and when money is injected into the company the revenue/cash flow/job numbers do not respond quickly.

Source: own authorship (2021) based on (Aulet, 2015).

Another important aspect when conceptualizing a startup is related to associating these organizations in a temporal horizon. Startups are defined in this way until their business model is found, duly validated and proven to be sustainable, having demonstrated its scalability, recurrence and profitability characteristics, at which time this organization ceases to be a startup and becomes a corporation (Blank & Dorf, 2014). According to the authors, this life cycle should follow the following steps presented in Table 4:

Table 4 - Startup life cycle

Etapas	Activity developed
Customer Discovery	Validation of the hypothesis that the startup's product or service solves the potential customer's real problems. This is the moment when the entrepreneurs must be in the field understanding the real problems and the proposed solutions.
Customer Validation	Validation of the existence of a commercial and sales model that can scale the acquisition of the solution. At this moment you will find the early adopters, people who will initially acquire the solution and even help in the necessary adjustments and validations.
<i>Customer Creation</i>	This is the moment when the search for sales scalability and customer loyalty is at its core.
<i>Company Building</i>	This is the moment when there is a proven, scalable, and repeatable business model, and at this moment you seek to formalize departments that were previously dedicated to discovery to finally have their own missions in the new company.

Source: own authorship (2021) based on Blank and Dorf (2014).

According to this model, it can be inferred that, while a company is going through the steps of customer discovery, validation and prototyping of its business idea, it can then be

considered a startup. From the moment that it advances in the generation of demand and structuring of the company, therefore, it ceases to be a startup.

It is understood that the concept of startup is still somewhat confusing, mainly due to the multiplicity of companies, areas, products and different business models. Due to the fact that there are several equivalent terms for the definition of startups, however different nomenclatures, conceptualizing and clearly characterizing the term startups can be a complex and comprehensive task (Ferreira Junior, 2019; Minatogawa, 2013). Other authors consider that the startup concept has not reached maturity, as there is no consensus on this type of company. Even with many specialized publications on the subject, the definition of the concept is still unclear (Biazús, 2020; Brigidi, 2009)

A study presented by Blank and Dorf (2014) presents startups as companies built to search for a business that is scalable and replicable with the proper development of a business model for this purpose. The next item in this chapter addresses this business model concept and the integration of sustainable contexts in its elaboration.

### 2.3 SUSTAINABLE BUSINESS MODELS

The business model gained notoriety with the popularization of the internet, at the beginning of the “dot com” era in the late 1990s, where the digital economy and new ways of doing business were introduced (Nielsen & Lund, 2018). The concepts of sustainable business models, on the other hand, arise from the concern of companies to incorporate sustainable practices into their objectives (Breuer et al., 2018) and the relationships between business models and sustainability are increasingly being identified and discussed (Bashir et al., 2020; Bocken et al., 2013; Boons & Lüdeke-Freund, 2013).

Zott, Amit and Massa (2011), define that for a company or organization to embody the way of doing business and make their products or services reach the final consumer, they need to substantially elaborate a business model. Such a model will be the systemic and synthetic representation of the company's origin of value, being the reference that will define how this company or organization intends to establish itself and guarantee its future profitability, defining its objectives and producing results (Dahou, 2018).

In this sense, one must stipulate how and with whom the organization will relate, what the organization does now and in the future, how it operates and how it measures its success (Upward & Jones, 2016). A business model is an integrated concept that presents an



overview, explaining how values are created, captured and delivered to customers (Broeck, 2017), therefore, it becomes interesting and indispensable for companies to integrate sustainability values into their model.

Thus, several concepts about SBMs (Sustainable Business Models) are found in the literature, however, there is a consensus in these studies that sustainable models have as their main structure the creation of values by companies and organizations (Pellin & Lago, 2021). This value creation mechanism has a great intrinsic potential to generate social and environmental value for society (Fernandes, Sousa-Filho & Viana, 2021). In the same way, it integrates sustainability concepts in companies and organizations, in a responsible and sustainable way, with the objective of creating, delivering and capturing values in economic, social and environmental contexts (Nosratabadi, Mosavi, Shamshirband, Zavadskas, Rakotonirainy & Chau, 2019; Oftedal et al., 2021).

Boons and Lüdeke-Freund (2013) state that the implementation of a SBMs has great potential to incorporate sustainability principles, as well as to integrate sustainability objectives into the value proposition, creating value as well as capturing value for the company. Schaltegger, Hansen, and Lüdeke-Freund (2016), in turn, state that a business model focused on sustainability has the principle of helping to describe, perform analyses, manage and communicate a company's sustainable and responsible value proposition to its customers and stakeholders. This is also partly understood as one of the challenges when designing SBMs, where there is a need to develop businesses that facilitate the adoption of sustainable solutions by the consumer, that is, the definition and description of the value offered to the consumer in comparison to others. offers on the market (Bashir, Jørgensen, Pedersen, & Skard, 2020).

This process of creating sustainable values by a company is sometimes associated with improvements in social and environmental performance, reinforcing the idea that sustainable business initiatives must be evaluated in terms of their impact on the socio-environmental system, and not just at the organizational level (Dentoni, Pinkse & Lubberink, 2020). Such sustainable models, therefore, must effectively contribute to reducing the harmful effects of business activities on the environment and society, providing solutions to help companies meet their sustainability and economic goals simultaneously (Holliday, Schmidheiny & Routledge, 2017).

Breuer et al. (2018) define that when implementing an SMBs, organizations should not only consider economic profits as the central focus of the company. An SMBs requires the negotiation and definition of values, norms, interests and objectives related to various types of

social, economic and ecological outcomes (Boons & Lüdeke-Freund, 2013; Stubbs & Cocklin, 2008; Upward & Jones, 2016). Schaltegger et al. (2016) they also share the idea that companies and organizations should expand their responsibility and balance the economic, social and environmental considerations that contribute to sustainability. This understanding is in line with that proposed by Elkington (1997) when approaching that the development of a SBMs must differ from conventional approaches, adding to its objective the triple result, that is, applying the concepts of the Triple Bottom Line to its business model. In the same sense, Upward and Jones (2016) define the triple result as the sum of the damages and benefits arising from the company's activities in each of the environmental, social and economic contexts.

Stubbs and Cocklin (2008) in one of the seminal studies on SBMs, suggest that for organizations to be truly sustainable, there must be a real transformational shift from the current neoclassical model of business models, as opposed to just a complementation of environmental and social factors and priorities. They present that a SBMs must be based on social, economic, and environmental aspects. The authors also point out that an organization must express its purposes, vision, and mission to social and economic results through this business model.

In a similar understanding, studies consider some fundamental and important aspects for the strategy of a SBMs, such as, to include sustainable concepts in the company's mission and vision, as well as co-creation of values bringing benefits to customers (Bocken et al., 2013; Lüdeke-Freund & Dembek, 2017). Other studies also emphasize the need to create products or processes that solve customers' needs, considering the reduction of impacts on the environment, product life cycle and the involvement of stakeholders (France, Broman, Robèrt, Basile & Trygg, 2017).

Another important aspect about SBMs is presented by Martinuzzi and Krumay (2013) stating that when sustainability is strategically approached it can increase the success and performance of the entire business. This demonstrates that integrating the concepts of sustainability into a company's business model helps to improve the business itself as well as its surrounding environment (Breuer et al., 2018). This is described by Porter and Kramer (2006) as creating shared value for the company and society, by rethinking their business activities in a close relationship with society in order to increase the role of stakeholders in the business.

However, there is still a need for a unified and shared understanding of the requirements to build and apply SBMs. There is a need for a better understanding of both

research and practice on the subject, not only of how SBMs are constituted, but also the structures and tools for designing and implementing them (Schaltegger et al., 2016; Upward & Jones, 2016; Upward & Jones, 2016). 2016). Breuer et al. (2018) state that there is a growing discussion about the relationship between business models, innovation, and sustainability, however, there is a need for these SBMs to grow and spread to be more effective. Bocken, Short, Rana and Evans (2013), in turn, state that these tools aimed at sustainable business are still little known, even though the concept of a business model aligned with the principles of sustainability is increasingly discussed.

Thus, with the objective of helping companies and organizations in the development of these responsible and sustainable models, several business modeling tools aimed at sustainability arise. These tools can be used to assist organizations in the development of new business models and to assess their applicability to the design of responsible and sustainable business models (Hope, 2018).

Among these tools for sustainable business modeling, we can mention some such as the Triple Layered Business Model Canvas (TBLC) developed by Joyce and Paquin (2016), where in an extended version of the Business Model Canvas explores the innovation of the business model focused on sustainability, adding the conventional canvas of the Model Canvas to the environmental and social layers based on the perspectives of the stakeholders. TBLC also adopts the Triple Bottom Line concepts, providing organizations and their leaders to explicitly integrate economic, social and environmental values into their objectives (Hope, 2018; Joyce & Paquin, 2016). It also advocates that organizations formally account for their environmental and social impacts together with their economic objectives.

Another strategy used for sustainable business modeling is the Sustainable Value Analysis Tool (SVAT) developed by Yang, Vladimirova, Rana and Evans (2017), a tool designed to help companies and organizations identify opportunities to capture value through sustainability by analyzing captured and uncaptured value for key stakeholders across the product life cycle. This tool was created with the intention of supporting the idealization of sustainable business models, rather than implementing them, however, it can be used in conjunction with other business modeling tools (Yang et al., 2017).

Ahmed and Sundaram (2012) developed the Sustainable Business Transformation roadmap (SBT), a procedural tool to help companies develop a new sustainable business model. The purpose of the tool is to encourage those involved to understand the challenges of sustainability in the business supported by the structure and modeling of integrated sustainability reports. It seeks to develop sustainable and responsible businesses, seeking to

integrate people and technologies into its systems and structures to achieve sustainability (Ahmed & Sundaram, 2012).

On the other hand, the tool developed by Broman and Robèrt (2017) and entitled Framework for Strategic Sustainable Development (FSSD) helps business organizations identify opportunities to develop products and business models in line with changing global market conditions. Through its methodology, it helps leaders to gain competitive advantage in sustainability-oriented markets (Broman & Robèrt, 2017).

Finally, we highlight the main tool that will be explored in this study, entitled Flourishing Business Canvas (FBC) and which will be presented and conceptualized in greater detail in the next item of this chapter.

## 2.4 FLOURISHING BUSINESS CANVAS (FBC)

Based on Antony Upward's thesis (2013) entitled “Towards an Ontology and Canvas for Strongly Sustainable Business Models: A Systemic Design Science Exploration” and inspired by the Business Model Canvas tool by Osterwalder and Pigneur (2010), the FBC was originally conceptualized and presented by Jones and Upward (2014) being the original research defining the language of the screen presented by Upward and Jones (2016).

It is part of a set of tools designed by professors, researchers and entrepreneurs to help companies improve their social, environmental and economic performance, helping organizations through the identification of relevant risks and opportunities, in order to achieve a series of objectives, starting from financial viability to how to “do good by doing well” (Flourishing Enterprise Innovation. Tools for the Strongly Sustainable Revolution – Socially Beneficial, Environmentally Regenerative and Financially Viable, 2021).

The Flourishing Business Canvas (FBC) is a collaborative visual design canvas tool that provides a common language for the organization's stakeholders, allowing them to work together effectively to describe an SBMs for the enterprise. The term flourishing, used to name the tool, is conceptualized by Ehrenfeld and Hoffman (2017) as the possibility for the human race and other species to flourish on earth forever.

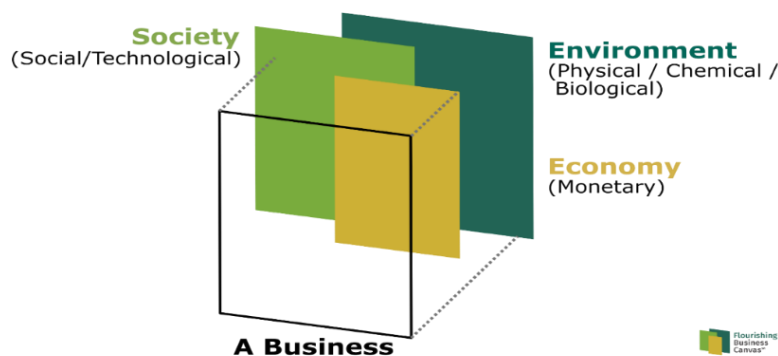
The FBC canvas helps design a sustainable business model based on a participatory approach to business modeling. The result is an approach that increases an organization's ability to learn and reflect on sustainability and increases its ability to take practical action (Hope, 2018). The advantage of this tool is that although it includes many elements in its

screen composition, it is still easy to use and apply by companies, students and stakeholders (Broeck, 2017; Lüdeke-Freund et al., 2016).

FBC canvas elements go beyond Osterwalder and Pigneur's Business Model Canvas (2010), moving away from the classic profit model, also including economic, social and environmental contexts, its stakeholders and their needs, is a more radical model of the Business Model Canvas (Lüdeke-Freund et al., 2016; Upward & Jones, 2016). The tool aims to answer questions about how the organization defines its economic, environmental and social success from the perspective of all involved parties (Broeck, 2017).

