Sustainability and Academic Entrepreneurship:
The case of Brazilian University incubated Startups

Introduction

Academic entrepreneurship is defined by all those efforts by universities to support the commercialization of ideas on campus and of the universities' outskirts (Siegel & Wright, 2015). Academic entrepreneurship, has become more and more important ''as universities and research institutions have increasingly recognized the need to transfer knowledge and technology from the academic sphere to the commercial world'' (Sieg, et al., 2023). Thus, in the recent decades an arrival has been observed of incubators, accelerators and technology transfer offices, that support with diverse resources entrepreneurs with their business ideas and startups (Fischer, et al., 2019).

As global challenges such as climate change, social inequality, and economic instability intensify, the role of entrepreneurial ecosystems in fostering sustainability has become a key area of academic inquiry. Zooming out, entrepreneurship as a whole, is a critical driver of sustainable development (Hall, et al., 2010), fostering businesses around social and environmental needs. Sustainable development, as first defined by the United Nations, is ''the development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs'' (WCED:, 1987). To shape actions towards sustainability in a more defined way, the United Nations in 2015 created the 2030 Agenda, a blueprint in which 17 sustainable development goals (SDGs) were defined (United Nations, 2025).

Connecting to the entrepreneurial university, university startups, seen as a vehicle of academic entrepreneurship are hubs of knowledge-intensive entrepreneurship, that serve as catalysts for economic growth (Audretsch, 2014). Apart from economic growth, there is literature connecting academic entrepreneurship to sustainability, indicating that academic entrepreneurship promotes sustainability in various ways (Qian, et al., 2018) (Sieg, et al., 2023) (Piwowar-Sulej & Kwil, 2018). The extend to which university startups integrate sustainability into their core strategies, addressing pressing environmental and social issues through novel business models and technological advancements remains an ongoing academic discussion.

What still remains an open question, is the background motivations and barriers which university startups face to associate and engage with sustainability. This study therefore, wants to investigate the preliminary impact and connection of academic entrepreneurship to sustainability. To examine how academic entrepreneurship navigates sustainability in the

intersection of market demands, environmental responsibility, social responsibility and ecosystem dynamics overall, we focus and frame our analysis around
Brazilian university startups.

The following research question is answered by this study:

(RQ1): How do university startups navigate motivations and barriers to sustainability in Brazil?

To answer the research question, we conducted structured interviews and secondary data analysis, for 25 university startups. Each time the founders of the university startups were interviewed. The university startups came from Rio de Janeiro and São Paulo, from a total of 5 university incubators.

This research contributes to the broader discourse by highlighting the motivations, challenges, and strategic decisions of university startups operating within a sustainability framework.
By addressing this open academic question, this study aims to advance theoretical and practical insights into the evolving landscape of sustainability and entrepreneurial ecosystems.

The novelty of this research lies on the fact that literature on sustainable academic entrepreneurship is focused on the western civilization and its very limited on the global south. The Brazilian context is new, representing the BRICS emerging countries and adding to the puzzle of understanding the phenomena globally through first hand in-depth data. As the global south is more susceptive to environmental breakdown, their participation and study of behavior and action is important and shall be included in the academic discourse. Last but not least, sustainable academic entrepreneurship research shall not be only represented by WEIRD (Western, Educated, Industrialized, Rich and Democratic) countries (Henrich, et al., 2010), that are at the same time a minority that is unfortunately overrepresented. This leads to mis-represented and mis-leading results that do not mirror the reality of our global economy, society and environment. Policies then than draw into such misleading research can prove to be non-fitting, or even damaging for the global south and the rest of the world.
Finally, to our knowlesdge, there is scarce literature on academic entrepreneurship and sustaianability from the perceptive of the universtiy startups themself, and not from the university itself.

Theoretical Background

To understand the entrepreneurial motivations and barriers university startups face in pursuing sustainability in Brazil, this study integrates the Eclectic Theory of Entrepreneurship (ETE) and the Stakeholder Theory. It is significant to use micro and macro perspectives, consider personal characteristics and environmental features, combine multidisciplinary views and measure motivations using the appropriate complex structures (Rashid, 2023) (Naffziger, et al., 1994).

Firstly therefore, the ETE is adopted for this study. The theory explains multidimensionally, why and how individuals engage in entrepreneurship, considering multiple levels of influence — individual, organizational, and contextual. Rooted in economics, psychology, sociology, and business studies, it was notably elaborated by Verheul et. al. (2001) (Verheul, et al., 2001), that identify the complex motivations emerging from an individual's evaluation of opportunities, external resources, and internal traits.

