

A Framework for Social Business Models Analyses

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Abstract: Social entrepreneurial initiatives (SEI) answer problems and needs that otherwise would remain unattended. Therefore, they provide high collective interest social value achieved by a stable, reliable, and sustainable operation. Because the economic goal is a means to accomplish the social aim, it is hard to overcome resource constraints. SEIs must prove innovation and efficiency to access funding. However, the investment criteria are usually circumstantial or abstract. Additionally, the theory lacks the recommendation to enlighten how to increase the chances to be funded. The literature does not offer consensual, consistent, empirically tested criteria to compare business models. To help address these issues, this paper provides a Delphi analysis of a social business model taxonomy. The following criteria selected interviews from a broad study: 1) have qualitative and quantitative data recorded; 2) represent different SEIs' types in the taxonomy. Then, four invited scholars blindly reviewed the data. They are experts in social innovation, entrepreneurship, sustainability, and social psychology. Online meetings helped to solve doubts and build synthesis. All Delphi participants described their opinion about the taxonomy fit by e-mail. Results were also compared by previous statistical classification. The Delphi process happened from December 2020 to June 2021. The similarity between statistical and analytical results indicated that the taxonomy is an efficient tool to identify and compare elements of the social business model. The study made the taxonomy easier and more replicable, providing an analytical framework. Evidence can help social agents and investors to frame information and achieve better decision-making.

Keywords: social business models, PIM model, investment criteria, taxonomy, social initiatives classification

1. Introduction

Society faces multidimensional challenges while struggles to build a safe and sustainable path (Rockström and al, 2021). Problems increase faster than solutions, and traditional ways seems to fail in providing reliefs (Tate and Bals, 2018). Additionally, estimates points to a sustainable business potential worth at least US\$ 12 trillion yearly until 2030. Since 2015, the United Nations have been fostering commitment to Sustainable Development Goals (SDGs) that work like parameter for best practices and impact assessment. However, they are hard to assess (Claro and Esteves, 2021).

Social entrepreneurship is a popular umbrella concept to initiatives that aim at sustainable development (Hossain *et al.*, 2017, Koehne *et al.*, 2022). It shows in the form of organizations, businesses, or projects whereby economic goals serve social ones. Social entrepreneurial initiatives (SEI) provide high collective interest social value achieved by a stable, reliable, and sustainable operation (Ciccarino *et al.*, 2019, European-Commission, 2016). However, social entrepreneurial literature does not offer consensual, consistent, empirically tested measures, nor criteria to compare its initiatives (Rawhouser *et al.*, 2019, Austin *et al.*, 2006). In general, the classifications available are conceptual and lack empirical testing (Rawhouser *et al.*, 2019, Barki *et al.*, 2020). And traditional analyses do not fit in with this type of entrepreneurship since its operations and strategies are different (European-Commission, 2016, Ciccarino, 2021, Shaw and de Bruin, 2013).

There is a shortage of practical tools and techniques supported by the social entrepreneurial literature, which can mediate the relationship between investors and entrepreneurs. SEIs must be able to prove their business model innovation and sustainability to mobilize resources. However, neither entrepreneurs nor investors have reliable parameters based on theoretical consensus to support practice and decision-making (European-Commission, 2016, Ciccarino, 2021, Ciccarino *et al.*, 2019). This study describes four cases that fit a recently developed taxonomy PIM Model (Ciccarino, 2021), highlighting social managers narratives. Therefore, the paper provides contextualized evidence by a non-reductionist outlook (Dess and Davis, 1984).

Taxonomy is a tested and statistical validated way to represent the complexity of factors that happen simultaneously (Venkatraman and Prescott, 1990). The process of building it, reduces a vast array of possible combinations to a manageable set (Hambrick, 1980). PIM models distinguish and classify SEIs by significant differences in their business model factors and in their access to funding. PIM's three types are mutually exclusive, and each type's features (i.e., factors) can serve as a guideline to assess frailties and strengths in a

business model. This enables a better understanding between social agents and investors (Ciccarino, 2021, Venkatraman and Prescott, 1990) helping to find the best viable option for a social problems' treatment (Hossain et al., 2017, Seelos and Mair, 2005).