FBC features and functionality are introduced in greater detail by Elkington and Upward (2016). In this work, the authors present one of the main concepts of the screen, in which there is a division into three layers (Figure 3) in which organizations and companies are part: environment (all life on the planet and associated processes), society (people individually and collectively, our culture and technology) and economics (revenues, costs and profits), these layers are the foundation of the canvas where the question blocks are spread across these three systems.

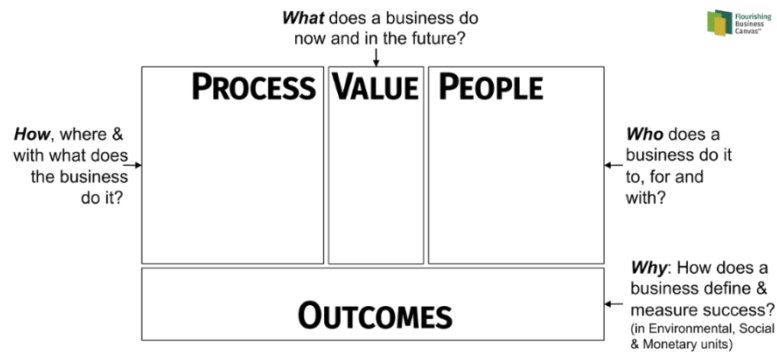
Figure 3 - Contextual systems for any business



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Then, four logical perspectives that are desirable for a business (process, value, people and results) are added to the screen (Figure 4) as directed by Kaplan and Norton's Balanced Scorecard (1992). This allows the tool to model the logic of an organization's existence. These questions are related to the four perspectives and aim to answer the following questions: Process - how, where, and what does the business do?; Value - what does the company do now and in the future?; People - for whom and who does it?; and Results - Why? - How does a company define and measure its success? (Broeck, 2017; Elkington & Upward, 2016).

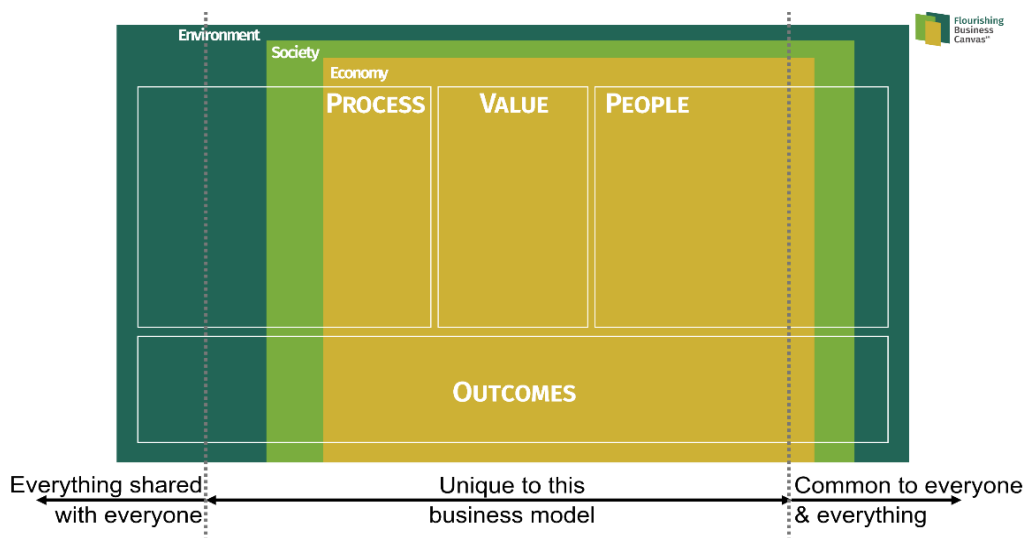
Figure 4 - Four perspectives of a business model



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Similar to the construction presented in the Business Model Canvas, where the blocks are divided into two large areas (business efficiency on the left and values on the right of the screen), in FBC there is a division of the sixteen blocks into three systematically related environments (Figure 5): on the left of the screen are the blocks that are shared via the natural environment, in the middle what is exclusive and specific to the conventional business model, and on the right what companies and organizations have in common with the rest of the environment, society and economy.

Figure 5 - Systemic relationship between the FBC blocks



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The complete screen of the FBC (Figure 6) is composed of its sixteen blocks distributed among the three layers (environmental, social and economic) and four perspectives (process, value, people and results). The authors incorporated all these layers and their relationships into a single canvas, applying the company's economic, social and environmental sustainability strategy in a clear and schematic way.

In this way, blocks such as Resources, Activities and Costs, for example, are no longer exclusively integrated to the economic layer, but also included in the environmental and social aspects, which is one of the main improvements in relation to the Business Model Canvas by Osterwalder and Pigneur (2010).

Figure 6 - The Flourishing Business Canvas



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The sixteen FBC questions are allocated by visual position, and each block is interrelated with the combinations needed within each context and grouped into each of the four perspectives (Elkington & Upward, 2016). These sixteen questions are presented as follows on the FBC screen:

(01) Goals: What goals does the company want to achieve? Considering environmental, social and economic aspects?

(02) Benefits: How does the company choose to measure the benefits resulting from its business model? Each in relevant units? (environmentally, socially and economically)

(03) Costs: How does the company choose to measure the costs of the business model? Each in lifting units? (environmentally, socially and economically).

(04) Ecosystem Actors: Who and what might actually have an interest in this company existing? Which ecosystem actors represent the needs of individuals, groups, organizations or non-humans?

(05) Needs: What fundamental needs of the actors in the ecosystem is this business model intended to satisfy or can it hinder?

(06) Shareholders: How is each actor in the ecosystem in this business? What are the roles of each actor in the ecosystem? Examples: customer, employee, investor, owner, supplier, community and regulator.

(07) Relationships: What relationships with stakeholders should be established, cultivated and maintained by this business through its channels? What is the role of each relationship in each co-creation or co-destruction of value relevant to each stakeholder?

(08) Channels: What channels will this business use to communicate and develop relationships with stakeholders (and vice versa)?

(09) Value co-creations: What are the (positive) value propositions of this business? What value is co-created for each stakeholder by satisfying the needs of the associated ecosystem actors, in their current and future perspectives (world view)?

(10) Value Destruction: What are the (negative) value propositions of this business? What value is co-destroyed for each stakeholder, making it difficult to satisfy the needs of the associated ecosystem actor in their current and future perspectives (world view)?

(11) Governance: Who are the stakeholders that can make legitimate decisions about the objectives of this business, its value propositions and its processes?

(12) Partnerships: Which stakeholders are formal partners in this business? What resources do these partners allow this business to have preferential access to? What activities do these partners perform for this business?

(13) Resources: What tangible and intangible resources are required by the company's activities to achieve its objectives?

(14) Biophysical stock: What stocks and natural resources does the company use, transform or need to fulfill its objectives?



(15) Activities: What value-added work, organized into business processes, is required to design, deliver, and maintain the organization's co-creation and co-destruction of value to achieve business objectives.

(16) Ecosystem services: Ecosystem services are sun-powered processes that use biophysical stocks to create streams of benefits that humans need: clean water, fresh air, vibrant soil, plant and animal growth, etc. Which streams of these benefits are needed, impaired, or improved by the company's activities?

The answers to these sixteen questions help to describe and design all elements of any business model and for any type of organization, regardless of the defined objective, they are questions with commands accessible to stakeholders and consider the collective understanding (Elkington & Upward, 2016).

The authors also state that these block-shaped questions can be asked to the stakeholders of companies or organizations about what the desired business model is now and for the future. Such questions help make complex and sophisticated knowledge of principles intuitive and more easily accessible during the business modeling process task (Upward & Davies, 2019). Through these questions, the FBC screen invites stakeholders to reflect on their business model, recognizing possibilities and opportunities for improvement in the three contexts of sustainability (Broeck, 2017).

## 2.5 SIMILAR EXPERIENCES IN BRAZIL AND THE WORLD

In a bibliographic research on similar experiences at the national and international level on the FBC, no studies were found where the FBC tool was applied in startup companies. The studies found are generally associated with the conceptualization of the FBC and its application in established companies and organizations. In this chapter of the work, a summary of the publications found at national and international level on the use of the tool is presented. It is noteworthy that this research took place in a phase prior to the elaboration of this dissertation, in a systematic review of the state of the art of the FBC (Pellin & Lago, 2021). The searches were carried out following the steps described at the beginning of chapter 2, and after searches in national and international journals and indexing databases, a total of 95 works among articles were obtained,

After reading the abstracts, methodology and conclusions of each work and excluding duplicates, only those that addressed the FBC tool in some way, conceptualizing it or

applying it at some point in the work, were chosen as eligible for further analysis. Studies where the tool was just mentioned, without an approach or conceptualization were disregarded. Thus, 16 valid works remained, being 6 articles, 2 book chapters and 8 dissertations.

The list of these works is presented in chronological order in Table 5, and they are detailed below:

Table 5 - List of works about the FBC

Authors	Title	Type	Publication's origin
(Elkington & Upward, 2016)	<i>Leadership as enabling function for flourishing by design.</i>	Article	<i>Journal of Global Responsibility.</i>
(Karlsson et al., 2016)	<i>Early phases of the business model innovation process for sustainability: Addressing the status quo of a Swedish biogas-producing farm cooperative.</i>	Article	<i>Journal of Cleaner Production.</i>
(Broeck, 2017)	<i>The Flourishing Business Canvas; the New Tool for Business Modelling? A Multiple Case Study in the Fashion Industry.</i>	Dissertation	<i>University of Borås, Faculty of Textiles, Engineering and Business. Sweden.</i>
(Echeverría, 2017)	<i>Evaluación del negócio Fazenda da Toca, São Paulo, Brasil, como base para la creación de un modelo de negócio inclusivo.</i>	Dissertation	<i>Centro Agronómico Tropical de Investigación y Enseñanza (CATIE) - Costa Rica.</i>
(Sonowal, 2017)	<i>Hospital as a Business for Flourishing.</i>	Dissertation	<i>OCAD University - Toronto – Canada.</i>
(Dahou, 2018)	<i>How can enterprise modelling help in analyzing the sustainability impact of blockchain on business and operating models?</i>	Dissertation	<i>Faculteit Economie en Bedrijfskunde. Universiteit Gent, Belgium.</i>
(Hope, 2018)	<i>Sustainable Business Model Design: A Review of Tools for Developing Responsible Business Models.</i>	Book chapter	<i>Springer - Sustainable Business Models.</i>
(Hoveskog et al., 2018)	<i>Education for Sustainable Development: Business modelling for flourishing.</i>	Article	<i>Journal of Cleaner Production.</i>
(Robson & Pinto, 2018)	Planejamento estratégico sustentável utilizando a ferramenta flourishing business canvas.	Article	Encontro Internacional sobre Gestão Empresarial e Meio Ambiente – FEAUSP.
(Amaliah et al., 2019)	Sustainability Analysis of KPBS Pangalengan Milk Processing Business Unit Using Flourishing Business Canvas Method.	Article	Jurnal Management Dan Agribisnis, (JMA) – Indonesia.
(Jiménez Herráez, 2019)	El Campus de Investigación Tecnológica Mobility2Grid: Análisis de los actores involucrados en el proceso de innovación sostenible.	Dissertation	Universidad Pontificia Comillas. Madrid, Espanha.

Continuation Table 5

(Norris, 2019)	Flourishing Trim tabs - Designing business models that catalyze strongly sustainable enterprises: An exploration of Design variety using tools for collaborative modelling modes.	Dissertation	OCAD University - Toronto – Canada.
(Mathues, 2019)	Tools for Sustainable Business Model development: a comparative case study on a non-profit organization.	Dissertation	Louvain School of Management. Belgium.
(Upward & Davies, 2019)	Strategy Design for Flourishing: A Robust Method.	Book chapter	Springer – Rethinking Strategic Management.
(Ostuzzi & Hoveskog, 2020)	Education for flourishing: an illustration of boundary object use, peer feedback and distance learning.	Article	International Journal of Sustainability in Higher Education.
(Zagel & Tarhonskyi, 2020)	How do German industrial leaders evolve their business model towards sustainability- A case study of Adidas AG and Siemens AG Economics with a major in Business.	Dissertation	Halmstad University. Sweden.

Source: survey data (2021).

One of the first studies to approach and conceptualize the FBC tool in greater detail was the one presented in the work of Elkington and Upward (2016). The aforementioned work aimed to approach leadership and leadership development, suggesting an alternative mindset and set of skills, discussing the urgent need to frame sustainability and specifically the role of leadership in the design of organizations with potential beyond the generators of sustainability, but also for the potential to flourish for everyone in the organization. As a tool to support and enable leadership for flourishing, the authors present the FBC, conceptualizing the tool in detail, presenting its perspectives and definitions, as well as the sufficient and necessary questions to ask at the time of its application, according to each tool block. They emphasize that there is still a small number of organizations that use design tools such as the FBC for the flourishing of sustainability in their context.

