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AGENCY AND POSITIVE INSTITUTIONAL CHANGE THROUGH SUSTAINABLE ENTREPRENEURSHIP: THE CASE OF FIRST MOVERS PROVIDING FOOD LOSS AND WASTE SOLUTIONS

Porto Alegre
March 2021

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PhD Thesis submitted to the Post-Graduate Program in Business Administration (PPGA) from the Federal University of Rio Grande do Sul (UFRGS) as a partial requirement to obtain the PhD title.

Supervisor: Professor Marcia Dutra de Barcellos, PhD.
Co-supervisor: Professor Tõnis Mets, PhD.

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“You must be the change you wish to see in the world.”

Mahatma Gandhi

ABSTRACT

The emergence of entrepreneurs dealing with food loss and waste (FLW) solutions, despite the low incidence of institutional pressure, has no explanation by Institutional Theory, a significant gap this thesis aimed to shed light-on. This theory struggles to conceptualize change since agents are viewed as institutionally embedded, i.e., it is assumed that institutional environments shape individuals and organizations who have a limited degree of agency. The agency versus structure is an ongoing debate (the paradox of embedded agency) that seeks to understand how actors can change institutions if their actions, intentions, and rationality all are conditioned by the very institution they wish to change. The objective of this thesis was to understand how first movers entrepreneurs exercise their agency to produce a positive social impact in the context of FLW solutions. To answer this, a qualitative study was designed and performed on seven cases of sustainable entrepreneurship in four different countries: Brazil, Canada, Denmark, and Finland. Data collection is based on observation visits, interviews with entrepreneurs, secondary data, social media posts and interviews with consumers. Content analysis of the collected data was carried out with the help of NVivo Software. The thesis contribution section discusses and analyzes the final result in combination with three papers (the so-called hybrid thesis). In addition to the theoretical discussion, a framework proposing the agency process in three levels (micro, meso and macro) is laid out. Along with a schema indicating the relationship between institutional environment and the processes proposed for the agency in institutional entrepreneurship. In general, this thesis contributes to the advancement of Institutional Theory in relation to agency versus structure ongoing debate (embedded agency paradox). Specifically, the paper-I contribute to filling the gap about the knowledge about the sustainable entrepreneurial process; paper II also contribute to filling the gap in the literature by identifying business models' innovations in sustainable entrepreneurship, analyzing their characteristics, their mechanisms to overcome hybridity-related tensions, and providing empirical evidence about how business models can be used to create and capture multiple forms of value; and paper III illustrates the interface between sustainable entrepreneurship that addresses the FLW problem, the adopted solutions, supply chain coordination, performance improvement and the indicators of positive social change. Finally, social implications are presented, followed by propositions to stimulate sustainable entrepreneurship. Suggestions are also indicated for potential entrepreneurs and/or managers willing to develop businesses that challenge the practices established in the market.

Keywords: institutional entrepreneurship; Institutional Theory; food loss and waste.

RESUMO EXPANDIDO

A redução das perdas e do desperdício de alimentos (FLW, do inglês *food loss and waste*) é considerada um grande desafio para a sustentabilidade dos sistemas alimentares. O problema atinge países em todos os continentes. O mais recente relatório sobre o tema divulgado pela *United Nations Environment Programme* (2021) faz uma excelente analogia ao dizer que se FLW fosse um país, seria a terceira maior fonte de emissões de gases de efeito estufa. De fato, estima-se que cerca de 25-33% de todos os alimentos produzidos no mundo são perdidos ou desperdiçados, considerando desde a etapa de produção até o consumo (FAO, 2013; Gustavsson *et al*., 2011; Kummu *et al*., 2012). Isso gera uma série de prejuízos econômicos, ambientais, nutricionais e sociais (Campoy-Muñoz, Cardenete & Delgado, 2017; Kazancoglu, Ozkan-Ozen & Ozbiltekin, 2018; Papargyropoulou *et al*., 2014; Thyberg & Tonjes, 2016).

