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Enabling factors for the development of sustainable business models in a support programme

Sofia Lamperti¹, Sylvie Sammut², Jean-Marie Courrent³

¹ PhD student at Université de Montpellier

² Professor at Université de Montpellier

³ Professor at Université de Montpellier

Abbreviations

SBM	Sustainable Business Model
RBV	Resource-Based View

Abstract

Start-ups are important tools for promoting sustainable development through the creation of new ventures with a sustainable business model. However, to make a tangible contribution, start-ups need to embed and balance their sustainability impact in their business model from the very beginning. Incubators are a promising way to support them in this process. Despite the academic interest in incubators, few studies have focused on sustainable incubators in general, and even less on the sustainable business model development process. This study explores how a support programme delivered by an incubator with a sustainability profile can affect the sustainable business model development of start-ups. A case study approach based on a French incubator was used in combination with the resource-based view to understand the creation process of sustainability-oriented ventures and the resource needs of start-ups to achieve a sustainable impact. The results show that besides the classic support services for the development of a sustainable business model, there are additional interesting factors that come into play.

1 Introduction

Start-ups are important vehicles to foster sustainable development through the creation of new firms with a sustainable business model (SBM) (Leendertse, van Rijnsoever and Eveleens, 2020; Tiba, van Rijnsoever and Hekkert, 2020, 2021). However, start-ups are characterized by newness, volatility, and resource scarcity (Shepherd and Patzelt, 2011; Picken, 2017; Skala, 2019), which can lead them to failure (Hackett and Dilts, 2004).

In response to these challenges, public and private support organizations have been established to facilitate entrepreneurial activity (Bank & Kanda, 2016). Among these bodies, incubators – organizations that supply several services and support to early-stage ventures (Bergek & Norrman, 2008) including sometimes offerings with a sustainability orientation (Bank & Kanda, 2016; Fonseca & Chiappetta Jabbour, 2012) – demonstrate to have the potential of overcoming weak network problems in the entrepreneurial ecosystem (van Rijnsoever, 2020), helping to connect start-ups with key stakeholders, knowledge, and networking opportunities (C. Eveleens, 2019; C. P. Eveleens et al., 2017). Nevertheless, incubators only have a potential role for reaching this goal if they are successful in providing the necessary support to start-ups. This is even more significant in case of sustainable business model, as research on sustainable entrepreneurship shows that the recognition and implementation of sustainable development opportunities, i.e. “opportunities that sustain the natural and/or communal environment as well as provide development gain for others” (Shepherd, Patzelt and Shepherd, 2011, p. 632), is more complex than the recognition of non-sustainable ones (Shepherd, Patzelt and Shepherd, 2011). Accordingly, it can be supposed that entrepreneurs generating, recognizing and taking advantage of sustainable opportunities demand a special support for developing successful innovations and entrepreneurial activities within an ecosystem (Kanda *et al.*, 2018).

Despite the admitted interest of academics in incubators (e.g., Gassmann and Becker, 2006; McAdam and McAdam, 2008; Somsuk, Wonglimpiyarat and Laosirihongthong, 2012; van Weele, van Rijnsoever and Nauta, 2017), few studies have focused on sustainable incubators despite its complexity (Frenken, 2017) .

This study wants to investigate on *how a support programme of a sustainability-profiled incubator may affect the SBM development of tenants*. This theme urges examination considering the necessity of entrepreneurs who act as catalyst to socioeconomic transformations towards sustainability (Parrish, 2010; Volkmann *et al.*, 2019), and of new ventures that participate to the economic recovery after the pandemic crisis.

A logical model is developed to explain the connection between incubation activities and sustainability impact of start-ups. Besides, the resource-based view (RBV) theory is used as a lens of analysis to investigate the services offered by the selected incubator in the support programme and the consequent outcome on the supported start-ups.

2 Literature review and conceptual considerations

2.1 Sustainable Business Model

The concept of business model can provide a conceptual link between the sustainable innovation of the firm and the higher system level (Boons et al., 2013). In a definition, a business model for sustainability or an SBM¹ “helps describing, analysing, managing, and communicating (i) a company’s sustainable value proposition to its customers, and all other stakeholders, (ii) how it creates and delivers this value, and (iii) how it captures economic value while maintaining or regenerating natural, social, and economic capital beyond its organizational boundaries” (Schaltegger, Hansen and Lüdeke-Freund, 2016, p. 268).