Another important work that helps to conceptualize the FBC tool, presenting and describing its functionalities in detail is the work developed in Broeck's master's dissertation (2017). In this research, Broeck studies the potential of the FBC tool through a case study, carrying out this study with three fashion industries located in Sweden. By applying the tool with the use of secondary data, through annual reports, sustainability reports and companies' home pages, it was concluded that the FBC can be an important tool for companies and fashion industries to demonstrate their economic, environmental and social sustainability. at a strategic and schematic level. One of the study limitations presented by the author is that although the results were positive,

A study prepared by Karlsson, Hoveskog, Halila and Mattsson (2016) and also developed in Sweden, aimed to carry out an action research approach proposing solutions to the financial difficulties of an agricultural cooperative producing biogas in the south of the country. It describes two workshops using the FBC as a tool to explore the initial stages of the innovation process through the business model for sustainability. This study involved the participation of researchers, cooperative members, university students and external consultants. As a result, the authors claim that when using the tool, there was a facilitation of collaborative work between all the actors involved, which supported the generation of ideas and the creation of prototypes of sustainable business models, expanding the possibilities of including social, environmental and economic values in the models, corroborating the study by (Upward & Jones, 2016). They suggest as possibilities for future research, the application of this model at network levels, other industrial contexts and with other companies and stakeholders.

Another work was carried out with a pedagogical approach on raising awareness and reflection on sustainable business modeling. Elaborated by Hoveskog, Halila, Mattsson, Upward and Karlsson (2018) and also carried out in a Swedish biogas production cooperative, this study describes an experimental workshop carried out with 40 undergraduate university students where FBC is used as a tool for modeling Collaborative visual of business models. The results of the work conclude that education for flourishing is a useful expansion for sustainable development and that the use of the FBC tool helps those involved to engage in sustainable business model innovation. They argue that the FBC is a transdisciplinary tool that requires a pedagogical approach.

Sonowal (2017) applied FBC in a co-creative workshop held at North York General Hospital (NYGH) in Toronto, Canada. This workshop aimed to test this and other similar tools in order to design a process and method that could represent conditions and elements to thrive in a health system environment, using primary data collected via interviews and by workshop. The results presented indicated that sustainable factors can affect the decision-making process and health planning model projects, factors that according to the author have never been taken into account before in other business model projects. However, the study reports some difficulties when applying the tool, including the participants difficulty in dealing with some FBC terms, that, because they were participants from hospital areas, they were not familiar with some of the jargon covered in the tool. Thus, the author recommends adapting the FBC to the particularities of hospital business, modifying the process in health design research.

The use of the FBC tool applied again in the health area was the result of the work of Dahou (2018), where the objective was to evaluate the sustainability impact that blockchain technology will have in the health sector, using for this evaluation some business modeling techniques, including the FBC. The results obtained show that the FBC was able to provide valuable information on how technology influences the different actors involved, on how this relationship between actors is changed and how new values are created, information that in other business modeling techniques were not possible. according to the author, being therefore a successful tool to represent and evaluate the dimensions of sustainability in business models, like the limitation presented by (Broeck, 2017).

Another approach using the FBC, in which concepts and approaches to the tool are presented, was developed by Upward and Davies (2019). In this paper the authors present a thriving business strategy design method as a robust procedure for leaders to create effective business strategies and improve their financial, environmental and social performance. This burgeoning business design method provides leaders through the use of FBC with a clear, science-based approach to co-strategize the next generation of effective, future-proof companies in an increasingly volatile, uncertain, complex and ambiguous world (VUCA - Volatility, Uncertainty, Complexity and Ambiguity).

To create a sustainable strategic planning model, Robson and Pinto (2018) use FBC in their study. In the development of their work, the authors conceptualize the tool and its functionalities. According to the authors, a strategic planning model must address the adoption of sustainable practices at all levels of the organization, as well as measure its degree of sustainability and contribute in a strategic and sustainable way to society and its stakeholders. Thus, they consider the use of the FBC to be an important instrument to analyze and implement this strategic planning for companies that seek corporate sustainability. They suggest for future studies the use of the FBC tool in case studies.

Other studies found used the FBC as a tool for business model analysis, such as the one by Echeverría (2017), which aimed to systematize the experience of a company in the organic products chain, and describes the business model of a farm in the state of São Paulo in Brazil using the FBC.

The work by Jiménez Herráez (2019) using the FBC, analyzes the business model of a research field (M2G - Mobility2Grid) in Berlin, Germany. Finally, Amaliah, Najib and Jahroh (2019) analyze the aspects of sustainability with the use of FBC in a cooperative producing dairy products in Pangalengan, Indonesia. In these works, the authors apply the tool as part of

their studies, investigating and mapping sustainability factors and co-creation of values in the organizations studied.

Other works found in the searches present analyzes and comparisons between tools used for business modeling aimed at sustainability using the FBC. A study like the one by Mathues (2019) compared three tools for developing business models focused on sustainability in a non-profit organization. The tools tested were the Sustainable Business Canvas, Flourishing Business Canvas and Value Mapping Tool. As a result, the FBC was the tool that presented the most valuable approach to the organization.

The work prepared by Hope (2018) discusses the design of sustainable business models and reviews tools designed to integrate sustainability principles into the strategic planning of organizations, including the FBC. According to the author, such tools can be useful in the design of sustainable and responsible business models, representing an important initial step in the process of sustainable and responsible development that creates value for business and society in general.

In Norris' (2019) research, the objective was to examine the design and development of a dialogic design tool based on the FBC. Through a collaboration between Halmstad University in Sweden and Ghent University in Belgium, workshops were held with 43 Master's students of Industrial Design Engineering at UGhent and with another 40 participants among Halmstad University students, professors and external representatives. The aim of the workshops was to test different altered prototypes of the tool, promoting suggestions for improvements in the graphic design of the user interface.

In this same workshop held at the universities of Ghent in Belgium and Halmstad in Sweden, Ostuzzi and Hoveskog (2020) developed a study with the objective of increasing the understanding of a particular innovation framework for business models that is used as a boundary object in the context of interdisciplinary distance education, achieving a deeper understanding of how students engage with the concept of sustainable business modeling when using FBC. By applying the experiment to 52 engineering students from the two universities, a better understanding of the usability and accessibility of the FBC format was obtained. The results show that students had ease in building some blocks of the FBC and difficulties in understanding and usability in others.

Finally, the study by Zagel and Tarhonskyi (2020) applies the FBC for the first time in a case study of multinational companies in Germany. The objective was to show a holistic view of how companies evolve their business model towards economic, environmental and social sustainability and for this purpose they used the FBC as they consider it a tool with an

easy and in-depth approach. By applying the tool, the authors were able to map the companies' sustainability approaches, consolidating the FBC as an important and adequate tool for visualizing sustainability-oriented business models. As a complement to the results found in the studies, Table 6 presents a summary with the main objective, method used in the research and the main results of the studies when using the FBC tool.

Table 6 - Summary of the application of the FBC in the studies found

Authors	Main objective	Method approach /	Main results with the application of FBC
(Elkington & Upward, 2016)	Alerts to the need to address organizational leadership coupled with sustainability.	Conceptual research.	They use the FBC as a tool to support organizational leadership that allows everyone to flourish through sustainable actions.
(Karlsson et al., 2016)	Proposes solutions to the financial difficulties of an agricultural cooperative producing biogas in southern Sweden using FBC as an analysis tool.	Action research.	The results show that the FBC proved to be a practical and efficient tool in generating ideas and creating prototypes of sustainable business models.
(Broeck, 2017)	It studies the potential of the FBC tool applied to fashion industries in Sweden.	Case study with secondary data.	It concluded that the FBC can be an important tool for fashion companies and industries to demonstrate their economic, environmental, and social sustainability at a strategic level and in a schematic way
(Echeverría, 2017)	To systematize the experience of a company in the organic chain on a farm in the state of São Paulo in Brazil.	Qualitative through action research.	As part of the study's objectives, he applied the FBC to demonstrate the farm's business model, succeeding in elaborating it with the help of the tool.
(Sonowal, 2017)	To test tools for designing a process to thrive in healthcare environments, carried out at North York General Hospital (NYGH) in Toronto in Canada.	Action research.	With the help of applying the FBC, it was concluded that sustainable factors can affect the decision-making process and projects of health planning models.
(Dahou, 2018)	Evaluate the sustainability impact that blockchain technology will have on the healthcare sector, using for this evaluation some business modeling techniques, among them FBC.	Case study.	The results showed that the FBC was able to help capture valuable information when representing and assessing sustainability dimensions in business models.
(Hope, 2018)	Identify and review some of the key tools available for companies to use in developing new sustainable business models.	Systematic literature review.	It highlights that sustainability-focused tools, including the FBC, can be useful in designing sustainable and responsible business models.

Continuation Table 6

(Hoveskog et al., 2018)	Describe a pedagogical approach to raising awareness and reflection on sustainable business modeling.	Action research.	Concludes that flourishing education can raise awareness and reflection for sustainable development and that using the FBC tool can assist in this.
(Robson & Pinto, 2018)	Use the FBC as a tool for strategic planning.	Bibliographic research with qualitative approach.	Presented that the FBC can be an important tool for the application of strategic planning and for the implementation of sustainable business models.
(Amaliah et al., 2019)	Analyze the sustainability aspects in a dairy product cooperative in Pangalengan in Indonesia.	Case study.	With the application of the FBC it was possible to establish and analyze the cooperative's sustainability in an efficient way.
(Jiménez Herráez, 2019)	To conduct a business model study of a research camp called (M2G - Mobility2Grid) in Berlin, Germany, to understand the roles of the actors involved in the value creation process.	Case study.	They successfully used the FBC tool to analyze the business model of this research field.
(Norris, 2019)	Examine the design and development of a dialogic design tool based on FBC.	Case study.	Different altered prototypes of the FBC tool were tested, promoting suggestions for user interface graphic design improvements.
(Mathues, 2019)	Compare tools for the development of sustainability-oriented business models.	Case study.	The results presented show that of the three tools tested (Sustainable Business Canvas, Flourishing Business Canvas, and Value Mapping Tool) the FBC was the most effective.
(Upward & Davies, 2019)	Present a sustainable business strategy design method.	Conceptual research.	They conceptualize and use FBC as a robust procedure that helps leaders craft effective business strategies in their financial, environmental, and social performance.
(Ostuzzi & Hoveskog, 2020)	Increase understanding of business model innovation for sustainability.	Case study.	In trying to achieve a deeper understanding of how students engage with the complex concept of sustainable business modeling, FBC proved to be an essential tool for this purpose.
(Zagel & Tarhonskyi, 2020)	Show a holistic view of how companies evolve their business model towards economic, environmental and social sustainability.	Case study.	By applying FBC in German multinationals, FBC proved to be an important and adequate tool to visualize sustainability-oriented business models.

Source: own authorship (2021).



It is notable the small amount of work developed in recent years, addressing the FBC tool. However, the scarcity of studies on the FBC tool may be related to its recent creation, and the fact that the tool is in a constant phase of research and evolution with the help of a community of professionals and academics through the Flourishing Enterprise Toolkit network (Flourishing Enterprise Innovation. Tools for the Strongly Sustainable Revolution – Socially Beneficial, Environmentally Regenerative and Financially Viable, 2021).

As shown, the initial studies sought to conceptualize the tool, while in other studies, the applicability and efficiency of the tool was tested by case studies. It is noticed, however, that in most studies there is a common factor related to awareness, reflection and learning about business modeling focused on sustainable aspects with the use of FBC as a central tool for this purpose.

### 3 RESEARCH METHOD AND TECHNIQUES

In this section, the methodological procedures adopted to outline and develop the proposal of this research are presented and described. The section begins with the presentation of the research methodology phases, followed by the study design followed by the presentation of the procedures adopted for data collection and analysis. Also in this section, the professional competences used to solve the problem of this study are presented, ending with the limitations of research methods and techniques.

#### 3.1 RESEARCH METHODOLOGY PHASES

To achieve the objectives proposed by this study, research was carried out with a two-phase approach. It began with the identification of a problem-situation observed in the development of business models by startups, and still in the first phase, primarily based on the observation of this phenomenon, scientific content was sought in the literature to help solve this problem-situation, enabling this. Thus, to identify the structural elements necessary to propose the accomplishment of the second phase of the research with the approach of the research-action.

##### 3.1.1 Action Research

In the second phase of the research, the action research procedure was chosen, due to the exploratory and investigative nature of the study. With the adoption of this methodology, we sought to understand the phenomenon inserted in startups, that is, the sustainable business modeling tool evaluated in a realistic scenario. Furthermore, it is expected that the participants show self-reflection on the topic when having direct contact with the phenomenon studied.

The choice of action research procedure is still justified, because, according to Thiollent (1998) this type of study represents an empirical investigation that analyzes the contemporary phenomenon within its context, that is, it is focused on a concrete situation with the objective of solving a problem effectively detected with the participation of researchers and those involved.

Action research takes place when there is a collective interest in solving a problem or need, not only focusing on data collection, but on the practical resolution of a situation or observed facts (Prodanov & Freitas, 2013). It is a procedure that necessarily requires theoretical and practical actions in research, with interventionist and participatory actions by all those involved (Tripp, 2005). Therefore, based on the authors' considerations, it is understood that, given the objectives proposed for this study, the action research methodology is characterized as the most appropriate for this work.