This research aims to analytically examine PIM Model (Ciccarino, 2021), comparing qualitative and statistical classifications to test its usefulness. Insights from the analyses can help to improve the PIM model and expand the ways of using it in further studies (Remenyi *et al.*, 1998, Ghauri, 2004, Tapio, 2002). It can make the taxonomy easier and more replicable, providing an analytical framework to help social agents, investors and scholars to frame information and achieve better decision-making (European-Commission, 2016, Humbrick, 1980).

2. Theoretical foundations

2.1 The challenge of systematizing knowledge

Social and traditional business models are similar in some market features, such as products and services creation and offers, customer and people management, and being a financially sustainable operation. However, the main difference of a social business is its core business, its purpose (Austin *et al.*, 2006). Social initiatives aim to offer society a solution to local demand that the government or other available structures cannot or do not mean to answer (Barki *et al.*, 2020, Mair *et al.*, 2012). The result is a substantial improvement in the living conditions, especially for the most vulnerable people. This provides new opportunities for access to products and services, in addition to employment and income creation (Seelos and Mair, 2005, Christensen *et al.*, 2019).

Social problems' alleviation is currently a central subject in business and public policies (Sachs *et al.*, 2021, Claro and Esteves, 2021) demanding collaborative and multidimensional solutions (Sachs *et al.*, 2021, Rockström and al, 2021). The resulting innovation is a combination of scarce resources in the generation of useful, accessible, and commercially desirable products and services (Kickul *et al.*, 2018, Seelos and Mair, 2005). However, if the initiative does not consider local idiosyncrasies the solutions can fall short, even worsening the situation. Only innovation and investment are not enough (Koehne *et al.*, 2022, Christensen *et al.*, 2019). That is why ways to enable the collaboration between investors and social initiatives became so important (Ciccarino *et al.*, 2019, Ciccarino, 2021).

Social entrepreneurship stands out as epistemology concerning social impact and sustainable development (Hossain *et al.*, 2017, Koehne *et al.*, 2022). The problem is that theory is still in a pre-paradigmatic stage (Hossain *et al.*, 2017) turning difficult properly identifying and comparing SEI (Rawhouser *et al.*, 2019, Austin *et al.*, 2006). Typologies and taxonomies aim at classification and comparison (Venkatraman and Prescott, 1990, Erpf *et al.*, 2019), but they are overlooked in social entrepreneurial research field. They are still conceptual, lacking empirical testing (Rawhouser *et al.*, 2019, Barki *et al.*, 2020). Without a structured way to systematize information, it is hard to accumulate knowledge, slowing theoretical advance. Additionally, without theoretical guidance, practice became less effective (European-Commission, 2016, Venkatraman and Ramanujam, 1986, Lee *et al.*, 2014). The shortage of practical tools and techniques supported by the social entrepreneurial literature increases complexity and subjectivity in the relationship between investors and social initiatives (European-Commission, 2016, Ciccarino, 2021, Ciccarino *et al.*, 2019) endangering or delaying social impact (Tate and Bals, 2018).

As far as we know, the only taxonomies in the social entrepreneurial research field that test hypotheses are those of Mair *et al.* (2012), Erpf *et al.* (2019) and Ciccarino (2021). The latter explicitly defines the unit of analysis and selection criteria, offering a structure for its replication (Venkatraman and Prescott, 1990, Venkatraman and Ramanujam, 1986, Lee *et al.*, 2014).