Há uma série de esforços para reduzir FLW, cujas metas globais são bastante audaciosas e parte de uma agenda mais ampla de sustentabilidade. Isso traz consigo uma necessidade das nações se reinventarem e realinharem as suas forças materiais, discursivas e organizacionais. Como realizar essa mudança é um grande desafio, pois, conforme indicam Graham-Rowe, Jessop e Sparks (2014) e Muriana (2017) este problema ainda não é considerado uma prioridade pelo setor de alimentos e tampouco tem entrado fortemente na pauta institucional de muitas nações. Sabe-se que, embora já exista alguma pressão por uma agenda mais sustentável, a lógica dominante ainda é de manter o *status quo*. Essa inércia encontra uma explicação na Teoria Institucional, pois espera-se que empresas do mesmo setor se tornem cada vez mais semelhantes em resposta às mesmas pressões institucionais.

O problema relacionado a FLW serve de contexto para estudar uma questão mais ampla no campo da administração: a mudança do *status quo* através da agência dos indivíduos. Isso porque, apesar da ausência ou baixa incidência de pressões institucionais, empiricamente, é possível identificar o surgimento de empreendedores pioneiros trazendo novas formas de organizações que se propõem a enfrentar o problema de FLW, combinando empreendedorismo e tecnologia. Essas novas formas organizacionais são identificadas nesta tese como empreendedorismo sustentável, uma vez que, além do lucro, visam gerar benefícios ambientais e sociais por meio de atividade comercial. Esses empreendedores propõem um negócio que é capaz de influenciar positivamente o comportamento do consumidor, as ações de varejo, as práticas de distribuição e marketing e, talvez, as condutas governamentais.

O surgimento desses empreendedores lidando com soluções de FLW não tem explicação pela Teoria Institucional, uma lacuna significativa que esta tese pretende enfocar. Essa teoria

tem dificuldades em conceituar a mudança, uma vez que os agentes são vistos como institucionalmente inseridos, ou seja, pressupõe-se que os ambientes institucionais condicionam o comportamento dos indivíduos e das organizações ao ponto de que estes possuem um grau muito limitado de agência. O debate sobre agência *versus* estrutura (paradoxo da agência imersa) busca entender como os atores podem mudar as instituições se suas ações, intenções e racionalidade são condicionadas pela própria instituição que desejam mudar.

Desta forma, o objetivo desta tese foi compreender como os empreendedores pioneiros exercem sua agência e produzem impacto social positivo no contexto de soluções voltadas à FLW. Para responder a essa questão, foi realizado um estudo qualitativo com sete casos de empreendedorismo em quatro países diferentes: Brasil, Canadá, Dinamarca e Finlândia. A coleta de dados foi baseada em visitas de observação, entrevistas com empreendedores, dados secundários, posts em mídias sociais e entrevistas com consumidores. Uma análise de conteúdo foi realizada com a ajuda do software NVivo. Os resultados são expostos ao longo de três artigos e discutidos em conjunto na seção de contribuição da tese (tese híbrida). Além da discussão teórica, é desenvolvido um quadro que propõe o processo de agência em três níveis (micro, meso e macro) e um esquema que indica a relação entre o ambiente institucional e os processos propostos para a agência através do empreendedorismo institucional.

Em geral, esta tese contribui para o avanço da Teoria Institucional em relação ao debate de agência *versus* estrutura. Especificamente, o artigo I contribui para preencher a lacuna sobre o conhecimento relacionado ao processo do empreendedor sustentável; o artigo II contribui para preencher a lacuna na literatura ao identificar inovações nos modelos de negócios em empreendedorismo sustentável, analisando suas características, seus mecanismos para superar as tensões entre o tripé da sustentabilidade e fornecendo evidências empíricas sobre como os modelos de negócios podem ser usados para criar e capturar formas múltiplas de valor; e o artigo III ilustra a interface entre SE que abordam o problema de FLW e as soluções adotadas, a coordenação da cadeia de suprimentos, a melhoria do desempenho e os indicadores de mudança social positiva.

Finalmente, algumas implicações sociais são apresentadas, seguidas de possíveis ações capazes de estimular empreendedorismo vinculado à sustentabilidade. Também são indicadas sugestões para potenciais empreendedores e/ou gestores que desejam desenvolver negócios que desafiem as práticas estabelecidas no mercado.

Palavras-chave: empreendedorismo institucional; Teoria Institucional; impacto social positivo.