Compared to a traditional business model, an SBM requires considering all stakeholders, of whom society and environment become the most important ones, as it is desired that a shared value is created and maintained in the system, which is difficult to obtain in reality (Porter and Kramer, 2011).

2.2 Business Incubators and Resource-Based View

Incubators are a fundamental part of the current entrepreneurial ecosystem, supporting the creation and development of new ventures based on a broad spectrum of methods. Based on a systematic literature review, Hausberg and Korreck (2018) developed the following definition, which we will build on in this study: “Business Incubators [...] are business-incubating organizations that support the establishment and growth of new businesses with tangible (e.g. space, shared equipment and administrative services) and intangible (e.g. knowledge, network access) resources during a flexible period” (Hausberg and Korreck, 2018, p.13). From the definition the concept of incubator is strictly related to the provision of resources. Indeed, from a RBV perspective (Penrose, 1959; Barney, 1991; Grant, 1991), incubators are seen as the providers of a resource-rich environment that enables start-ups to face their liabilities of being young and small by complementing their resource base (McAdam and McAdam, 2008). Table 1, which we collected from the literature, provides an overview of the most important resources start-ups need to survive and the relative incubators support to fulfil this demand.

¹ A sustainable business model and a business model for sustainability are used interchangeably in this study.

Table 1 – Resource needs and incubator support, adapted from van Weele, van Rijnsoever and Nauta, (2017).

Resource needs	Incubator support to fulfill the needs
Physical capital	<input type="checkbox"/> Office space <input type="checkbox"/> Shared infrastructure of facilities
Financial capital	<input type="checkbox"/> Seed capital in exchange for equity <input type="checkbox"/> Access to investors
Knowledge	<input type="checkbox"/> Provide technological knowledge <input type="checkbox"/> Provide business knowledge through coaching and trainings
Social capital	<input type="checkbox"/> Facilitate the creation of external networks by organizing events, creating partnerships and making introductions <input type="checkbox"/> Facilitate the creation of a community through co-location social events and introductions
Legitimacy	<input type="checkbox"/> Association with an established incubator

2.3 Theory of Change

Given the key role of business incubators in providing start-ups with the enabling factors and resources to develop their business model (Bank et al., 2017; van Weele et al., 2017), our analysis draws on a logical model to evaluate the role of a support programme in the development of a SBM. Notably, a logical model like the *theory of change* (Serrat, 2017), by taking a narrative perspective, assumes a linear causality between inputs, activities, outputs, outcomes, and impacts. The review of the intertwined literatures led us to design the conceptual framework outlined in Figure 1. This framework includes four main components: (i) the basis of the research and unit of analysis are SBM development; (ii) the RBV helps us identify in this process the resource needs of start-ups' SBM and the related incubator's enabling factors to meet these needs; (iii) the theory of change helps us generalize the SBM development process into a logical model from inputs to impacts by connecting the main points of our investigation: the support programme and the creation of start-ups with an impact and (iv) the unit of analysis shows that by covering the entire process from inputs to impacts, we cover two other units of analysis: inputs to outputs occur in the boundaries of the incubator, while outcomes and impacts deal with sustainability-oriented start-ups.