In this study, the ETE is extended to analyze not only the decision to engage in entrepreneurial activity, but also the specific motivation to pursue sustainability. By considering internal values and goals, external support structures, and perceived market opportunities, ETE enables a multidimensional understanding of why university entrepreneurs embed sustainability into their ventures.

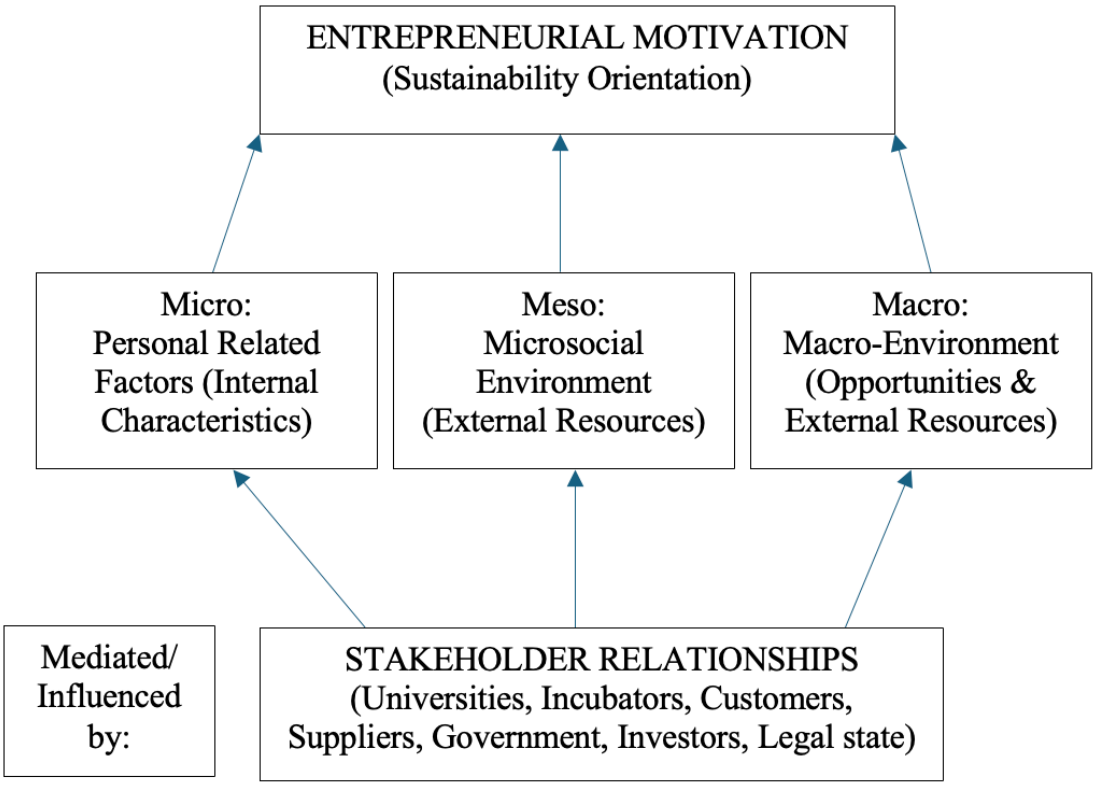
Now secondly, stakeholder theory is ideal for examining external relations that influence motivations and barriers. We identify stakeholders that take into account how varied actors such as investors, customers, suppliers, regulators, universities and communities influence university startups' decisions towards sustainability. Freeman (1984) emphasizes that organizations shall address the interests of all stakeholders, and not just shareholders. Therefore through this theory we explore the interviews through the lengths of how those stakeholders help startups overcome barriers and stimulate sustainability motivations, how startups are motivated or constrained in their sustainable behavior.

As Freeman (Freeman, et al., 2010) mention that ''sustainability is a multidimensional construct that involves all of the key stakeholders, as well as the environment and society at large'', we can understand that sustainability can engage diverse strategists in stakeholder-based analysis.

Synthesizing, while ETE explains entrepreneurial motivation towards sustainability as a function of personal characteristics, access to resources, and perceived opportunities (Verheul et al., 2001), Stakeholder Theory (Freeman, et al., 2010) adds a critical relational layer. Stakeholders influence not only the entrepreneur's decision to act, but also the nature and accessibility of sustainability-related resources and opportunities. This combined lens allows for a holistic analysis of how sustainability motivation is shaped, supported, or constrained in entrepreneurial ecosystem, especially in the context of academic entrepreneurship.