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ABREVIATIONS

FAO - Food and Agriculture Organization

FLW - Food loss and waste

OECD - Organisation for Economic Cooperation and Development

SDG – sustainable development goal

SE - Sustainable entrepreneurs

SEP - Sustainable entrepreneurial process

SO – specific objectives

UN - United Nations

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LIST OF PUBLICATIONS

This thesis is based on the following papers:

Paper I

Matzembacher, D. E., Raudsaar, M., de Barcellos, M. D., & Mets, T. (2019). Sustainable Entrepreneurial Process: From Idea Generation to Impact Measurement. Sustainability, 11(21), 5892.

Paper II

Matzembacher, D. E., Raudsaar, M., de Barcellos, M. D., & Mets, T. (2020). Business Models' Innovations to Overcome Hybridity-Related Tensions in Sustainable Entrepreneurship. Sustainability, 12(11), 4503.

Paper III

Matzembacher, D. E., Vieira, L. M.; & de Barcellos, M. D., How sustainable entrepreneurs reduce food losses and waste in supply chains under different institutional environments and voids? Paper under review.

1 INTRODUCTION

The 2018 report by the United Nations's (UN) Food and Agriculture Organization (FAO) highlights the rise in global percentage of hunger for the third consecutive year. Approximately 821 million people now go hungry on a regular basis, which represents a reversal of a positive trend in the fight against global hunger (FAO, 2018). The coronavirus 2019 disease (COVID-19) pandemic increased this global food insecurity alerts, since it led to food shortages, increased food prices, and loss of income (Paslakis, Dimitropoulos & Katzman, 2020). At the same time, it is estimated that 25-33% of all the food produced in the world is either lost or wasted (FAO, 2013; Gustavsson *et al*., 2011; Kummu *et al*., 2012). The prospects are that this situation will tend to worsen since the world's population, which numbered nearly 7.6 billion in mid-2017, will reach between 9.4 and 10.2 billion by 2050 (United Nations, 2017). It will require at least a 70% increase in food production (FAO, 2009).

Food loss and waste (FLW) has become a major global issue that threatens sustainable food systems and generates negative externalities in economic, environmental, nutritional, and social terms (Campoy-Muñoz, Cardenete & Delgado, 2017; Kazancoglu, Ozkan-Ozen & Ozbiltekin, 2018; Papargyropoulou *et al*., 2014; Thyberg & Tonjes, 2016; United Nations Environment Programme, 2021). Estimates suggest that 8-10% of global greenhouse gas emissions are associated with food that is not consumed (United Nations Environment Programme, 2021). Food loss and waste can be defined as a decrease in the quantity or quality of food along the food supply chain. Empirically it considers food losses as occurring along the food supply chain from harvest/slaughter/catch up to, but not including, the retail level. Food waste, on the other hand, occurs at the retail and consumption level (FAO, 2019, p. 14). This thesis address both situations, therefore, will adopt both terminologies on the FLW acronym.

The causes of FLW are connected across food supply chains, from primary production to final consumption (Bilska, *et al*., 2016; Canali *et al*., 2017). As a consequence, research into FLW has emerged as a priority issue for both academics and practitioners. There is a call to incorporate food waste into food systems research as a systematic aspect of food supply chains and not just as an end-of-pipe issue in kitchen waste bins (Hodgins & Parizeau, 2020). According to Gustavsson *et al*. (2011), there is a relevant gap in the knowledge body of global food loss and waste, so further researches in the area are urgent. They propose that, given the magnitude of the problem, making profitable investments in reducing FLW could be one way of reducing food cost and the associated environmental and social impacts. Lundqvist, de

Fraiture and Molden (2008) called for an action advocating a 50 per cent reduction in FLW by 2025.

A new agenda recently pulled together these efforts to reduce FLW in the 2030 Agenda for Sustainable Development, which must be adopted by all UN member countries. The 2030 Agenda addresses areas of crucial importance to humanity and to the planet, such as ensuring sustainable production and consumption patterns and achieving food security. The United Nations Sustainable Development Goal (SDG) Target 12.3 is: "by 2030, halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses" (UN General Assembly, 2015). One billion extra people could be fed if FLW is reduced by half (Kummu *et al*., 2012). Reducing FLW also has the potential to contribute to SDG 2 (to end hunger, the achievement of food security and improved nutrition), SDG 6 (sustainable water management), SDG 13 (climate change), SDG 14 (marine resources), SDG 15 (terrestrial ecosystems, forestry, biodiversity), and many other SDGs (FAO, 2019).