2.2 PIM model for social entrepreneurial classification

The PIM model (Ciccarino, 2021) applies Porter's generic strategies (Porter, 1980) logic in social initiatives, as Zott and Amit (2007) have done before for entrepreneurial business models. Taxonomy is a structuration of patterns in an organizational concept (Venkatraman and Prescott, 1990), such as a business model (Teece, 2010). The focus on creating social value is a common point for some classifications of social entrepreneurship initiatives (Zahra *et al.*, 2009, Mair *et al.*, 2012) aligning them with the centrality of the theme on the business model (Osterwalder and Pigneur, 2011). Business models are ways to describe organizational architectures. They

explain the processes of creating and capturing value, in addition to highlighting strategic goals. Being constant and difficult to change, business models are more generic than strategies (Teece, 2010).

The PIM model relies on Osterwalder and Pigneur (2011) business model framework. It classifies SEI by assessing their differences in business model features such as 1) Innovative Value Proposition; 2) Innovation Capacity; 3) Resources Efficiency, and 4) Access to funding in the ecosystem (Ciccarino, 2021). Figure 1 structures PIM's for qualitative data collection.

B M	Factor	Variables	Question
Backstage	Access to funding in the ecosystem	Bank Support	What is your opinion on the level of access of the social initiative to the following resources?
		Access to credit	
		Private investment	
	Resources efficiency	Task allocation	To what extent is the number of employees or volunteers suitable for the volume of tasks?
		HR allocation (time)	To what extent is the time available for employees or volunteers to perform tasks properly suitable?
	Innovation Capacity	Learning Capacity	How does the social initiative encourage innovation? Does it more concerned with avoiding mistakes? Or does it encourage bold actions, even realizing failure risk? Why?
Flexibility		How is social initiative structured? Does it emphasize command and control structures to promote productivity? Or does it emphasize flexibility to generate agile responses? To what extent does it encourage collaboration and creativity?	
Absorption capacity		How does the social initiative assimilate new processes or ways of work?	
Frontstage	Innovative Value Proposition	Process innovation	How does social innovation happen in the social initiative? Innovation type of innovation: Radical, incremental (adaptations, improvements) Frequency.
		knowledge Innovation	
		Services Innovation	

Source: Adapted from Ciccarino (2021, p.40)

Figure 1: Qualitative data collection framework

Types are bunches of features, mutually exclusive and internally homogeneous, that must allow classification and comparison. The classification in a type shall be stable and relevant (Humbrick, 1980, Carneiro *et al.*, 1991). PIM is an acronym for *Persistent, Innovative, and stuck in the Middle*. Statistically, a SEI can be Innovative or Persistent. When the classification is not possible, it is '*stuck in the middle*' (Ciccarino, 2021). This taxonomy is in line with the business model analysis of Zott and Amit (2007) and with Porter's generic strategies (1980). The business model steers the resources and the capabilities building (Teece, 2010) Efficiency-driven business models need an exploitation strategy and innovation-driven ones an exploration strategy. Moreover, it is difficult to balance cost-cutting decisions with risk-taken ones. Hence, mixing both tends not to be a big deal (Zott and Amit, 2007).

The innovative SEI can deal with the worst or the most neglected social problems. This allows mobilizing different stakeholders to sustain effective social change or to scale up. Hence, the solution can be riskier and more expensive. Because social entrepreneurship is bound to innovation "*If nothing changes, the increase of one unit in each predictor also increases the chance of SEI being an Innovative one*" (Ciccarino, 2021: 30). Persistent SEI are geared towards efficiency and survival. They have fewer resources, innovation capacity, and access to funding in the ecosystem than the others. Despite that, Persistent SEI can deal with hard social problems with innovation regarding risk and cost reduction. In other words: "*Persistent SEI innovate and serve beneficiaries to the extent of their installed capacity. Finally, the Stuck in the Middle SEI do less, using more installed capacity*" (Ciccarino, 2021, p. 31).

In this sense, PIM model classify SEI and comparatively identify their strengths and weaknesses. Hence, it helps investor or supporter to prioritize features like scale, risk, and degree of social change (Zahra *et al.*, 2009) and enables a better strategic choice (Zott and Amit, 2007). PIM answer the claim for tools that make this relationship easier, fair, and efficient (European-Commission, 2016).