Thiollent (1998) proposes to divide the action research process into four main stages: exploratory stage, planning stage, action stage and evaluation stage. Thus, this division was adopted to carry out the action research phase of the present study.

For the exploratory stage of action research, a study of potential startups that could participate in the study was carried out. In this sense, we looked for startups that were at different levels of development maturity at the time of application of the study. Therefore, it was decided to select two newly founded startups at the time of this study and two others with a longer period of activity. At this stage, it was also diagnosed and defined what would be the considered business model of these startups, being selected two companies with their business model explicitly focused on sustainability and the other two with business models not defined.

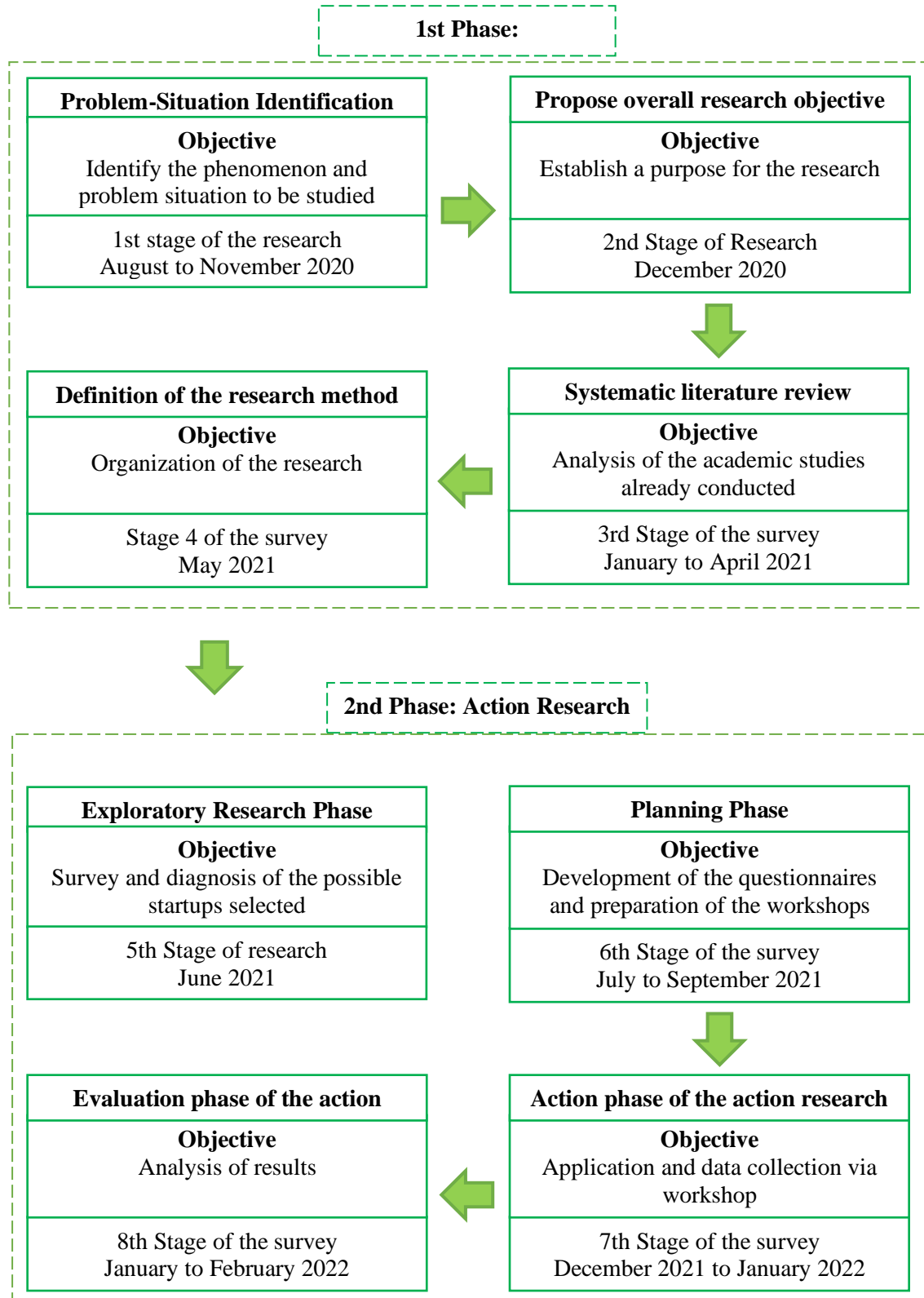
In the stage planning the action research preparations were made for the development of the workshops. Occurred between July and September 2021, several procedures were adopted for the effective application of the study: a) Invitation and scheduling of dates for the application of workshops with startups; b) development of visual support materials for the workshops, such as the translation and printing of the FBC screen; c) elaboration of questionnaires for data collection; d) elaboration of the supporting visual presentation, with slides on the case study to be applied as an example in the workshops.

During the phase of action of action research, the application of the tool and the collection of study data took place. This phase took place between December 2021 and January 2022, with the development of the workshops, and had the active participation of the researcher acting as a facilitator. In addition to the questionnaire applied at the end of each workshop, it was during the application phase of the workshops that, through the researcher's direct observation, important notes on the participants perceptions were recorded.

The last stage of the action research, the evaluation phase, took place between January and February 2022. In this stage the data collected via the researcher's notes and the applied questionnaire were analyzed.

In Figure 7, the method of this research is briefly presented with the procedures adopted in each of the two phases of the study.

Figure 7 - Phases of the study methodology



Source: own authorship (2021).

### 3.2 RESEARCH DESIGN

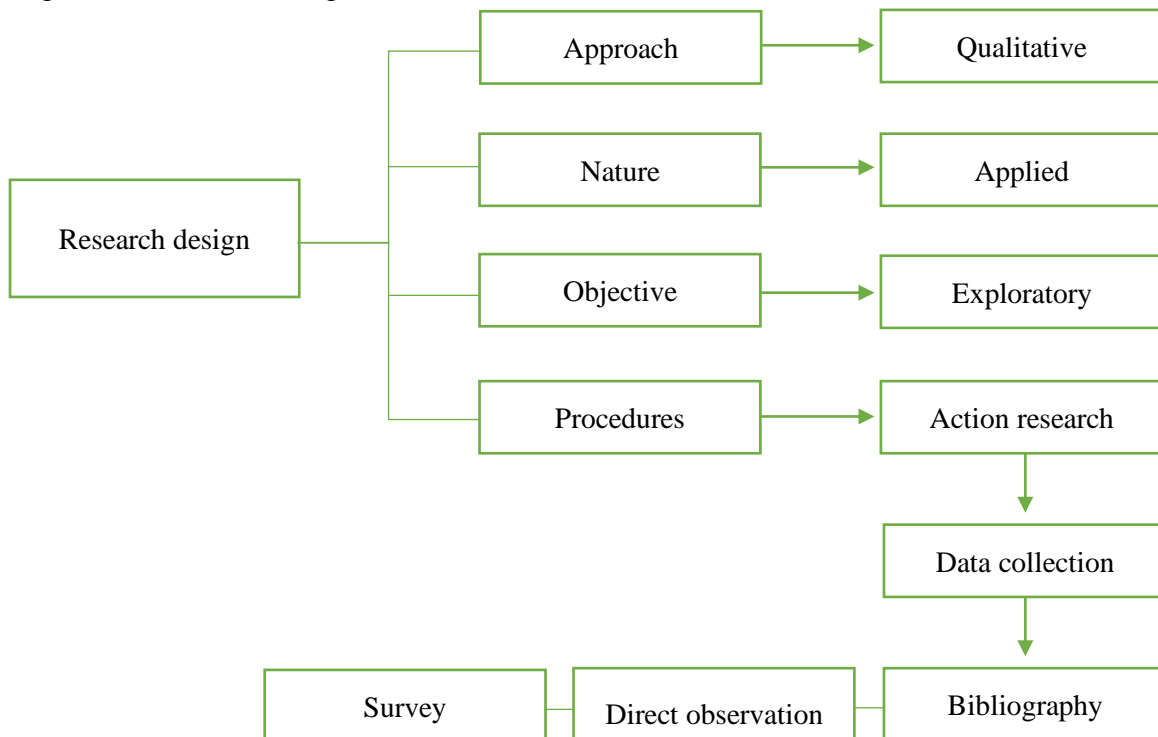
Regarding the approach to the problem, this study is classified as qualitative. In this type of approach, the aim is to describe and understand a particular phenomenon whose data cannot be statistically measured (Prodanov & Freitas, 2013). Bardin (2016) also states that the qualitative approach corresponds to a more flexible, intuitive and adaptable procedure to unforeseen indices. Thus, since this study seeks to expand the understanding of business models focused on sustainability in startups, this approach is considered the most appropriate.

From the point of view of its objective, the research is classified as exploratory. This type of exploratory research aims to provide a greater view in order to provide a proximity to the problem studied, involving the bibliographic survey and practical experiences with the researched problem (Silva & Menezes, 2005) being carried out in this study through the systematic analysis of the literature and with the realization of action research when applying and screen of the FBC in workshops for startups.

This study is classified from the point of view of its scientific method as of applied nature, because it aims to provide knowledge for practical application directed to a specific problem (Prodanov & Freitas, 2013). Also, according to Marconi and Lakatos (2016) this type of research seeks to discuss problems inserted in people's daily lives, and the knowledge acquired can be used to solve these problems, and that in this study is based on understanding the usefulness of the FBC as a valid and efficient tool for the modeling of sustainable business by startups .

As for the technical procedures, this research adopted the action research technique with data collection using literature review, systematic direct observation and survey via questionnaire. Thus, the complete design used in the present study is illustrated in Figure 8:

Figure 8 - Research design



Source: own authorship (2021).

Data collection and analysis procedures are presented in more detail in the next section of this chapter.

### 3.3 DATA COLLECTION AND ANALYSIS PROCEDURES

Regarding the data collection procedures, a set of instruments was used in order to record the facts and understand the phenomenon object of this study, including the bibliographic survey, together with the collection of empirical data carried out with direct observation and survey via questionnaire with open and closed questions. It is understood that the adoption of several sets of data collection is the most appropriate when carrying out the application of the tool with those involved, capturing their perceptions during the workshops for the application of the tool.

Thus, initially the procedures of data collection by bibliographic review described in the second chapter of this study were used. It was through this systematic review of articles, books, doctoral thesis, and dissertations as well as other relevant materials that the necessary

theoretical basis of the concepts found in the literature on FBC was obtained for later application in action research in startups.

Empirical data collection took place via direct observation during the application of the FBC in the presentation and application workshops of the tool with startups that were willing to participate in this study, therefore, using a convenience sample.

Four startups were defined for the development of the workshops. The choice of participants considered different aspects of the maturity levels of the company's development, and in different areas of activity in the market. Of the four startups chosen by convenience for the study, two are residents of the incubation process of the Federal Technological University of Paraná – UTFPR, in the initial stage of activities and with the newly developed business model. Data collection with these two startups took place simultaneously in a workshop held in December 2021, lasting approximately 3:40 hours.

The other two startups are at a more advanced level, with defined business models and are not currently participating in an incubation or acceleration process. Data collection for these two took place in December 2021 and January 2022, respectively, and both workshops had an average duration of 3 hours each.

It was during the application of the tool that the systematic direct observation procedure was adopted, conceptualized by Lakatos and Marconi (2003) as an observation of facts performed under controlled conditions to respond to pre-established purposes, and that in this case, the purpose previously determined was the observation of the understanding and usability of the tool in practice. For this purpose, notes were taken on which points the participants had the most difficulty in understanding the usability of the screen, as well as notes on the oral feedback received by the participants during and after the completion of the application of the screen.

Therefore, based on the concepts previously raised in the literature combined with oral feedbacks during and after completing the screen, it was possible with this part of the data collection to obtain a perception of the real understanding of those involved about the applicability and usefulness of the tool, being duly documented for further data analysis.

At the conclusion of the application of the tool, with the objective of complementing the data collection for future analysis and giving greater robustness to the research, the third method of data collection of the study, carried out via a semi-structured questionnaire (Appendix A) was addressed. At this time, participants from each startup were invited to answer an assessment anonymously with open and closed questions related to the following items:

a) understanding of the concept of the tool, that is, if those involved understand the real meaning of applying the FBC in the organization; b) about the usability of the FBC, its screens, ease of use and understanding of the blocks of questions; c) evaluation of the workshop: expectations, usefulness of the tool, impact on the organization and suggestions.

The data collection via direct observation and applied questionnaires were inherent to the application of the workshops. Thus, by the action research technical procedure adopted, these collections were also part of the action.

A summary of the data collection and analysis procedures used to meet each of the specific objectives is presented in Table 7:

Table 7 - Procedures to meet the specific objectives of the study

Specific objectives	Data collection and analysis procedure to meet the objectives.
To introduce and apply the Flourishing Business Canvas tool with startups through workshops.	Bibliographic survey. Workshop about the tool. Systematic direct observation.
To evaluate the perception of workshop participants in the use of the Flourishing Business Canvas	Workshop about the tool. Systematic direct observation.
Validate the tool after the workshops with the startups.	Questionnaire survey. Oral feedbacks from the workshop participants. Systematic direct observation. Analysis of the questionnaires.
Propose improvements to make it adequate to the context of the startups.	Survey via questionnaire. Oral feedbacks from the workshop participants. Systematic direct observation. Analysis of the questionnaires.