Extending therefore the existing research, we synthesize our theoretical framework as illustrated on Figure 1. As adapted from existing theories (Wagner & Sternberg, 2004), (Verheul, et al., 2001) and (Rashid, 2023), we merge ETE and Stakeholder Theoery into one model, that accounts for macro-level factors such as market or policy environments, meso-social support systems, and personal entrepreneurial values or capabilities. Thus, entrepreneurial motivation towards sustainability is shaped by the interplay between different layers, alongside with the individuals positioning within a particular socioeconomic context. Last but not least, stakeholders play a mediators role on those layers, where they influence the motivations and barriers towards sustainability in a relational way, not just with an internal way.

Figure 1: Theoretical Framework rooted in the eclectic theory of entrepreneurship and the stakeholder theory.



Source: Own, inspired by the models of Wagner and Sternberg (2004), Verheul et al. (2001) and Rashid (2023). (Verheul, et al., 2001) ~~and~~ (Rashid, 2023)~~.~~

Methodology

The current empirical study is designed to examine stakeholders and their impact on university startups, when it comes to supporting them overcoming barriers and engaging them towards sustainability. For this purpose, we proceeded with a comparative case study of university startups and we did interviews with the apropriate research set up, following qualitative research standards. As Yin (2003) (Yin, 2003) proposes, case study is the approapiate method to use, as our ‘‘How’’ research question examines operational links between stakeholders and universtiy startups and a contenmporary set of events over which we have no control on.

Additionally, as Qian et. al (2018) mention, ‘‘case studies can provide rich and detailed information that allow for in-depth analysis, argumentation’’. As we are dealing with decisions and motivations towards sustainability, how they are implemented and with what result, and at the same time we are dealing with a dynamic interactive process, a case study is the appropriate method to use (Yin, 2003).

Therefore in our research, we engaged five university incubators and programs from Rio de Janeiro and São Paulo, which are: Genesis from Pontifical Catholic University of Rio de Janeiro (PUC Rio), COPPE from Universidade Federal do Rio de Janeiro (UFRJ), Base from Escola Superior de Propaganda e Marketing (ESPM), Cietec from Universidade de São Paulo (USP) and PEIEX from PUC Rio. As part of the casy study, program documents available on their website were analysed. Furthermore, structured interviews were conducted with 25

university startups founders, incubated each time in one of the 5 abovementioned incubators and programs. Interviews are a valid data collection method for qualitative research, especially for complex, rare and strategic high level business situations as Eisenhardt and Graebner (2007) state. They also explain that ‘‘interviews are a highly efficient way to gather rich, empirical data, especially when the phenomenon of interest is highly episodic and in frequent’’. (Eisenhardt & Graebner, 2007). Their statements are in line with our study.

The methodological steps taken for this study include first a summarising literautre review to dive into the theoretical background and the research gaps. The database used was Scopus from which the first papers came from. Afterwards, a snowballing method was applied to receive related articles through cross citations. Additionally, ResearchRabbit was used, the innovative citation based literature mapping tool, to optimise the search for fitting references and enhance the snowballing efforts.

As a next step, founders of incubated university startups in the 5 aforementioned university incubators were selected, contacted and interviewed, to collect the data. Majority of those university startups were less than 5 years old. The selected founders were contacted privately per email or per phone message. Part of the interviews were conducted in person in Rio de Janeiro in the hosting facilities of PUC Rio, and part of the interviews were conducted and recorded via Zoom. The interviews were conducted from February to April 2024. In total 25 founders were interviewed. For the purpose of triangulating the data, 5 additional interviews were conducted with managers from each of the 5 university incubators.

The interview guideline (see also in Appendix) was created in a structured way. Inspired by the empirical research works of Cagarman et al. 2023 (Cagarman, et al., 2023), we created an interview guideline that extends the literature on the case of Brazil looking into barriers and motivations towards sustainability. In summary, during the interviews we explored the business models, value propositions, motivations, barriers and strategies for aligning with the United Nations’ Sustainable Development Goals (SDGs). Furthermore, during the interviews the role of stakeholders as part of the entrepreneurial ecosystem and its support on sustainability was assessed. Examples of stakeholders that were analyzed was incubators, universities, investors, policymakers, clients, mentors, suppliers, governmental bodies and legal entities.