“(…) it is unlikely that an investor will want to invest more resources in a SEI that already has it, but whose structure is less effective. Unfortunately, this logic is contradicted by common sense, which tends to seek apparently sustainable organizations, with partnerships already established and good access to resources. Thus, social investment does not go where there is more and better innovation, it goes where there is more capacity installed. The PIM model helps to correct this trend with an accuracy of 82.9%.” (Ciccarino, 2021: 28)

Figure 2 summarizes the PIM model, offering the analytical guideline used to classify the social business models.

Factors	Persistent SEI	Stuck in the middle SEI	Innovative SEI
Social value creation summary	Do more with few resources. It is the effective one.	Do well using more resources than anyone.	Do best, with more resources and the boldest innovation.
Business model	Efficiency-driven resource use	Inefficient resource use	Innovation-driven resource use, and the best resource use (do more with less).
Resources efficiency	Lower resources' availability. They have 50% fewer resources than other SEI.	Greater resources availability	Good resources availability
Innovation capacity	They have 50% less innovation capacity than other SEI.	Great innovation capacity, probably because this SEI has resources to take risks.	The biggest innovation capacity
Value proposition innovation	There is some innovation, but probably an efficient-driven value proposition.	The lowest innovative value proposition. Almost 7 times less innovative than Innovative SEI.	The most innovative value proposition.
Funding access	Lower funding access availability. They have 50% less funding access than other SEI.	Greater funding access availability	Good funding access availability

Source: Adapted from Ciccarino (2021).

Figure 2: PIM Model

Although, PIM model (Ciccarino, 2021) has analytical support by Zott and Amit (2007) research, the taxonomy description also finds great similarities with classifications posed by Erpf and Tekula (2019), and Zahra *et al* (2009), as shown in Figure 3. Therefore, the stuck in the middle can be a transitory condition or even can achieve performance parity in the long run (Porter, 1980, Dess and Davis, 1984). The fact is that the emphasis on the novelty of the social and entrepreneurial business model ends up forcing them to adapt to more robust management practices to access investment. Therefore, it becomes a movement of value creation through increased efficiency. But the opposite can also happen, by achieving innovation by efficiency-driven opportunity exploitation (Kickul *et al.*, 2018). The stuck in the middle is still not the most desirable type, but considering the deepest description, it can just be a traditional social organization in adaptation (Ciccarino, 2021), as shows the Figure 3 by the comparison with other social entrepreneurial classifications.

	PIM Model	Erpf and Tekula (2019)	Zahra <i>et al</i> (2009)
Unit of analysis	Business model	Organizational features	Social Entrepreneur
Types	Innovative SEI	Change promoting organization	Social Engineers
	Stuck in the middle	Service provider organization	Social Constructionist
	Persistent SEI	Philanthropic organization	Social Bricoleur

Source: Authors

Figure 3: Social entrepreneurship classification comparison

3. Methodology

This qualitative study focused on assessing the analytic capacity of Ciccarino' (2021) PIM model (Dess and Davis, 1984). It analyses to what extent the statistical classification remains stable if PIM model was applied to qualitative data by pattern-matching (Ghauri, 2004). According to Zott and Amit (2007) the design of a business model is composed of elements such as content, structure, and governance. And its configuration is defined by the degree to which these elements are managed and interconnected. Therefore, a stable classification patterns can indicate validity and reliability (Humbrić, 1980, Carneiro *et al.*, 1991). Seelos and Mair (2005) used cases to exemplify social entrepreneurial features, as we use in this paper to offer the taxonomy description. Additionally, managers narratives are usual in studies aiming sustainability and social problem-solving (Claro and Esteves, 2021, Mair *et al.*, 2012).

This paper is part of a broader study that started in 2016. Case selection followed these criteria: 1) the same social initiative must have data available and identifiable from both data collection methods; 2) the selected case must represent different business model types. The amount of data available to characterize each case were equivalent and relevant, resulting in four cases social entrepreneurial initiatives (SEI). Interviews consulted some managers of social initiatives between July and December 2019. Additionally, some social initiatives identified themselves in the survey from November 2019 to February 2020.