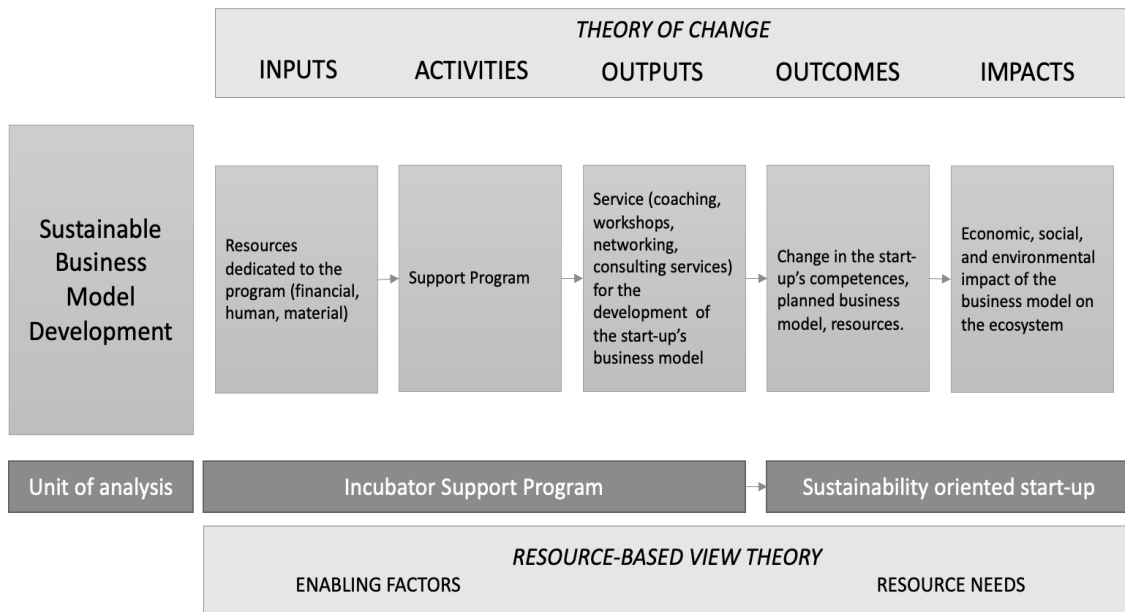


Figure 1 Conceptual framework for investigating the connection between incubation activities and the start-ups' sustainability impact (based on Wagner et al., 2019).

3 Methodology

Given the exploratory character of this investigation and the research question, we chose a qualitative research approach and conducted a case study in order to gain an in-depth understanding (Miles et al., 2000; Yin, 2012) of the connection between incubation activities and the start-ups' sustainability impact. It is worth noting that this methodological procedure is common in social science and entrepreneurship and has already been used for exploratory research in the same domain (e.g., Bank, Fichter and Klofsten, 2017). We decided to focus our attention on a single case as it allows us to investigate the phenomenon of an SBM development at various levels without being constrained by preliminary decisions regarding data type or tools (Chiambaretto et al., 2019). To this end, we selected Incubator-1, an incubator operating in the region of Montpellier, which we could easily access for the interviews and for the participation to several events, thereby generating valuable complementary data. It was formed in 2007 on signing a partnership between the Region, the European regional development fund, a public financial institution, and several major stakeholders. First in France, Incubator-1 is nowadays the leader of a network made up of five sustainability-profiled incubators in three other regions. The incubator is experienced in the support of sustainability-oriented projects, namely projects whose economic success aims at benefitting the environment and society, and whose innovation serves the collective interest.

Data collection was performed on the analysis of primary data and secondary data. For the primary data, semi-structured interviews were held from March to July 2021. In total, twelve semi-structured interviews were conducted (cf. Table 2 for details). Secondary data were obtained from various sources, including internal documents (such as presentations, framework, and reports) and external documents (such as news articles and regional reports). To analyse the data, an iterative process between literature and data was carried out, as suggested by Eisenhardt (1989). We started with concepts from the literature that we found informative for the case study focus (e.g., theory of change). We then collected descriptions from the single case, from which a common understanding of deductive and emerging categories was developed through discussions among researchers. Then, a more inductive stage of coding was undertaken to disclose the phenomena investigated.

Table 2- Description of the interviewees

Function	Short description	Overall duration of the interviews
Manager	Degree in finance and marketing. Head of Incubator-Fra. Responsible for supporting innovative projects and accelerating companies with potential.	150 min
Innovation Manager	Degree in economics. Responsible of the internal trainings and coaching techniques.	87 min
Consultant 1	PhD in management. Strategy and digital marketing consultant.	30 min
Consultant 2	PhD in macro-economics. Social innovation, strategy, and financing of social enterprises consultant.	45 min
Start-up 1	It offers eco-responsible surfboards 3D printed made of plastic waste. It does not use using toxic products in the process of creation.	30 min
Start-up 2	It offers a housekeeping service with only ecological cleaning products.	25 min
Start-up 3	It fosters the collection, reuse, and recycling of sports equipment and raises awareness of the need to preserve biodiversity at sports locations.	30 min

4 Results from the case study

4.1 SBM development at Incubator-1

To access the support programme, the start-up needs to pass a selection process, where the project is evaluated in terms of sustainability impact and economic feasibility by a mixed jury of experts and investors. It is important that the sustainable innovation can be translated into a business model, which has the objective of serving the collective interest.