All interviews were coded using the atlas.ti software and following an inductive coding approach, without prededetrmined codes. Saldaña (2021) (Saldaña, 2021) proposes an inductive approach for ‘‘entering the analytic enterprise with as open a mind as possible…that creates original codes’’. Descriptive coding was chosen to generate the sufficient list of subtopics of what is talked about in the interviews, since our research question is epistemeological, (Ibid). Thematic analysis was performed, organising the codes, combining them into simialr ones, searching for themes and finally defining the themes. In total, three hierarchical categories of codes were produced, having 1st order concepts, 2nd order themes and concluding aggregate dimensions that synthesie the meaning of the data, as Gioia et al. (2012) (Gioia, et al., 2012) suggest for an inductive approach. Finally, the key themes from the codes are addressing our research question.

Presentation of results

This section presents the results of the structured interviews. All startups of the sample are incubated in a university in Brazil, qualifying thus as a university startup. Table 1 provides an overview of the university startups of the sample, starting with 8 out of 25 startups. Figure 2 is supporting to Table 1 by presenting context to the Sustainable Development Goals by the United Nations. Table 2 illustrated the barriers that university startups face while engaging with sustainable entrepreneurship, what hinders them to be sustainable. Table 3 presents the motivations towards sustainable entrepreneurship and finally Table 4 showcases the supportive involvement of stakeholders towards sustainability.

Table 1: Sample Analysis

Company's Name	Sector	Purpose/Mission	University/ Incubator	Target Market	Age	SDGs* direct target impact – top 3
Braver	Construction: alternative sustainable materials	Create connections between academic research and industry for new construction materials	PUC Rio/ Genesis	B2B	2019	SDG9 SDG11 SDG17
Aquapower	Water engineering: clean energy production	To create an impact on climate change by offering clean energy	UFRJ/ COPPE	B2B	2022	SDG7 SDG13 SDG11
Brecho do Carbono	Textile waste carbon extraction: transformation technology	Solve two problems for the environment: a) textile recycling b) creation of active carbon in a sustainable way	USP/ CIETEC	B2B B2G	2023	SDG9 SDG11 SDG12
Deco	Software infrastructure for e-commerce	High performance commerce experience that creates less emissions due to its velocity and is more accessible to young developers	PUC Rio/ Genesis	B2B B2C	2022	SDG8 SDG4 SDG9
Eccaplan	Environmental solutions: carbon credits & carbon emission calculation	Helping companies to calculate their carbon emission, their environmental impact and compensate/offset their impact by carbon credits from environmental projects.	USP/ CIETEC	B2B B2C	2008	SDG13 SDG12 SDG11
Eletrons Livres	Turbine technology for	Building a sustainable future by providing reliable technology for energy	PUC Rio/ Genesis	B2B B2C	2019	SDG9 SDG14 SDG5

	underwater missions	capture and asset monitoring				
Prorede3	Platform economy: marketplace for pharma industry donations	Help fight the social and economic inequality in the world, by helping the industry to donate their excess pharmaceutical inventories to poor people.	PUC Rio/ Genesis	B2B	2023	SDG3 SDG13
Gcell3D	Biotech & Deeptech	Closes the gap between industry and academic, by replacing animal tissue with biofabricated tissue created in the lab which is more sustaianable	UFRJ/ COPPE	B2B	2019	SDG3 SDG4 SDG9
…..	…..	…..	…..	…..	…..	…..

*Figure 2: The Sustainable Development Goals (SDGs) (United Nations, 2025)

Table 2: Barriers towards sustainability

Category of barrier	Identified barrier towards sustainability	Quotation of identified barrier	Company's Name
Culture	Bad Reputation (for Brazilian products)	- It's a reputation (issue)	Deco
Maturity of startups/clients	Clients acceptance low when too young	- So there us a barrier in the clients acceptance	Aquapower
Culture	Brazil cares less than Europe about sustainability	- There, people are more worried about the sustainability than we are here, okay?	Gcell3D
		- I think it's the knowledge of the people. The... How do you say this in English? Engajamento. Thank you. Thank you very much. Like, engagement or the knowledge, the people are not well educated about sustainability yet. So, it's difficult to find clients and suppliers that match the sustainable value with us.	Brecho do Carbono
Culture	Brazilian culture avoiding commitment	- because Brazilian say everything's okay but they don't want to make commitment	Eccaplan
Culture	Brazilian culture not following laws that do not work for them	- I think it's culture like in Brazil we used to say that is a law that works and law that don't works let me say use it but that the law that people use or follow and the law that people don't follow but we when we explain this to European people or American people say what I'm saying because law is law if it's law you need to you must follow and here in Brazil we say that is a law that works and that's law that don't work because people don't follow so it's culture	Eccaplan
Taxation	Brazilian taxation system hindering sustainability	- The taxes. Brazilian government tax donations heavily while incineration is tax-free. We are working on that on the project of law number 4719 slash 2020.	Prorede3