Interviews data were framed into a social business model taxonomy by Delphi analysis. It is usually a remotely performed method that uses a series of sequential inquiries to build consensus by an iterative process interspersed with controlled feedback. Delphi is effective in achieving consensus when theory still lacks empirical evidence because it allows to merge the knowledge and abilities of a group of experts (Remenyi *et al.*, 1998, Ahmad and Wong, 2019). The method underlines convergences and divergences (Remenyi *et al.*, 1998, Tapio, 2002), proving to be useful in selecting and validating factors. Evidence from literature consider a consensus when the convergence is 75% or higher (Ahmad and Wong, 2019). Experts were contacted from December 2020. As usual, the selection process was by convenience to ensure proper participation until the end, but credentials were extensively checked (Tapio, 2002). Four scholars committed to the study, they proved experience in social innovation and entrepreneurship, sustainability, social psychology.

Experts received the tables presented in the theoretical foundations and the interviews' transcriptions. Two online meetings helped to solve doubts about the classification into the taxonomy (i.e., 13/02/2021 and 23/04/2021). Experts sent their answers by e-mail until 3rd may. Then, a table organized all the answers and the classification from statistical analyses. The second Delphi round was based on that Table. Experts provided further information about their classification until 8th June. Throughout the process, experts were encouraged to explain their points of view, avoiding the problem of oversimplification linked to the method (Tapio, 2002). Finally, an online meeting on 14th June 2021 allowed discussion and provided the synthesis presented in this paper. All experts received and approved by email the result until 23rd June.

4. Cases' analysis

4.1 SEI1 persistent

SEI1 assists people in situations of social or mental health vulnerability. It has an operating model that goes beyond fixed assistance at a headquarters, acting on the streets or in local communities to identify people in need of support. It works with different audiences, being at the forefront of different proposals of an innovative value proposition, even if the focus is the social exclusion of minorities. Based on the promotion of low-cost activities oriented towards culture, the enhancement of local communities' empathy and well-being, SEI1 can promote effective results by their actions, even though it is difficult to measure their impact. The innovation seems to be incremental and happens empirically, given the specificity of each public or difficulty encountered. The issue of resources efficiency seemed to be a challenge that directly affects the sustainability of the initiative.

4.2 SEI3 innovative

SEI 3 calls itself a voluntary "movement", with three main pillars: ending food waste, ending hunger, and involving the entire community in the process. It more than 50 branches and a local presence, totalling approximately, 7000 employees. According to the SEI3's vision, the innovative value proposition lies in the capacity to collect and redistribute food from partners, mapping families, and logistics for delivery. SEI3 aims at

circular economy principles, refusing business logic. It is proud to be not-for-profit. However, it achieves a mass scale value by a standardized operation that embraces a huge stakeholder mobilization. As noted in the studies of Zott and Amit (2007), business models focused on efficiency are more associated with the performance factor of an entrepreneurial company when resources are scarce and controlled than abundant, which can be seen in elements of E3's speech: *"We don't lack resources nor volunteers. We have a queue of people to volunteer."* The well-design internal process deals with volunteer's turn-over.