The next phase is the incubation phase, which lasts 14-18 months and it is done in the incubator's office space. Here, the start-ups can access to the building's facilities and organize

meetings to work on the SBM development. For the definition of the economic model, workshops and seminars are offered by the incubator or by external partners on strategy, marketing, sales techniques, digital strategy, and fundamentals of law for business creation. Simultaneously, tenants participate to training on collective intelligence, sustainable innovation, to keep reasoning in collective interest terms and better describe and identify the social and environmental needs they want to solve through their business. Moreover, the incubator guides the projects in the identification of all the different stakeholders and describes how and to what extent they are involved and touched by the new business. This is a central phase to describe the kind of relationship between the start-up and its stakeholders. It is important not only to identify the consumers and the partners, but also the actors whose interest is affected positively or negatively by the creation of the enterprise. In this regard, some practical tools have been developed by the incubator to help the tenants picture their business model during its definition, including a workshop for the SBM components visualization that is an adaptation of the Triple Layered Business Model Canvas (Joyce and Paquin, 2016), as it considers not only the economic aspect of the business, but also the social and environmental layers. This way, the start-up is guided to define how the business intends to deliver the value to the parts involved.

Once the SBM is defined, it is time for validation. In this process, tenants are driven to calculate the measure of certain indicators and develop propositions, which they use to effectively attest the viability and balance of their SBM and to make decisions accordingly. Two classes of indicators exist, namely, (i) the Social Key Performance Indicators (SKIPs), which can be both social and environmental indicators, as for instance the social return on investment, the well-being among collaborators and employees, and the number of tons of water and CO₂ saved, and (ii) the Economic Key Performance Indicators (EKPIs), such as the return on investment and process indicators. Admittedly, considering the start-up's age, these indicators are not based on past data, but rather, on the potential performance that the SBM would have.

The social and environmental impact is eventually embedded in the start-up business plan to find a fair balance between economic performance and the social and environmental dimension.

4.2 Outcomes and impacts of the process

Through the programme, start-ups can define and test their SBM, while attracting investors. More importantly, in this process they acquire new competences and knowledge related to

business, social, and environmental domains, while accessing opportunities and networks of partners and collaborators. Besides, thanks to the workshop on assessing their performance, start-ups are encouraged to collect data since their formulation, thereby creating a useful historical base for future impact assessment, which helps them in decision-making.

Undoubtedly, through the creation of sustainability-oriented start-ups with this mindset and business model, there are contributions at the societal level to sustainable development along the three dimensions of economic, social, and environmental value creation. Every year, Incubator-1 supports 12-14 projects and has led to the creation of 75 enterprises combining a social and/or environmental purpose with a viable business model.

5 Discussion and conclusion

5.1 Contribution to theory

Start-up with a SBM resource needs

As mentioned, it is important for start-ups to find the resources and connections they need during the development of the idea and commercialization, if they want to reach the market and have an impact. In fact, in contrast with established organizations, the resource base of start-ups is incomplete and still developing (van Weele et al., 2017). Start-ups need tangible and intangible resources to build on their competitive advantage and their business model. Specifically, in case of a SBM, studies in the literature review showed that there is a special need for creating and maintaining a shared value among the different stakeholders. Indeed, a SBM integrates a multilevel perspective that include a wider range of stakeholders and having a balanced impact in this system gives the start-ups a more stable and lasting competitive advantage (Porter & Kramer, 2011).

Incubator enabling factors for SBM

From the literature analysis and the case study, a special need for a balanced sustainability impact in sustainability-oriented start-ups has been identified. Building on the case study conducted in Incubator 1, we can identify the subsequent resource base of incubators if they want to cope with such a need and support these projects successfully. Albeit not exhaustive, this resource base outlines some important dynamics and factors that influence the degree to which start-ups create sustainability impact, answering this way the research questions too.