Source: own authorship (2021)

With the set of proposed data collections, it was possible to obtain the necessary subsidies to understand the effectiveness and applicability of the tool, proposing possible improvements as foreseen in the specific objectives of this study, as well as the validation of the FBC as an efficient tool for sustainable business modeling.

### 3.4 PROFESSIONAL SKILLS USED IN PROBLEM SOLUTION

The researcher who wrote this paper has a close connection with the subject of this study, and this was a motivational factor of great importance for this work. He works at the time of the development of this research, as Coordinator of the Entrepreneurship and Innovation Program of a Federal Public University located in the West of Paraná.



Additionally, he is the manager of a startup incubator and accelerator belonging to the same university.

Therefore, he experiences daily the difficulties faced in the development of business models by these nascent companies or in a more advanced stage of maturity in the course of four years at the head of this incubator. In this way, with the skills acquired during this period, and with the on-site observation of these companies, combined with the continuous search for tools and processes to improve these businesses, it can more effectively understand their needs, behaviors, concepts and terms used by companies and involved in these environments of innovation and entrepreneurship.

Regarding the FBC tool, the author is a member of the global study group Flourishing Enterprise Innovation Toolkit(Flourishing Enterprise Innovation. Tools for the Strongly Sustainable Revolution – Socially Beneficial, Environmentally Regenerative and Financially Viable, 2021)acting as First Explorer of the tool in the country. This group is an initiative of the Strongly Sustainable Business Model Group (SSBMG) an innovation practice community and is part of a knowledge mobilization and research initiative of the Strategic Innovation Laboratory of the OCAD University (The Ontario College of Art & Design University) of Toronto, Canada's largest design school. Currently, the group has the most varied actors, including professors, entrepreneurs, and researchers, working together to produce a concrete vision that helps all companies to prosper with new definitions of success that integrate social, environmental and economic factors into their businesses.

As a member of the group, the author is authorized for studies, commercial and non-commercial application of the development version of the Flourishing Enterprise Innovation Toolkit (Toolkit), including the Flourishing Business Canvas, object of this study. Additionally, by participating in the First Explorers community group hosted by Google Group, you have access to recent FBC continuous improvement work, discussions and updates about the tool, as well as access to new studies underway worldwide.

### 3.5 LIMITATIONS OF RESEARCH METHODS AND TECHNIQUES

The main limitation of this study is related to the practical application of the tool in the workshops. Of the published studies, none described in detail a step-by-step application of the tool. Although the concept of the tool is very clear to this researcher, a study in more detail would be convenient. However, this limitation can be minimized, because by being part of the

Flourishing Enterprise Innovation Toolkit research group, the author has direct contact with the creator of the tool and other explorers, thus being able to solve specific doubts regarding the application in practice. of the FBC.

However, it is understood that even with this advice from the creator of the tool, there may still be difficulties in the application, as it is the first time that the author of this study develops the activity. In any case, if they occur, such difficulties will be presented as perceptions and proposals for improvements to the application of the tool, as provided for in the specific objectives of the study.

Other the limitation is related to the adoption of action research for the development of this work. This type of research requires more time to carry out all the methodological steps, which requires the availability of both the researcher and those involved in the research in the practical part. Obtaining data in this method is largely through the practice of the process, scheduled for phase 2 of this study, and which inevitably requires the participation and availability of those involved.

Finally, another understanding that limits the technique used in this study is related to data analysis. Even though a double analysis and interpretation of the data obtained was chosen (via direct observation and survey via questionnaire), the analysis of these contents by the researcher is not totally neutral in inferring its understanding of the different phases of the analysis. Mozzato and Grzybovski (2011) state that this inference is not totally neutral, however it should be as minimal as possible in terms of the personality of the analysis, not depriving the researcher of criticism and analysis inferences that qualitative research normally requires.

## 4 ANALYSIS AND INTERPRETATION OF RESULTS

In this section, the information observed and collected through the application of the tool during and after the workshops is presented and analyzed. First, the participating startups are briefly characterized. Then, as determined in the specific objectives of this study, the results are presented divided into the introduction and presentation parts of the tool, followed by the practical application of the tool and its evaluation resulting from the direct observation of the researcher. Subsequently, in the tool validation item, some results observed in the workshop are resumed, especially those obtained with the applied questionnaires. Finally, suggestions for improving the tool are presented based on the data collected and learned from the workshops.

### 4.1 CHARACTERIZATION OF THE STARTUPS PARTICIPATING IN THE STUDY

Participating in the business incubation process at Federal Technological University of Paraná - UTFPR, and identified in this study as Startup A, the first startup to participate in this study started its activities in 2021. It is a company focused on the development and commercialization of cosmetics based on vegan ingredients. It uses natural resources as raw materials with environmental responsibility in all the processes involved, from production to commercialization of its products. In addition, it is a “cruelty-free” company, not using products of animal origin in the development of its products, a company that was born with sustainable responsibility. It is the youngest startup of the participants of this study, being recently admitted to the university's business incubation process, and is in the process of improving its processes and business model. Two Biotechnology and Bioprocesses engineers and a Chemical Engineer, the three founding partners of the company, participated in the workshop.

The second startup to participate in the study, identified as Startup B, also participates in the UTFPR incubation process. Founded in 2020, it works in the elaboration and incorporation of new technologies in civil construction, developing new products and materials that add greater productivity, collaborating to increase the efficiency of works and construction projects. It has been incubated for two years and has its business model partially defined, still validating some potential products on the market. The entire startup team, a Civil

Engineer, two Civil Engineers who are the company's owners and three employees responsible for the company's administrative demands participated in the workshop.

Identified as Startup C, the third startup participating in the study, is based in West Paraná. Founded in 2017, it operates in the agribusiness market, developing solutions for precision agriculture, such as Big Data, IOT applied to agriculture 4.0. With its well-defined business model, it aims to apply new technologies in the field to increase productivity with the efficiency of economic and environmental resources. Four employees from the areas of management and product development participated in the workshop, in addition to its founding partners, two Electrical Engineers.

The last startup to participate in the workshop, identified as Startup D, also has its headquarters in the West of Paraná. Founded in 2016, it operates in the process of transforming recyclable materials into new products for use in civil construction. Also with a consolidated business model, it has focused on sustainability since its creation. With patented technology, it transforms civil construction waste into new products of high durability and resistance so that they can be reused, thus collaborating with environmental sustainability. The team participating in the workshop was composed of a Chemical Engineer, a Chemist, a Civil Engineer and a Civil Engineer, all founding partners of the company, and in addition to these, two employees occupying the positions of sales manager and production manager.

## 4.2 TOOL INTRODUCTION AND PRESENTATION

The introduction of the FBC tool to the workshop participants took place in a standardized way at all meetings. In all, three workshops were held, with an average duration of 3 hours each. The first workshop took place in December 2021, held together with startups A and B residing at the University's business incubator. The other workshops were held separately with the remaining startups, Startup C and Startup D in December 2021 and January 2022, respectively.

The Flourishing Business Canvas was new to the participants, so a detailed introduction to the tool before its actual application was necessary. With the support of a slide show, the screen was introduced and each block and layers was explained in detail, complemented by a presentation of a case study as an example for filling the screen. The materials used to present the FBC and the case study were extracted from the literature and from the official Flourishing Enterprise YouTube channel, where the creator of the tool

Antony Upward exemplifies the filling of the screen in greater detail (Flourishing Enterprise, 2021).

In this phase of presentation of the tool, the main situation observed was the comparison of the tool with other existing ones. As they are startups, it is natural that they have participated in other business modeling workshops, and, as usually happens, they are carried out with the application of tools such as the Business Model Canvas (BMC) by Osterwalder and Pigneur (2010) or even Lean Maurya's Canvas (2014). Comparisons are inevitable, even because the FBC is inspired by the Business Model Canvas (Elkington & Upward, 2016), which generated, during the presentation, constant comparisons, such as, for example, the nomenclature of the BMC blocks with that of the FBC, arrangement of blocks on the screen and layout.

This phase of the workshop was considered productive. The participants asked questions and resolved some initial doubts during the presentation of the case study used as an example to fill in the screen. It is understood that this initial approach of conceptualization and practical presentation of the tool has been fundamental for the development of the following phases of the study, as it provided the participants with an overview of the tool hitherto unknown.

#### 4.3 TOOL APPLICATION

After the introduction of the tool, and with the researcher author of this study as facilitator of the workshop, the application and completion of the FBC began. Participants from each startup were invited to describe their business model taking into account social, economic and environmental aspects, from the point of view of a current perspective of the company or outlining a possible future business model.

Each block was filled by posting sticky notes on a FBC screen printed in the dimensions of 130 x 80 centimeters. Throughout the workshops, notes were taken with the observations collected and oral feedback from the participants. Figure 9 shows the application of the FBC screen in one of the workshops.

Figure 9 - FBC application



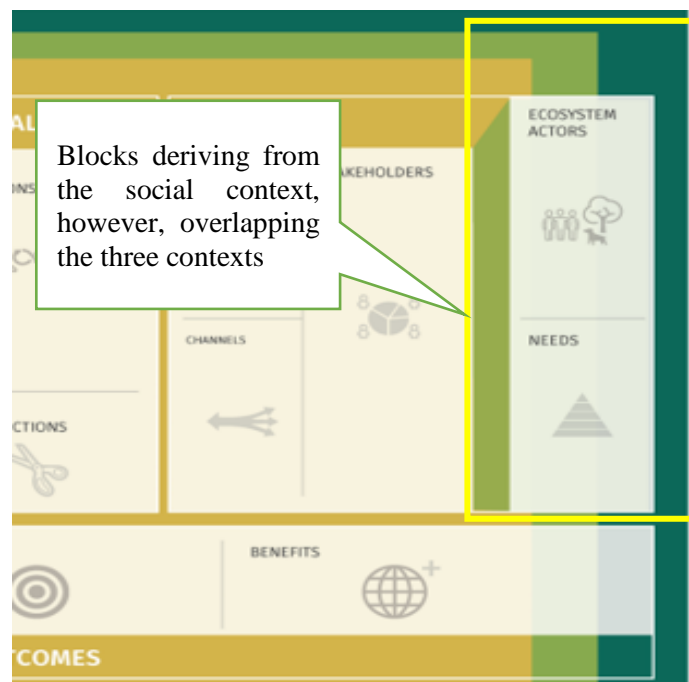
Source: survey data (2021).

Right when starting the activities to fill in the screen, the first observation was the perception that in practice the FBC seemed more complex to the participants than the one presented in the introductory part. This is due to the greater number of blocks of questions, the arrangement of these blocks in economic, social and environmental contexts, together with the four perspectives derived from the Balanced Scorecard by Kaplan and Norton (1996). It was necessary for some participants to carry out an in-depth initial discussion of the screen contexts and how each block of questions could be applied to the reality of the company.

This perception of complexity was also observed in the study presented by Karlsson et al. (2016), as well as in studies of Amalia et al. (2019) where the FBC was considered as a more complicated tool, for example compared to the BMC, precisely because of the number of elements presented on the screen. This first perception of the tool's complexity is indeed legitimate. Tools for representing current business models are limited to economic contexts (Broeck, 2017; Hoveskog et al, 2018), therefore, tools that wish to express their creation and delivery of value at social, environmental and economic levels must certainly involve more elements and interconnections in their schematic representation, which naturally can be interpreted at first as complexity by their users.

Another point considered difficult to understand was related to the composition layers of the canvas. Not necessarily related to contextual systems (economic, social and environmental) and their meaning in the composition of the canvas, but rather the position of the blocks on the canvas and their superpositions to these contexts. For example, blocks such as “Ecosystem Actors” and “Necessities” can be mentioned. These blocks are superimposed on the three contexts, although clearly the figure derives from the social context only (Figure 10).