4.3 SEI2 Stuck in the middle

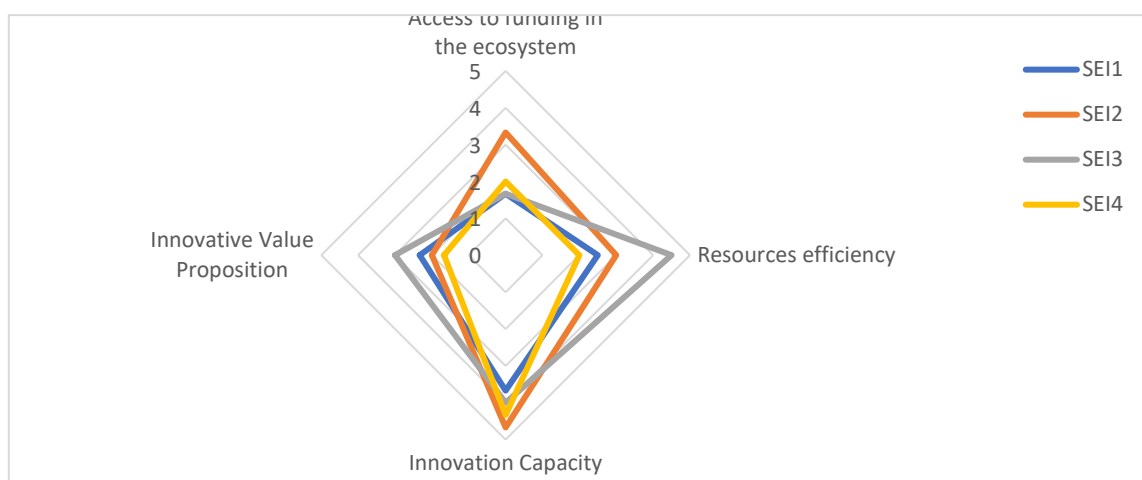
SEI2 is a non-profit association that rebuilds homes for people in need. It started by solving a problem observed in society as an innovative business model. It has already rebuilt hundreds of homes and institutions and mobilized thousands of volunteers inside and outside the country. Its innovative value proposition and innovation capacity rely on stakeholder mobilization. SEI2 resembles other models already implemented in the United States, showing elements of incremental innovation. However, SEI2 invests in new programs inspired by Team Building, and gamification. It can be seen in the speech that the business model continues to insert, over time, new value propositions. While the innovation process is constant, there is a strategic proposal evidenced toward efficiency building. SEI2 presents elements related to the positive association between the business model design, centred on novelty, and the development of scale by standardization. This efficiency-driven concern is justified in the narrative as a funding issue, since SEI2 has capitalized on investment in the early stage.

4.4 SEI4 the divergence

SEI4 is an initiative from a 145 years-old broader organization. SEI4 works in prisons to foster social transformation through training and development of skills related to musical and artistic areas. The project provides an alternative way of life and reinsertion, generating impacts in the community, family, and society. The initiative had different target audiences until being focused on prison communities. Innovation emerges from empathy and community demand against marginalization and prejudice. For the interviewee, social innovation happens naturally, in ways that Science does not even reach. SEI4 managerial elements are inspired by funding needs. The analysis of the SEI4's resource efficiency shows concern about maintaining the project over time. *"maintaining a project of classical music is costly"*.

4.5 Classifications comparison

The cases' analyses followed PIM model features, namely: 1) Innovative Value Proposition; 2) Innovation Capacity; 3) Resources Efficiency, and 4) Access to funding in the ecosystem (Ciccarino, 2021). The factors and questions from Figure 1 guided qualitative data examines to classify each SEI in a Type from the taxonomy. Accordingly, SEI can be Persistent, Innovative, or Stuck in the middle. Ciccarino (2021) performed the classification using statistics, and we tested if the qualitative data induces similar results. Figure 4 shows the SEIs comparison using the survey database of the PIM Model. PIM classify SEI1 and SEI4 as Persistent, SEI3 as Innovative, and SEI2 as stuck in the middle.



Source: Authors

Figure 4: Case's statistical classification

Table 2 summarizes the statistical and analytical classification. The narratives that support the classification presented in Table 2 are highlighted. The qualitative taxonomy replication was consensual and consistent except for SEI4.