Taxation	Complex taxation system	- We have like 10, 20, 30 types of 10 different taxes. If you send to different states of the country, you pay more or pay less. It is very complex.	Brecho do Carbono
Bureaucracy	Bureaucracy hinders sustainability	- And what makes it impossible, it's bureaucracy. Brazilian bureaucracy, it's really annoying. And it makes it really difficult to develop something.	Braver
		- about the bureaucracy and innovation here has uh uh an issue that how it's it's always related to innovation or something new the bureaucracy is such a thing there is big companies yeah make for big company and people don't know	Brecho do Carbono
		- It's bureaucracy, government bureaucracy is difficult because we want to deploy it, the first prototype in Ilhas Cagarras, right? Cagarras Island. And the government bureaucracy to have the authorization for it, it's huge. It's huge.	Eletrons Livres
Client Management	Client management of wanting everything for free hinders SDGs	- clients want everything for free	Prorede3
Culture	Population does not care about sustainability in Brazil	- Like sustainability, again, I don't see as a matter of discussion in Brazil. Nobody cares about the carbon footprint or like…. But then the rest of the society don't really openly, from my point of view, give importance (to sustainability).	Aquapower
		- That is the mindset of the Brazilians	Braver
Culture	Short term mindset about costs	- Brazil(ilians) have this mindset that they are worried about the short-term cost. They don't do the math.	Braver
Economy	Economic situation hinders sustainability	- The underlying economic situation of people in Brazil because they don't have time and money to get educated. So, of course, this hinders us.	Deco

	Poverty	- You know they they understood poverty as a concept but they never felt it and they never been in a bus where they weren't sure if they're going to get robbed you know so they were disconnected about what it means to be in a in a city with poverty you know and	
Economy	High Pricing of sustainable materials still	- I think the first one is the fact that the alternative material is a little bit expensive compared with concrete.	Braver
Economy	Inflation	- With the retraction of money I think this like this is going to be a very difficult time for the people that are investing in this industry	Deco
Investment /Funding	Investment for startups difficult due to size	- the investment is very difficult to us i think about what jenny was was talking it's very hard to be a startup a startup because for some resources you are too young for others you are too old so sometimes it is confusing	Brecho do Carbono
Funding	Lack of funding barrier to sustainability	- Lack of funding - Funding	Brecho do Carbono Eletrons Livres
Legislation	Lack of legislation in specific domains to be sustainable	- (missing) Legislation is barrier - But for the textile, we don’t have yet (recycling law)	Brecho do Carbono
Violence	Violence a Brazilian problem	- Brazil is not going to get better and in a sense I’m a victim of Brazil because the violence doesn't allow me to you know to focus on what i want	Deco

Table 3: Motivations towards sustainable entrepreneurship

Category of motivation	Identified motivation towards sustainable entrepreneurship	Quotation of identified motivation	Company's Name
Micro	Personal related experiences	- I would like to dedicate my life so that Brazil can advance in my lifetime a little bit you know so for me that's the main motivation - As a Brazilian there's a there's a term here that we use which is the stray dog syndrome… the stray dog is poor and a victim… the average Brazilian is very unfortunate dissatisfied about being Brazilian… When I was 24 I was deep in my my stray dog syndrome.	Deco
Macro	Macro environment of poverty & violence acting as a catalyst for doing business	- But I ran away from the problems right like the violence etc and poverty…and then I started questioning myself on what's my responsibility towards Brazil because being outside of Brazil was personally great but at the same time I started feeling like the problems are still there I'm just able to ignore them	Deco
Meso	Microsocial environment of academic research opportunity turning into business	- My personal motivation, is to take out the science from labs, from university and go to market. Because we have, in Brazil, we have, we are like top 10 in scientific publications, but only academic…it does not turn into a product that we can sell in the market.	Brecho do Carbono
Meso	Microsocial environment of innovative tools	- And other motivation is to create new business models, applying new technologies and innovate. Because when I said about the product, we intend to create the first crypto assets based on donations. Like carbon credit. We want to create the donation credit.	Prorede3

Micro	Personal willingness for change	- Number one, motivations, the willingness to contribute to a more equal society, fight some effects of poverty, diminish the suffering of poor people is the main motivation.	Prorede3
…..	…..	…..	…..