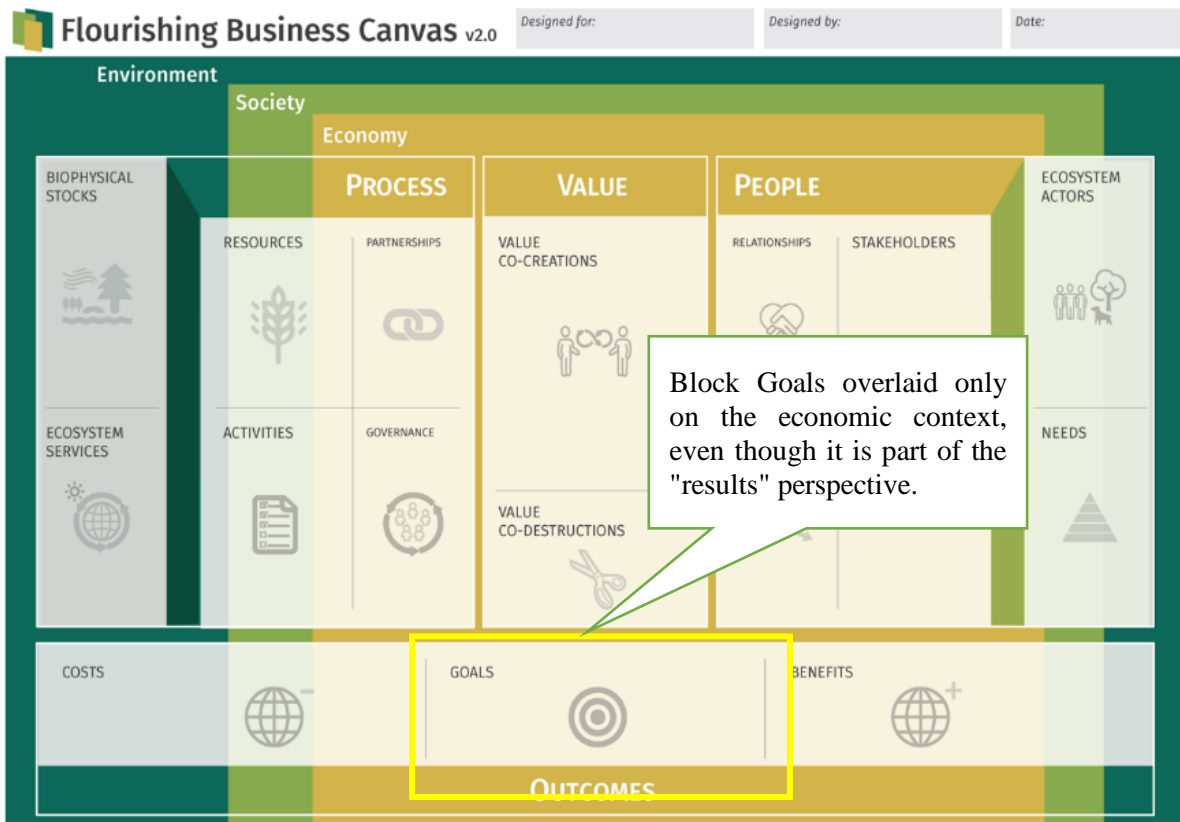
Figure 10 - Illustrative cutout of the Ecosystem Actors and Needs block layers



Source: survey data (2022).

The same situation occurred with the “goals” block, which, despite being within the “results” perspective of the Balanced Scorecard, still generated doubts when filling in, whether there was a need to consider the three contexts or just their position arranged centrally in the economic context. of the screen (Figure 11).

Figure 11- Disposition of the block Goals in the economic context



Source: survey data (2022).

These situations, several times, generated difficulties for the participants to fill in some blocks, especially regarding which contexts to consider, whether social, environmental, economic or all. This difficulty in relating a clear connection between blocks of questions and the appropriate contexts was also identified in the applied study by Ostuzzi and Hoveskog (2020).

Still in the initial part of filling the screen, doubts arose related to where to start filling the screen, that is, which building block to start with. The screen does not show which logical sequence to adopt. Therefore, the sequence suggested by the facilitator was the one presented in the study of Elkington and Upward (2016), the same sequence presented in this study in chapter 2. This situation, however, did not generate major problems. By following the suggested sequence and continuing to fill in the blocks, new insights into the performance of each startup appeared, discovering the interconnections present within an organization, which inevitably made them return to previously filled blocks, reviewing or identifying new ones. vital items to the business model strategy. At this point, this exercise was important to identify gaps, risks and opportunities not observed in previous blocks, making its members visualize



and make commitments to collaborate in the design and implementation of current or future strategies important to the organization, as guided by the study of (Upward & Davies, 2019).

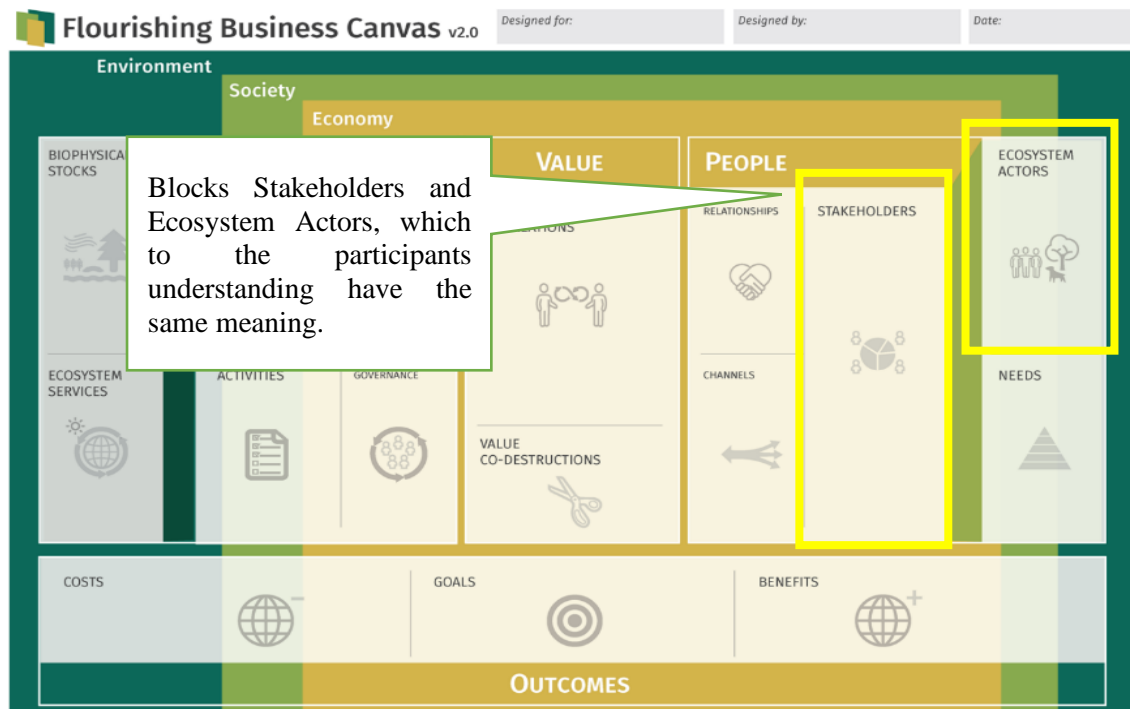
Important insights were obtained during the application of the FBC in the workshops, not only about the arrangement of these blocks in the contexts of the screen, but also the understanding of the concept and practical application of these blocks. In the following items, the main difficulties and ease of usability and understanding of some of the screen's building blocks are presented.

#### 4.3.1 Blocks of questions that are difficult to understand and usability

The concepts of some question blocks on the screen were also considered complex or confusing for some participants. These blocks were pointed out as of little relevance to companies, and were often not used, and, when used, filled in incorrectly, that is, misinterpreted. These blocks were: "Partnerships", "Stakeholders", "Ecosystem Actors", "Governance" and "Ecosystem Services".

Blocks such as "Partnerships", which by definition are the formal partners of the business, and what activities these partners develop for the company, to the understanding of the participants seemed to have the same meaning as the block "Stakeholders", similarly, when comparing the block "Stakeholders" with "Ecosystem players", which for many participants were part of the same context. The "Ecosystem Actors" block is considered on the screen as in fact who and what may have an interest in the existence of the company, whereas the "Stakeholders" block is associated on the screen with who are those involved, and what role each actor plays in the ecosystem (Elkington & Upward, 2016), and this, ended up creating difficulty in differentiating one block from the other (Figure 12). Similar difficulties in differentiating such building blocks were also observed in the study by Zagel and Tarhonskyi, (2020).

Figure 12 - Blocks Stakeholders and Ecosystem Actors



Source: survey data (2022).

The “Governance” block was one of the most difficult to apply and describe in practice. It wasn’t very clear to define who would be a legitimate stakeholder and responsible for decision-making to achieve the company's objectives as advocated by the bloc. At least for the participants in this study, the role of each actor in the organization and their decision-making power was very well defined.

Therefore, it was considered by the participants as not very useful in the general context of the tool or even without relevance for the startup in the current stage of development for them to achieve social, environmental and economic sustainability. However, this false perception of the uselessness of the block can be a consequence of the way the block is presented, that is, by its description on the screen. It is understood that a company's actions and activities are direct consequences of how the company is governed, so approaches to its governance must be considered so that they are effectively sustainable (Broeck, 2017).

Another block that was difficult to understand was “Ecosystem services”. The ideas raised by the participants for this block were scattered and poorly placed. Even for startups A and D, with their business model focused on sustainability and with the use of natural resources in a good part of their production process, there was a difficulty for the participants in classifying which information would be relevant for filling out this block.

It can be seen that there was a difficulty in differentiating the “Ecosystem Services” block from the “Biophysical stocks” block located on the same layer of the screen in the environmental context. The “Biophysical stocks” block deals with stocks and natural resources modified or used by the company, and there were no difficulties in filling this item out by the participants. However, the “Ecosystem Services” block are sun-powered processes that use biophysical stocks to create streams of benefits that humans need: clean water, fresh air, vibrant soil, plant and animal growth, among others, and from these streams which are harmed or improved by the company's activity (Elkington & Upward, 2016).

The difficulty of differentiating these two blocks was the most noticeable, including the block "Ecosystem Service" was not filled out by any startup participating in the study. This situation corroborates the findings in the studies of Ostuzzi and Hoveskog (2020), where the same difficulty was identified in the practical application of the tool in a workshop, or even with the use of secondary data where Broeck (2017), also considered this block as difficult to fill in.

#### 4.3.2 Easy-to-understand and usable blocks

Except for the blocks mentioned in the previous item, the other blocks on the screen were filled without major setbacks. Some of the blocks of questions generated more insights for the participants, including: “Value co-creation”, “Value co-destruction” and “Goals”.

Value co-creation is considered an essential part of FBC, playing a central role in the creation of the company's value proposition and how it will affect other areas (Ostuzzi & Hoveskog, 2020). In fact, this block was the one that generated the best ideas and discussions, although, in rare moments, the participants overlapped the concept of the “Co-creation of values” block with the company's activities or goals, even so, without causing harm to fill the screen.

Used to idealizing a value proposition purely oriented to satisfying a need or solving a problem for their customers, it was in this block that they were able to create a positive value proposition for the startup, but now, satisfying the customers' needs taking into account the environmental aspects. and social. Although the idealization of the creation of the value proposition in the environmental context has been one of the most costly to be identified by the companies, it was possible to perceive that the participants understood the importance of the need to consider all sustainable contexts in the creation of values, consistent with what

was presented in the theory (Amaliah et al., 2019; Breuer et al., 2018; Broeck, 2017; Elkington & Upward, 2016; Ostuzzi & Hoveskog, 2020; Upward & Jones, 2016).

The block “Codestruction of values” revealed to the participants that the company's value proposition could be destroyed. There is often a hesitation in discussing a company's co-destruction of values, sometimes even hiding it, for fear of having a negative impact on the company. For this reason, this block was considered one of the most laborious to develop, precisely because of the difficulty of seeing negative value propositions in its business model, even if unintentionally. The co-destruction of values can even arise from the imbalance of contexts, that is, simply not considering the environmental, social contexts, focusing only on financial benefits, and this can be considered a threat if not addressed (Amaliah et al., 2019).

Finally, the “Goals” block brought a differentiated vision for the purposes established by the participants for their companies until then. From a conventional perspective, companies must be profitable enough, that is their basic initial goal. And that was the initial point of view of all the participants (to be financially sustainable) even though, in the description of the block, there was an orientation to consider the three contexts as the purpose of the company. At first, few ideas were developed considering environmental and social contexts for this block, however, as it was the first to be filled on the screen, naturally this block was "revisited" and complemented as new ideas emerged as the development of other blocks, such as “Co-creation of values” (Elkington & Upward, 2016) and its benefit in co-discovering vital connections to companies that are often hidden (Upward & Davies, 2019).

The development of the workshop with the filling of the screen by the startups occurred satisfactorily. Participants were creative and generated good business model ideas for their startups. The difficulties in filling and understanding the blocks and their elements, when they occurred, were quickly resolved by the workshop facilitator, not causing damage to the development of the construction of ideas and achievement of objectives to describe their sustainable business model. In any case, participants were unanimous in the perception that they would need more time and experience with the screen to fully understand FBC.

One of the research findings is related to the leveling of understanding of screen usability. Although FBC can be used by any company and at different stages of maturity of its current business model (Elkington & Upward, 2016; Upward & Davies, 2019), it was expected that startups A and D, due to their sustainability-oriented business models, would have an easier time developing ideas and, consequently, having an easier time filling the screen and visualizing their actions and values, especially when related to environmental and social contexts. However, this did not happen in practice, that is, the development of ideas by

all startups occurred in a similar way, presenting the same difficulties and facilities in the application of ideas during the workshop.

The same situation was observed in relation to the maturity level of the participating startups. There were no significant differences in the development of the screen by more consolidated companies in the market and with their more defined business model, such as startups C and D.

#### 4.4 TOOL VALIDATION

A survey, when well-designed can have its validity materialized based on the crossing of the results of the data collected with the research tools used and the theoretical content raised (Ferreira Junior, 2019). In this sense, at the end of the workshops, participants were asked to answer a questionnaire to evaluate the tool, and the results of the questionnaires, together with data from the researcher's direct observation, are analyzed in order to compare them with some theories presented by the tool and, therefore, help to validate the FBC when applied to startups. Furthermore, the feedback from the participants during the workshops was also considered essential for the validation of the tool.