Table 2: Classification’s summary

	Persistent	Stuck in the middle	Innovative
PIM’s Hit Ratio	90.50%	88.56%	88.56%
PIM	SEI1 and SEI4	SEI2	SEI3
Research 1	SEI1		SEI3 and SEI4
Research 2		SEI2	SEI3 and SEI4
Research 3	SEI1	SEI2	SEI4
Research 4	SEI1 and SEI4	SEI2	SEI3

Source: Authors

“Innovative”, and “Stuck in the Middle” SEIs consistently adhere to the PIM Model classification. It was possible to find a clear fit within categories. Regarding “Persistent” SEIs, further discussion was necessary. Besides SEI1 being quickly classified as Persistent, SEI4 provoked debate and was the most discussed classification. It persists in the cause of serving minorities through music, but that might not exactly be an innovative way to do it. However, SEI4’s core is essentially creative. Art can be an innovative value proposition. The point is that assisting minorities is, to a large extent, one of the most constant goals in social entrepreneurship initiatives, as well as resource constraints are usual issues. Maybe SEI4 is a case of the maturity life cycle. Efforts may have geared from innovation to more efficient use of resources due to survival and scale gain concerns. This need for more information to classify the case shed light on concerns about the speed of innovations, the desire to carry out an incremental innovation, and how this dynamic should be classified in a context of innovation capacity and/or scale achieved.

5. Discussion and conclusion

The study met the proposed goal of assessing the analytic capacity of PIM model (Dess and Davis, 1984) to assess in what extent the statistical classification remains stable if PIM model was applied to qualitative data (Humbrick, 1980, Carneiro *et al.*, 1991). Besides testing the PIM model’s usefulness, this study also answers the need for more empirically tested tools from a social entrepreneurial standpoint (Ciccarino, 2021, European-Commission, 2016, Erpf *et al.*, 2019). Delphi analyses examined the consistency of the taxonomy to analyse qualitative data. Results highlight convergences, contradictions (Dess and Davis, 1984, Remenyi *et al.*, 1998) deepen the understanding about innovative value Proposition, innovation capacity, resources efficiency, and access to funding (Ciccarino, 2021) by social managers narratives (Claro and Esteves, 2021, Mair *et al.*, 2012).

PIM model (Ciccarino, 2021) relies on Porter’s generic strategies (Porter, 1980) logic in social initiatives, as Zott and Amit (2007) have done before for entrepreneurial business models. Although not all the cases analysed qualitatively have the same results as the statistical classification, the taxonomy seems to be an efficient tool for identifying key factors of SEIs’ business models and comparing them. It corroborates Zott and Amit (2007) argument about business model configurations and reinforces the Taxonomy validity (Dess and Davis, 1984, Remenyi *et al.*, 1998). It was possible to visualize the narrative fit into the taxonomy. Among experts, the overall agreement rate was around 81.25%, expressively above benchmarking. (Ahmad and Wong, 2019). This rate is slightly higher comparing statistical classification (85%) reported by Ciccarino (2021).

By assuming a non-reductionist outlook, insights from the analyses improve the PIM model and expand its usefulness in further studies by providing frameworks (Remenyi *et al.*, 1998, Ghauri, 2004, Tapio, 2002). The study made the taxonomy easier and more replicable. The description of the PIM model and the cases’ narrative offers a structured way to collect and analyse information that can be easily replicated in other contexts. As far as we know, there are no models that provide these means of analysis for qualitative and quantitative data within the scope of the social entrepreneurship. Social initiatives and investors can benefit from PIM use, achieving better decision-making.

The study limitation is the usage of the qualitative data from PIM’s study to check its analytical application. But it also allowed the descriptive tables (Figure 1 and 2) that can be used to structure interviews in other contexts.

Results are also supported by a robust qualitative method based on specialists' opinion that contributes, enhancing the structural usage for data collection in future studies (Ahmad and Wong, 2019, Tapio, 2002).

Additionally, there is still space for PIM model improvement. For instance, enhance the description of inside factors with more examples, as provided by the four cases. The development shall achieve a qualitative gradation like the nine-box plot to help classification. This plot can also be helpful to give a sense of progress in analysing longitudinal data. Future studies can address these issues by collecting a large sample. Longitudinal data from a qualitative or quantitative source are important to verify the classification's stability and to understand changes over time, approaching the life cycle issue. Future studies can also explore PIM types, covering their differences in the entrepreneurial business model design.

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