Table 4: Stakeholders supporting the path to sustainability

Category of Stakeholders	Identified stakeholder	Quotations for identified stakeholder supporting sustainability path of University startups	Company's Name
All	Ecosystem (University, Government, Industry Private Sector)	- we are part of an environment right ecosystem yeah an ecosystem with university uh government um big companies and us and we all it's very important to us to be uh linked and in the middle of everything	Eletrons Livres
Private Sector	Mentors	- And I have a mentor of sustainability, for corporate sustainability. - Mentors, some mentors might care a little bit about and would give us ideas and shape where we want to go, but in a very little way.	Brecho do Carbono Aquapower
Private Sector	Startup Network	- It's the networking. I think it's really important and help us a lot. And me, to develop Braver and to improve Braver, it's really important to have a good networking. - And the networking with other startups. - This help us to be in the this environment or connected or opportunities. And this is when we engage it or in this.	Braver Brecho do Carbono
Incubators	Innovation acceleration programs in Brazil	- One of the stakeholders which is really helpful in the terms of SDGs or social impact or everything are the innovation programs. - They do care about sustainability. Like, they always try to give you	Aquapower

		tools to do LCA's, like cycle assessments or carbon impact or whatever.	
Government	Governmental programs	- One is named Innovativa Brasil from SEBRAE, which is a governmental authority. - Government, they do like maybe some of the programs have specific places for if you have a black founded peoples or if you have women…Only like driven or by these big corporations or government policies or programs specifically. - Then one in Brazil from the government.	Aquapower
Government	Legal entities that receive law changes	- *Are you trying to change the law?* - Yeah. And I wrote the text. - *So you wrote a new law about?* - I wrote, but I am not a jurist. I'm not legal or anything…..But, as it was, it passed on the deputy house. And now it's on the Senate. - *And what is the law about?* - To be approved. It's to... not charge taxes for donations.	Prorede3
University	Academia in the sense of Professors	- Having this incubator is a is one a great start I'm very close to the professors - Teachers…they offer you a lot of professors.. I can contact a lot of professors.. they don't come to me and say look we have these professors, and you can talk with them but as I'm inside of the university of Sao Paulo it's easier to contact these teachers	Deco Eccaplan
Government	Funding bodies	- Funding helps to be sustainable.	Brecho do Carbono
University	Academia in the sense of Knowledge	- Get access to research and knowledge	Eccaplan
Private Sector	Big Industry players	- But we want to connect with the big fashion industries, to make them pay to these catadores, to these people in the streets, to collect the textile waste that are in the streets.	Brecho do Carbono

		…connect with the stakeholders of the ecosystem.	
Government	City hall	- With the city hall, with the government to collect this (textile waste)	Brecho do Carbono
Incubators	International accelerator programs	- Then we participated in one from the German Commerce Chamber and they also helped with that (sustainability)	Aquapower
Private Sector	Partner startups	- We have a partner i say below partners..yes it's another startup who does the calculation for us,… we calculate the the social footprint is number of people the number we track that when we do that is when the JobLink website comes out that information and then we send the information to ororo and they calculate the amount donated by the product.. the composition of the product..how much would be saying emitted and then they realize the report.. - We have, like, beyond the customers who pay for the sites to be live, we have partners. Who are usually digital agencies who are implementing and making money from implementing those websites. And those digital agencies hire a lot of young people and train them and, therefore, often it's their first job. So, I would say these digital agencies are maybe the strongest partners. To enable your SDGs.	Prorede3 Deco
University	University in the sense of physical geography	- Physically (benefited) inside of the university of Sao Paulo - The space of Cietec is something that helps us a lot.	Eccaplan Brecho do Carbono
Private Sector	Media	- we must have good media partners yes and so we are building this this network	Prorede3
Private Sector	Suppliers	- I think all our suppliers and stakeholders support us in a positive way okay or helping us with our projects or developing environmental social initiatives, there is no negative (relation)	Eccaplan

Discussion

In this section the results will be discussed, connecting to existing theory. Even if we work inductively due to the novelty of the research (already mentioned in previous section), we still going to discuss our results and compare them with existing frameworks.
Specifically, we will be discussing the results under the shades of the enhanced stakeholder theory applied in sustainability management by Hörisch et al. (2014) (Hörisch, et al., 2014). Additionally, we will discuss the results through the theoretical framework presented earlier in this paper, a combination of the ETE and the stakeholder theory.
Stakeholders appear to be the solution when it comes to overcoming barriers and maintaining motivation towards sustainability.