The results obtained with the application of the FBC mesh were generally positive. When they were provoked to idealize a future business model or represent their current business model considering sustainable aspects not previously observed in other business models, it made the FBC tool stimulate the proposition of improvements and the updating of the current and future situation of the companies. startups. This exercise made them adopt an overview of their strategy, making it easier to address certain challenges (Broeck, 2017).

The oral feedback during the workshops and the return of the questionnaires proves the participants understanding of the tool's proposal, its usability and applicability in the organization. The main results of the questionnaires are presented below and help to support this statement in order to validate the tool. All 21 participants from the four startups answered the questionnaires, however, only some of the participants reported opinions about the ease or difficulties in using the tool.

The first question was about understanding the Flourishing Business Canvas tool's real purpose for the company or organization. The results were unanimous, the 21 respondents (100%) said they understood the FBC proposal as a tool for modeling sustainable business. This demonstrates that startups have understood the difference between FBC and other

previously used profit-oriented business modeling tools. Furthermore, it signals the understanding of the need to apply a more complete view of the business, its risks and results in environmental, social and economic contexts in one's own company. This is considered as one of the main benefits when using the tool (Upward & Davies, 2019).

The second question addressed the ease of understanding the FBC screen, its layers and the distribution of questions in each block. The results were mostly positive, 5 participants (33.3%) remained neutral, neither agreeing or disagreeing, and 16 participants (76.2%) agreed on the screen format. There were no responses disagreeing on the ease of understanding the screen, however some observations were reported: "I'm not sure when to fill in as environmental, social or financial"; "In some cases, such as ecosystem actors and needs, I didn't know which layer to consider" (Startup A). Same report presented by other participants: "Some blocks of questions are not on top of all the colors, I didn't understand if I should also consider them as environmental or social"; "Some boxes have the observation to consider, whether environmental, social or financial, others do not" (Startup B). This difficulty in understanding the layers of contexts to be considered occurred at various times, but with the help of the facilitator, doubts were promptly resolved.

Other participants considered the screen complex and reported some difficulty in understanding it initially: "I found it confusing at first, it would take more time to understand all the blocks" (Startup C). "The screen is very complex, I found it tiring with so many colors and questions..." (Startup D). In fact, the participants needed time for the final implementation of the screen. In addition, an in-depth discussion between the parties was necessary to better understand each block and its functionalities. This situation, however, is seen as positive, as the FBC has as one of its purposes this collaborative discussion between the parties involved (Elkington & Upward, 2016; Jones & Upward, 2014).

Continuing the screen evaluation, the third question addressed the ease of understanding the questions of each building block. Once again, the results were mostly positive, with 14 agreeing (66.7%), neither agreeing or disagreeing 6 (28.6%) and disagreeing 1 (4.8%). Doubts and difficulties faced about understanding the blocks were reported: "The ecosystem actors and stakeholders blocks are very similar to me, I can't see much difference between the two"; "The questions of some blocks are similar..." (Startup A). Still on the understanding of the blocks, "It was very vague for me what the blocks are, biophysical stocks and ecosystem services" (Startup B), "The most difficult block for me was ecosystem services, I didn't understand what to fill in "; "I understand that stakeholders and partners should be in the same box, because for me they are the same thing" (Startup C), "The governance block doesn't

make much sense the way it was presented” (Startup D). As observed, difficulties in understanding some blocks were found in several situations, in the presentation and application phase of the tool, via direct observation and in the oral feedbacks and by applied questionnaire, therefore, it was considered in this study as one of the possibilities for improvement for the tool.

The fourth question aimed to identify whether the participants considered the FBC as an efficient and useful tool for the elaboration of their business model. The results were positive, even with some observations of difficulties previously reported. 15 (71.4%) respondents agreed with the statement that the FBC is an efficient and useful tool, with 4 (19%) fully agreeing and not agreeing or disagreeing, that is, only 2 (9.5%) remained neutral.

On this particular question, some positive points were reported: “The screen was a great experience for the company, it made us think about other perspectives”, “It helped a lot, it made us think beyond profit and the environment, now we were able to consider the social, this was not thought of before” (Startup A). Another report is related to comparisons with other only profit-oriented modeling tools, such as “I found it important to apply sustainability in all of our company's processes”; “We found problems that we hadn't identified before in the other business modeling we did with other tools” (Startup B).

Other participants gave positive reports of the tool for a current and long-term vision: “Interesting to consider the current and future sustainability of our company”; “The screen made us realize actions that we do not practice every day and that we need to adopt from now on” (Startup A). “It gave us a broader view of the company considering sustainability” (Startup B). “It was very convenient to see this screen, it made us think more deeply about our strategy.” (Startup C). “Yes, the screen is useful, it helps a lot”; “It was very productive”; “We were able to see that everything is related to the company's sustainability” (Startup D). These positive views presented by users were also observed in studies of (Karlsson et al., 2016; Ostuzzi & Hoveskog, 2020; Upward & Davies, 2019).

Question five aimed to identify whether there was a positive impact on the company after the development of the business model using the FBC and whether with the help of the screen it was possible to increase awareness for the generation of sustainable value by those involved. In this question, 13 (61.9%) respondents agreed and 8 (38.1%) fully agreed. It is evident that despite some challenges reported by some participants, due to the high percentage of agreement with this question, in general the practice of the workshop generated positive results in the participants in relation to increasing their perception of generating sustainable

values. This change in the perception of values is expected as individual and shared learning occurs with the use of the tool (Upward & Davies, 2019).

A summary of the answers of the first five questions of the applied questionnaire is presented in Table 8, which refers to the percentages of the answers of the closed questions.

Table 8 - Results of the questionnaires

Purpose of the question	Results
Understanding the real purpose of the Flourishing Business Canvas tool for the company or organization.	21 (100%) stated that they understood the tool's proposal.
Easy of understanding the FBC screen, its layers and distribution of the questions in each block.	16 (76.2%) agreeing with the statement and 5 (33.3%) being neutral.
Easy of understanding of the questions in each building block.	Agreeing 14 (66.7%), neither agreeing nor disagreeing 6 (28.6%) and disagreeing 1 (4.8%).
To identify if the participants considered the FBC as an efficient and useful tool for the elaboration of their business model.	Agreed with the statement 15 (71.4%) respondents, totally agreeing 4 (19%) and neutral 2 (9.5%).
To identify if there was a positive impact on the company after the elaboration of the business model using the FBC.	Agreeing 13 (61.9%) respondents and totally agreeing were 8 (38.1%).

Source: survey data (2021).

The questionnaire also had two open-ended questions. Question six addressed the participants suggestions about possible improvements to the FBC tool, and these suggestions are presented in item 4.5 of this study. Question seven, on the other hand, aimed to capture the participants perception of the workshop in general, such as the facilitator's conduct of the workshop, interaction between those involved and general expectations.

In this regard, the answers obtained with question seven were positive, prevailing a good assessment of the screen presentation and the conduction of the workshop in general. It is worth mentioning only one observation made by one of the participants: "I found the workshop too long" (Startup B). This observation is pertinent, and in this case, it may have occurred because the workshops with startups A and B took place on the same day and time.

In addition, Table 9 presents a summary of the main results with the application of the tool in the workshops, a compilation of the results presented throughout the development of this chapter.



Table 9 - Summary of the main results of the workshops

Main difficulties in usability and understanding the FBC
Initial perception of greater complexity of the screen compared to other tools.
Layers of screen composition related to the arrangement of building blocks in the environmental, social and economic contexts.
Understanding of the description and usefulness of building blocks such as: "Partnerships", "Stakeholders", "Ecosystem Actors", "Governance" and "Ecosystem Services".
Differentiation of the concepts of blocks considered similar.
Main positive points observed of the FBC
Usefulness of the tool for the development of good and creative business model ideas.
Dynamism of the tool with its collaborative visual design.
Understanding of the need for a broader and more complete vision of the business, its risks and results considering the sustainability contexts.
Positive impact on increasing the perception of sustainable value generation.
Stimulus for the proposition of improvements in a current and future strategic vision.

Source: survey data (2021).

Based on these results, it became clear that the interaction between those involved in the workshop to co-create sustainable solutions for their business model contributed to a better understanding of the tool and its usability. During the workshops, the FBC provided a common language for stakeholders, making them work effectively together and, consequently, identifying and describing characteristics for a sustainable business model in a real world, consistent with the theories addressed in the studies of Elkington and Upward, (2016); Karlsson et al. (2016) and Upward and Jones, (2016).

The difficulties reported by some participants in this study were occasional, nothing that discredits the tool, and some points that are subject to improvement were identified and are presented in detail in the next item. In studies applied to other types of organizations, easy and difficult points were also observed to understand and use as the study of (Broeck, 2017; Hoveskog et al., 2018; Ostuzzi & Hoveskog, 2020).

Through the direct observation of the researcher during the application of the workshops, together with the oral feedbacks and the questionnaires answered by the participants, it appears that the FBC can be considered as a very useful tool for the modeling of sustainable business, and this finding corroborates studies such as for example Broeck (2017); Dahou, (2018); Elkington and Upward (2016); Hoveskog et al., (2018) and Upward and Jones (2016). When applied to startups, even with the small selection of cases in this

study, the usefulness of the tool can be proven, and therefore validating its potential for sustainable business modeling in these ventures.

#### 4.5 IMPROVEMENT PROPOSALS

The proposals suggested in this item are based on direct observation, on the questionnaires completed by the participants and on oral feedback during the workshops. Basically, they are related to two aspects: improving the specifications of the blocks of questions and their positions on the layers of environmental, social and economic contexts. The proposed improvements are not only related to making the tool more adapted to the reality of startups, but also to provide improvements for all types of companies and organizations.

As observed in the results of the study, some blocks of questions are complex to understand, such as the block of “Ecosystem services”, mentioned a few times by the participants. This difficulty in interpreting the name of the block itself or even its description increases the possibility of generating misinterpretations, sometimes ignoring really important processes to be considered when modeling a business with the intention of being truly sustainable.

The improvement proposal is that for each block a list of examples is created. Thus, doubts that arise during the application can be quickly resolved without the help of a facilitator with greater knowledge and affinity with the screen. Although these examples may be generic, and not always useful for some types of organization, by providing this list for each block, it would make it easier to fill in the screen in future workshops, or even to fill in the screen in case studies with secondary data.

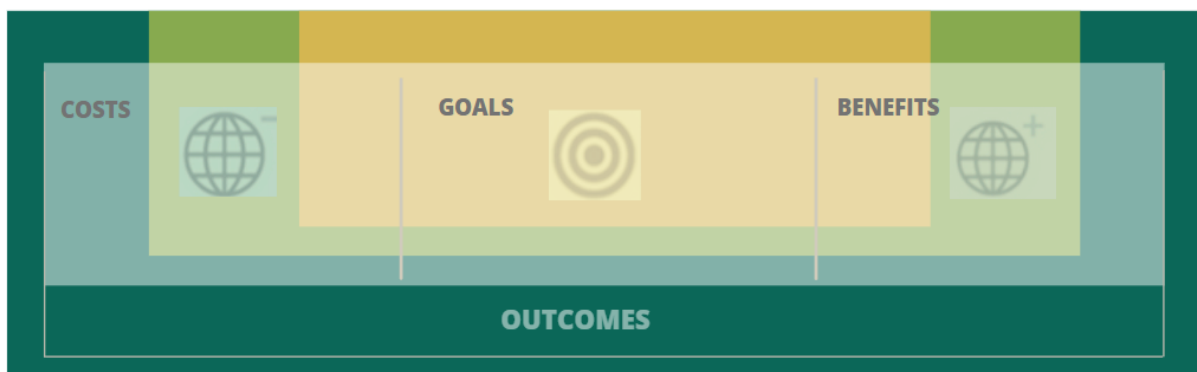
Doubts related to the position of the blocks on the screen and about which context to consider each block were also constant. Blocks with explicit instructions on which context to consider, such as the “goals” block, where the contexts to be considered (environmental, social and economic) are well defined, are not difficult to elaborate, even though their position in the context, visually, is above only the economic context. On the contrary, blocks such as “Resources” and “Activities” do not have explicit instructions on which context to consider, but from the position they are shown, overlapping the three contexts, it is very clear that the three contexts (environmental, social and economic) should be considered in their completion whenever possible.

According to Antony Upward (personal communication, 05/26/2021), when using the FBC, one should consider the arrangement of blocks and their contexts as nested layers, that is, as actually happens in the “real world”, where the environment contains society. and which in turn creates the economy. In this way, questions that are in the financial context are somehow related to the environmental and social contexts, as they are part of a whole. However, in practice this is not very evident to the participants, which creates confusion. The visual perception of the colors related to the blocks and their contexts is what prevails at first.

The suggestion is to adapt the layout of the layers of each context, so that each block of questions is necessarily positioned to the context that must be considered, or even superimposed on the three contexts, such as the blocks “Resources”, “Activities”, “Costs” and “Benefits”, or those that are clearly defined only in the environmental context, such as “Biophysical Stocks and “Ecosystem Services”.