For instance, during the support programme, tenants discuss about sustainable innovation, as concept clarity helps tenants better understand and develop their project, identifying the social and environmental needs they intend to solve and the way the project is intended to be

addressed. In a dedicated workshop, tenants are invited to map and manage the interested stakeholders, which are considered as part of the business, describing the political, financial, and human interactions among the different parties. In order to ensure that all stakeholders are considered, start-ups are asked also to compile a visualization framework that the incubator has developed, which is reminiscent of the triple layered business model canvas (Joyce & Paquin, 2016). This framework assures that not only the economic aspect, but also the social and environmental sides of the business are considered and discussed, helping to gain a systemic view on SBM development (N. Bocken et al., 2019). All these practices generate dynamics for the better identification and management of stakeholders, which is at the base of a sustainable business model with a shared value (Lüdeke-Freund & Dembek, 2017). Besides, tenants are encouraged to measure and assess their potential impact, considering the economic, social, and environmental effects. The assessment of sustainability impact potential is particularly relevant to sustainability-oriented start-ups, as they can identify, evaluate, and reformulate their business model since its ideation, in order to make sure that a sustainability impact is achieved (N. Bocken et al., 2019). The incubator is an environment where start-ups learn how to identify gaps in their resource base and develop the capabilities to autonomously acquire or develop these resources, which would provide start-ups with a competitive advantage lasting beyond the incubation period (van Weele et al., 2017).

Finally, together with the provision of these oriented services, there is an additional factor that comes into play, namely the adaptation of all the other services to the start-up's values and visions. Therefore, not only the business knowledge, but also the social and environmental knowledge is provided through coaching and training. Again, different forms of company management are considered, which emerge from collective intelligence.

In conclusion, based on Table 1, outlined in Table 4 is this contribution for the support of sustainability-oriented start-ups.

Table 4- Sustainability-oriented start-up's resource needs and incubator support.

Resource needs	Incubator support to fulfill the needs
Physical capital	<input type="checkbox"/> Office space <input type="checkbox"/> Shared infrastructure of facilities
Financial capital	<input type="checkbox"/> Seed capital in exchange for equity <input type="checkbox"/> Access to investors <input type="checkbox"/> Provide access to participatory financing form of investment
Knowledge	<input type="checkbox"/> Provide specific knowledge <input type="checkbox"/> Provide business, social, and environmental knowledge through coaching and training
Social capital	<input type="checkbox"/> Facilitate the creation of external networks by organizing events, creating partnerships, and making introductions <input type="checkbox"/> Facilitate the creation of a community through co-located social events and introductions
Legitimacy	<input type="checkbox"/> Association with an established and sustainability-profiled incubator
Balanced sustainability impact	<input type="checkbox"/> Facilitate stakeholder management through dedicated workshops <input type="checkbox"/> Initiate start-ups into impact assessment <input type="checkbox"/> Discuss on sustainable innovation

5.2 *Contribution to practice*

The study has practical consequences too. First, we encourage sustainability-profiled incubators to provide an adequate support for facilitating start-ups in obtaining a balanced sustainability impact. Incubators may start offering the services we identified or provide similar offerings having the same goal of satisfying the need for a balanced sustainability impact. This contributes to the building of the incubator's resource base and competitive advantage, as the provision of certain services influence the success of start-ups, thereby the incubator's success, too. The provision of services for sustainability-oriented start-ups' support could become a kind of differentiation strategy, which is not negligible considering the number of players in the industry (Vanderstraeten & Matthyssens, 2012) and the societal need for sustainable solutions (Volkman et al., 2019).

Second, even for sustainability-oriented entrepreneurs, it becomes important to find a support system that is in line with their mission, which provides the resources they need for a balanced sustainability impact, if they want to maximise their probability of success and accomplish their objectives.

Moreover, our study has also some implications on policy makers. Clearly, a focus on sustainability in support programmes can play an important role in fostering sustainable development through the creation of sustainability-oriented start-ups with a sustainability impact embedded in the business model since its definition.

5.3 Limitations and future research

Still, this study is not free from limitations. These depend mostly on the limit of the sample size to a single unit, which could restrict the generalization and relevance of the findings, and on the observer influence typical of qualitative studies, which could bring to the loss of valuable insights and considerations. This points to the need for additional practical studies, to discuss the topic and possibly confirming (even enriching) the results outlined in this study.

Finally, this study calls for the investigation on the support programmes of incubators and other support systems, to understand if the offering of the services outlined is typical and proper of incubators specifically oriented to sustainability or it can be integrated into the resource base of general support programmes, which could have a relevant effect on sustainable development and progress.

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