Bibliography

Audretsch, D. B., 2014. From the entrepreneurial university to the university for the entrepreneurial society. THe Journal of Technology Transfer, Volume 39, pp. 313-321.

Cagarman, K., Fajga , K. & Kratzer , J., 2023. Capturing the Sustainable Impact of Early-stage Business Models: Introducing esSROI. Highlights of Sustainability, 2(3), pp. 171-184.

Eisenhardt, K. M. & Graebner, M. E., 2007. Theory building from cases: Opportunities and challenges.. Academy of Management Journal, 50(1), pp. 25-32.

Fischer, B. B., Marcondes de Moraes, G. H. S. & Schaeffer, P. R., 2019. Universities' institutional settings and academic entrepreneurship: Notes from a developing country. Technological Forecasting & Social Change, Volume 147, pp. 243-252.

Freeman, R. E. et al., 2010. Stakeholder Theory The State of the Art. New York : Cambridge University Press.

Gioia, D. A., Corley, K. G. & Hamilton, A. L., 2012. Seeking Qualitative Rigor in Inductive Research: Notes on the Gioia Methodology. Organizational Research Methods, 16(1), pp. 15-31.

Hall, J. K., Daneke, G. A. & Lenox, M. J., 2010. Sustainable development and entrepreneurship: Past contributions and future directions. Journal of Business Venturing, Volume 25, pp. 439-448.

Henrich, J., Heine, S. J. & Norenzayan, A., 2010. The weirdest people in the world?. Behavioral and Brain Sciences , Volume 33, pp. 61-135.

Hörisch, J., Freeman, R. E. & Schaltegger, S., 2014. Applying Stakeholder Theory in Sustainability Management: Links, Similarities, Dissimilarities, and a Conceptual Framework. Organisation & Environment , 27(4), pp. 328-346.

Lawrence, P. R. & Lorsch, J. W., 1967. Differentiation and Integration in Complex Organizations. Administrative Science Quarterly, pp. 1-47.

Naffziger, D. W., Hornsby, J. S. & Kuratko, D. F., 1994. A proposed research model of entrepreneurial motivation. Entrepreneurship Theory and Practice , 18(3), pp. 29-42.

Piwowar-Sulej, K. & Kwil, I., 2018. PRZEDSIĘBIORCZOŚĆ, PRZEDSIĘBIORCZOŚĆ AKADEMICKA I TECHNOLOGICZNA, INNOWACYJNOŚĆ — PRÓBA SYSTEMATYZACJI. Przegląd Organizacji, 7(942), pp. 18-24.

Qian, X.-D., Xia, J., Liu, W. & Tsai, S.-B., 2018. An Empirical Study on Sustainable Innovation Academic Entrepreneurship Process Model. Sustainability, 10(1074).

Rashid, L., 2023. An eclectic analysis of entrepreneurship motivation in conflict and refuge: the Syrian context. International Journal of Entrepreneurship and Small Business , 48(3), pp. 245-272.

Saldaña, J., 2021. The Coding Manual for Qualitative Researchers. 4th ed. London: Sage.
Sieg, P., Posadzińska, I. & Józwiak, M., 2023. Academic entrepreneurship as a source of innovation for sustainable development. Technological Forecasting & Social Change, p. 13.

Siegel, D. S. & Wright, M., 2015. Academic Entrepreneurship: Time for a Rethink?. British Journal of Management, 26(4), pp. 582-595.

United Nations, 2025. The 17 goals. [Online] Available at: https://sdgs.un.org/goals [Accessed 9 May 2025].

Verheul, I., Wennekers, S., Audretsch, D. & Thurik, R., 2001. An Eclectic Theory of Entrepreneurship, Amsterdam and Rotterdam: Tinbergen Institute, Discussion Paper TI 2001-030/3.

Wagner, J. & Sternberg, R., 2004. Start-up activities, individual characteristics, and the regional milieu: lessons for entrepreneurship support policies from German micro data. The Annals of Regional Science, 38(2), pp. 219-240.

WCED:, T. W. C. o. E. a., 1987. Our Common Future, New York: Oxford University Press.

Yin, R. K., 2003. Case Study Research: Design and Methods. 3rd ed. Thousand Oaks, California: Sage Publications.

Appendix:

Interview Guideline

1. What is the **name** of your university startup, when did your startup got created, are you still incubated, and when do you plan to graduate? How did you enter the University incubator, what is the story behind?