As an example, we present a suggestion based on these arguments applied only in the “results” perspective. In the example presented in Figure 13, the “goals” block, previously visually superimposed only on the economic context (Figure 11), now clearly overlaps with the environmental and social contexts, so, during an application of the tool, there would be no doubt that it should whenever possibly consider the three contexts.

Figure 13 - Example of layout adequacy



Source: own authorship (2022).

These changes related to the design of the screen could bring practical results when filling the blocks, facilitating the visualization of each block and its respective context, therefore, facilitating the application of the screen and the development of ideas in sustainable business modeling.

It's known that works are being carried out for the constant improvement of this tool, such as those developed by the group of First Explorers of the FBC (The Toolkit & Canvas –

Flourishing Enterprise Innovation Toolkit, 2021), and studies such as Norris (2019). The suggestions presented in this topic, based on the practice and perception of those involved in the workshops, complement these efforts of continuous improvement of the tool.

## 5 CONTRIBUTIONS TO PRACTICE

The present study aimed to investigate the potential of Flourishing Business Canvas (FBC) as an efficient tool for sustainable business modeling by startups. To achieve this objective, workshops were developed with the application of the FBC together with four startups and with this to evaluate the applicability and usefulness of the tool for business modeling and sustainability by these companies.

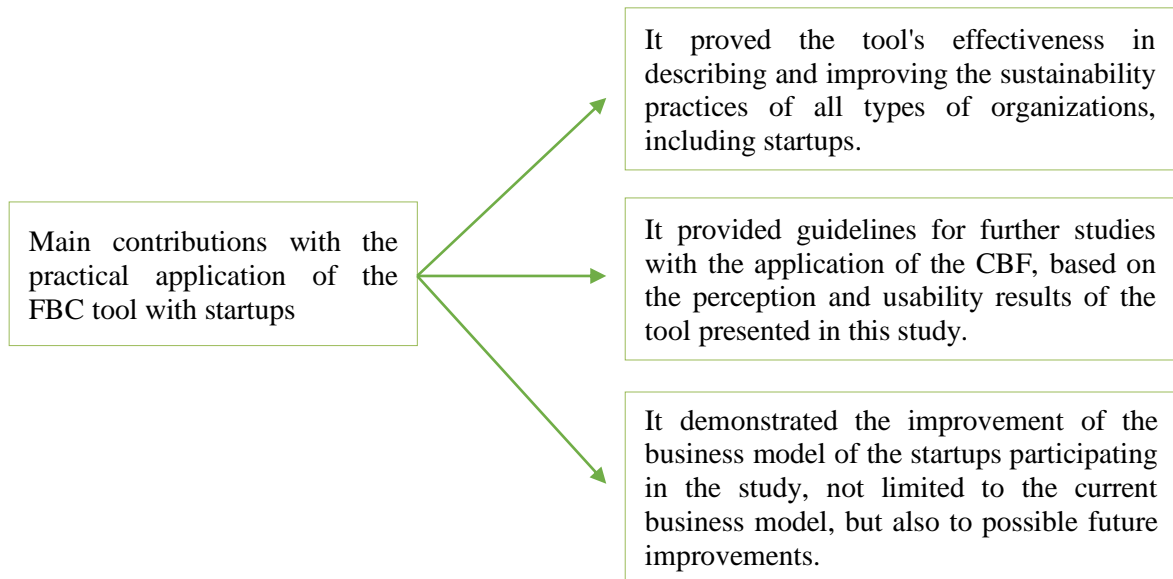
The efficiency of the FBC tool for business modeling or for the elaboration of sustainable actions by organizations has already been tested and proven in other studies (Amaliah et al., 2019; Dahou, 2018; Echeverría, 2017; Hoveskog et al., 2018; Jiménez Herráez, 2019; Karlsson et al., 2016; Sonowal, 2017). However, the evaluation of the effectiveness of the FBC in the development of sustainable and responsible business models when applied to companies such as startups required further studies.

Regarding the empirical research on the FBC tool, with the results obtained in the workshops through direct observation, feedback from the participants and through a questionnaire applied, it is proven that the FBC should be considered as a potential tool for the development of models of sustainable business by startups. The results obtained indicate that the FBC can be used as a tool to understand the sustainability of startups as a whole, and therefore, be used as a tool for business modeling with the intention of being effectively sustainable.

The workshops with the application of the FBC offered insights to the participants, mainly in the concern with the social and environmental improvement actions of these companies, integrating concerns into their strategies and activities, which was not considered by some of the companies before. It can be seen that the FBC was able to encourage participants to “think sustainably”, and this is due to the dynamics of filling the screen and its collaborative visual structure and design, which ended up inspiring participants to consider aspects and valuable information about your business that other modeling techniques oriented solely to economic advantage would not consider.

In summary, the practical contributions of the study cover three main perspectives to be considered as shown in Figure 14:

Figure 14 - Practical contributions of the study



Source: survey data (2022).

The first contribution proves the effectiveness of the FBC tool when applied to startups, and this not only meets the general objective of this study, but also proves its versatility to identify and describe the sustainability of all types of organization and business model (Upward & Davies, 2019).

Nevertheless, the results obtained with the application of the workshop provide guidelines for further practical studies using the tool. This is due to the fact that this study presents important considerations about the perceptions of the participants in relation to the difficulties faced in the understanding and usability of some items of the tool, and which are important to be reviewed and retested in other practical cases, and in this sense this study contributes to practice by identifying and presenting such difficulties.

Last but not least, it appears that with the practice of the workshop, it was possible for the members of the startups to elaborate and improve their business model considering sustainability as a whole, not limited to what needs to be improved in the current phase of development. company, but also to possible improvements and future threats. This result in practice corroborates studies such as those by Halberstadt and Johnson (2014) and by Ferreira Júnior (2019) on the need for startups to consider sustainable practices and values throughout the development process since their inception.

These improvements, when effectively implemented and considering all contexts of sustainability in their business model by startups, can also be identified as a necessary aspect to create competitive advantage. It is understood that by not considering engaging in best

sustainability practices, these companies, as a result, will not be able to compete and exist in the business environment (Broeck, 2017).

In this sense, the study applied to startups helped them to better understand their business, visualizing essential situations for sustainability and their current and future competitiveness, and this can be seen as a practical contribution, being something advantageous and essential to consider, since these companies develop their activities in an environment of great uncertainty (Ries, 2018), competition and systemic problems linked to the economy (Nassif et al., 2020) and, consequently, a high mortality rate of this type of enterprise (Nogueira & Arruda, 2015).

## 6 FINAL CONSIDERATIONS

The Flourishing Business Canvas (FBC) is a tool developed for business modeling with the intention of being effectively sustainable. It helps companies and organizations to develop a more complete view of their actions and consequences of their activities over time, minimizing economic, social and environmental risks.

This study, using the action research technique, sought to better understand this tool, introducing it and investigating its potential when used for business modeling by startups. Conducted with four startups and 21 participants in all, the study evaluated and described its usability, presenting positive aspects of its use and others with the possibility of improvement. Therefore, the study contributes to a better understanding in terms of usability and applicability of the tool.

It is noticeable that developing or transforming a company's business model is sometimes a difficult task to operationalize, especially in startups, which, by the natural process of their creation, generally use other tools to model their business. Some of these tools are proven to be efficient and widely used, such as the Business Model Canvas (BMC). Although widely known and effective, such modeling tools are basically oriented towards economic aspects.

From this point of view, a question arises, almost a provocation for companies when thinking about their current or future business model: Why not consider all sustainable aspects in your activity? In other words, if this possibility exists, why not use a modeling tool that already addresses sustainable and value-generating concepts right at the beginning of its modeling? The results will certainly be beneficial for the company, leaving no losses when compared to other profit-oriented modeling tools, and in this sense, the use of FBC can help with this activity and answer this question.

Corroborating this statement, it can be seen that the use of the FBC provided a holistic view of sustainability for the participants, encouraged the ideation and visualization of their business model allied to the concern for social and environmental improvement. The tool also contributed to the integration of individual and shared learning about the sustainability of these companies. Therefore, the results indicate that the FBC should be considered as a potential and useful tool for sustainable business modeling by startups. And this result, therefore, answers the research question of this study.



The general and specific objectives of this study were also achieved. When investigating the tool, its potential for the development of sustainable business models was proven. The tool was validated after the workshops were held with the startups, through applied questionnaires and direct observation of the researcher. Additionally, improvement actions were proposed in points observed with greater difficulty for users to understand.

However, despite the positive results and objectives of the study having been achieved, some limitations need to be related. The first limitation concerns the small number of participating startups, which because the study used a convenience sample, it is not possible to generalize the results of this research. Additional studies with a greater number of startups are needed.

Another limitation to be mentioned is related to the completion of the questionnaire at the end of the workshops, which was used as part of the method for validating the tool. Respondents may not have effectively understood the issues raised, and responses that are inconsistent with the real understanding of aspects addressed about the tool may have occurred. Furthermore, some of the participants were personal acquaintances of the workshop facilitator, this may have influenced socially positive responses. Also, the workshops had an average duration of 3 hours, therefore, a possible fatigue of the participants may have influenced both the answers to the questionnaires at the end of the workshop, as well as influencing the completion of the screen's building blocks.

The novelty of the FBC can also be considered a limitation of this study. At the same time that this novelty enables an agenda for future studies, a greater amount of empirical studies could have helped in the elaboration and application of the tool in these workshops. Perhaps important points or observations inherent to the application of the FBC may have been overlooked, and this could have somehow altered the participants perception and, consequently, the results of the study.

Therefore, based on some of these limitations and on the results found, some possibilities for future studies are suggested, which will contribute to a better understanding and development of the tool. One of these possibilities would be to repeat this study with a greater number of startups, so it would be possible to verify if the results would be similar to those of this study, or if the tool's premises are really suitable for all companies and organizations. Likewise, studies with startups at more advanced levels of development would also be relevant, verifying whether different levels of financial maturity or business expansion can influence the perception of sustainability values by these companies.

Future research may also examine the results between planned business models and realized business models using FBC. Similar works and this one can be carried out longitudinally, to analyze whether the prototyped ideas in the development of sustainable business models are confirmed over time. This research suggestion is justified due to the startups' own development dynamics and their rapid growth and scalability, and a follow-up of the later stages of implementation would be relevant.

Another important possibility for future research may be to apply FBC at the network level. The present study evaluated the tool at a single business level, so evaluating the FBC considering all stakeholders can bring important results on its functionality, in addition to bringing a potentially differentiated view when applied only among the internal parts of the organization. It is understood that these actors external to the organization can bring new ideas and valuable perspectives for the sustainability of the company.

This study closes considering the statements presented from its initial starting point: That the practice of sustainability by companies and organizations is the main moral and economic imperative of this century (Elkington & Upward, 2016). Therefore, this research sought to contribute to studies on sustainability, especially for the development of sustainable business models with the Flourishing Business Canvas (FBC) tool.

The idea of this dissertation was not to exhaust the subject on the subject, nor would it be possible, given its complexity and novelty, but rather to bring to light important reflections on this recent tool, its applicability to startups and its creation of values, and, consequently, to help in the construction and awakening of a more sustainable society and with the possibility of flourishing for all.

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## APPENDIX A - RESEARCH QUESTIONNAIRE APPLIED

This questionnaire is part of a research entitled "**The Flourishing Business Canvas as a tool for modeling sustainable business in startups**" carried out by Alexandro Pellin, student of the Professional Master's Degree in Business Administration carried out at the State University of the West of Paraná (Unioeste).

The results of this questionnaire will serve as subsidies for the validation of the tool object of the study applied earlier in this workshop.

Startup participant \_\_\_\_\_ Date \_\_/\_\_/\_\_

01 – When answering the tool's question blocks, was it clear to you what the Flourishing Business Canvas tool's purpose is for your company/organization?

- I didn't understand
- unable to give an opinion
- I understood

02- Was the format of the Flourishing Business Canvas easy to understand and the distribution of questions in each block?

- I totally disagree
- I disagree
- I do not agree or disagree
- I agree
- I totally agree

If you had difficulty understanding the screen format, describe your perception here:

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03 – Were the questions presented in each block of questions easy to understand?

- I totally disagree
- I disagree
- I do not agree or disagree
- I agree

I totally agree

If any of the questions (blocks) were not clear, describe which ones you had difficulties in understanding:

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04 – Do you consider the Flourishing Business Canvas an efficient and useful tool to assist in the elaboration of your business model?

I totally disagree

I disagree

I do not agree or disagree

I agree

I totally agree

Describe the positives or negatives about the tool in your opinion:

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05 – Regarding the impact on your company/organization after the elaboration of your business model using the tool, do you believe that with the help of the screen it may be possible to increase awareness about the generation of sustainable value for all the actors involved (employees, customers, suppliers and partners)?

I totally disagree

I disagree

I do not agree or disagree

I agree

I totally agree

06 – What is your suggestion for improvement for Flourishing Business Canvas? Layout, distribution of blocks, questions for each block, etc...

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07 – What is your opinion about the workshop? Driving, presentation of the tool, interaction between those involved, expectations (application of the tool in your startup)