2. What is the **purpose** of your startup's existence?
   - What is the **purpose** your startup serves?
   - What is its **mission & vision**? The problem you solve?
   - What are your startups main **motivations**?
     - How are your startup's main **motivations shaped**? Can you name the motivations and what shapes them?
   - What are your start-ups main **priorities**?
     - How are your startup's main **priorities** shaped? Can please name the priorities and what shapes them?

3. What is your **business model value proposition**?
   a. What **value** is embedded in the product/service offered by your startup?
   b. How do you **communicate** your value proposition to your customers?
   c. What is your **business model** in terms of client segment? Example B2B, B2C or B2G (Business to Government).

4. How do you understand the concept of **sustainability**?
   a. How does your startup **contribute** effectively to the welfare of current and future generations by protecting and enhancing the biosphere's resilience, social equity and cohesion and economic prosperity?
   b. Does your startup have a **strategy** connected to sustainability?
      i. If yes, can you please **explain** it in your own words?
      ii. If yes, can you please explain how your sustainability strategy affects your **stakeholders** (customers, employees, suppliers, local population)?
      iii. Can you give me some examples, please?

5. What is the **responsibility** of your startup in terms of the society and the environment?
   a. Are you familiar with the triple bottom line?
      i. If yes, how is your startup considering the 3Ps: People, Planet, Profit?
      ii. Can you please explain the actions and strategies you undertake in this regard?

6. Do you feel any **pressure** for your company to be sustainability-oriented? Which are the central pressures, and where do they come from?

7. Can you please name to which **Sustainable Development Goals** does your start-up contribute **directly and indirectly, positively and negatively**? Here you can

find the list of the 17 SDGs: No poverty (SDG 1), Zero hunger (SDG 2), Good health and well-being (SDG 3), Quality education (SDG 4), Gender equality (SDG 5), Clean water and sanitation (SDG 6), Affordable and clean energy (SDG 7), Decent work and economic growth (SDG 8), Industry, innovation and infrastructure (SDG 9), Reduced inequalities (SDG 10), Sustainable cities and communities (SDG 11), Responsible consumption and production (SDG 12), Climate action (SDG 13), Life below water (SDG 14), Life on land (SDG 15), Peace, justice, and strong institutions (SDG 16) and Partnerships for the goals (SDG 17).
    a. Would you prioritize three of them and bring them into an order from the most important to the least important?
    b. In your startup, which processes or goods/services create conditions that enable the achievement of an SDG?
    c. In your startup, which processes or goods/services limit options or makes it impossible to achieve an SDG?

8. How do you **engage your stakeholders** in your SDGs setting? (stakeholders and SDGs how do they connect?)
    a. Which value chain partners and which societal organizations can advance your SDG portfolio?

9. How can **produced goods and services** advance your SDG portfolio? (ESG mentions for Brazil case)
    a. How do your operations affect the SDGs? For example, think of your institutional framework and governance structure, your business model, gender equality, offering decent jobs, equal opportunities, ethical equality and more.

10. What are the **negative** economic, social, ecological, and environmental effects of your company? How do you record and mitigate them?
    a. Which are the main **barriers** (internal and external) for your company to achieve impact on an economic, social and/or environmental way?
    b. Please describe your company's **main costs** to achieve economic, social and/or environmental impact.

11. How is the **University** your startup came from supporting you to achieve economic, social and environmental impact?
    a. Which are the main contributions from the University?

12. What are the main **resources and competencies** (or capacilities) in your startup /team regarding sustainability and impact on an economic, social and environmental way?
    a. How does the startup **promote** learning to develop such competencies?
    b. Which competencies are important but your startup/team **lacks**?

13. What role do your **stakeholders** play in achieving sustainability impact? Both positive and negative.
    a. What about your **partners** such as suppliers, University, labs, consulting firms, agencies, community etc., how do they contribute to your startup achieving impact an economic, social and environmental level?

i. Please describe how these partners help your Start-up individually and as an ecosystem in achieving your SDGs.

14. How do you **measure and track** your company's economic, social, and ecological/ environmental footprint?
    a. Please describe the main **processes** that make your company achieve economic, social and/or environmental impact?
    b. Which **KPIs** do you use to measure this? For economic, social & ecological control.

15. Is your product/service **innovative**? Do you have a **Patent**(s)?
16. Can I use the **name** of your startup, or you want to remain anonymous?
17. Would you like me to send you the **paper** after is done?