In order to prevent or reduce FLW cities and nations need to invent, change, and realign material, discursive, and organizational forces concerning new relations and practices. But how to do that is the big challenge (Zapata & Zapata Campos, 2019). Therefore, reducing FLW is one of the most promising measures for improving food security in the coming decades (Kummu *et al*., 2012) and one of the major goals in the current research in the food and managerial sector (Muriana, 2017; Raak *et al*. 2017).

Many countries are already taking action to reduce FLW, but the challenges ahead remain significant, and it is necessary to step up efforts involving the most diverse stakeholders in society (FAO, 2019). The private sector, as the main driver of economic activity and an important source of creativity, innovation and entrepreneurship, should be involved in the attempt to achieve greater sustainability (Robinson, 2004) proposing solutions to address FLW issues. However, despite being considered a major societal, economic, nutritional and environmental problem (Halloran *et al*., 2014), FLW is still not considered a priority by companies (Graham-Rowe, Jessop & Sparks, 2014). There is a little economic incentive to reduce it within the current food supply chain (Muriana, 2017). It is also considered many times as cultural invisibility.

The classical current of Institutional Theory explains for this inertia. It is expected that companies of the same sector become increasingly similar in response to the same institutional pressures. Conceptually, Institutional Theory proposes three isomorphic forces: coercive, mimetic and normative pressures. Changes in organizational structures relate to the process of

isomorphism arising from the relation between organizations and the institutional environment (DiMaggio & Powell, 1983). Although some organizations in the food sector suffer pressures or even wish to pursue a sustainable agenda by integrating new rules and legitimating practices within their organization, the dominant logic appears to be one of cost reduction and profit maximization (Glover *et al*., 2014). In fact, reducing FLW generally entails costs and stakeholders may also face constraints that prevent or deter them from implementing actions to address this problem (FAO, 2019). There are no institutional pressures to avoid it in today's society (Baron *et al*., 2018; Lin *et al*., 2013). It is assumed that considering the propositions of Institutional Theory, organizations maintain the *status quo*, i.e., remain inert due to this absence (or low incidence) of institutional pressure to reduce FLW.

However, despite the absence or low incidence of institutional pressures, empirically, it is possible to identify the emergence of first movers, entrepreneurs bringing new organizations forms that propose to address the problem of FLW, combining characteristics of entrepreneurship in the food industry with a strong influence by the use of technology. These new organizational forms are identified in this thesis as sustainable entrepreneurship since, in addition to profit, they aim to generate environmental and social benefits through commercial activity. These entrepreneurs set up a business expected to positively influence consumer behavior, retail actions, distribution and marketing actions, and perhaps government actions. FLW is the context in which a broader question in the field of administration is investigated: the change of the *status quo* through the agency of individuals.

The literature has converged on the belief that individuals have the ability to challenge the dominant institutional structures (Brint & Karabel, 1991; Karnøe & Garud, 2012). However, Institutional Theory does not provide answers related to the conceptualization, motivations and mechanisms of institutional change. For this reason, the understanding in this thesis is that the emergence of entrepreneurs dealing with FLW solutions has no theoretical explanation by Institutional Theory. The origin of this statement is because, according to DiMaggio & Powell (1983), driven by an organization's intrinsic quest for institutional acceptance (legitimation), Institutional Theory assumes that a set of isomorphic processes is enacted, comprising coercive, mimetic and normative factors, through which individuals within an institutional structure further converges (DiMaggio & Powell 1983). In face of these institutional structure, individuals are without the ability to rise above these pressures and to develop the capacity to act deliberately and independently, i.e., to exercise their agency to change the *status quo* (Garud *et al*., 2007; Battilana *et al*., 2009). Institutional Theory has faced growing criticism for its narrow focus on explanations for the stability and persistence of institutional structures, which

hardly allowed for the investigation of institutional change (Garud *at al*., 2007). In fact, it originally does not introduce the possibility of agency, although it is recognized that in practice the institutional environment creates the conditions that constrain and enable change (Garud at al. 2007). Therefore, the emergence of entrepreneurs dealing with FLW solutions, despite the low incidence of institutional pressure, has no theoretical explanation by Institutional Theory, a significant gap this thesis aimed to shed light-on.

Institutionalist analysis struggles to conceptualize change since agents are viewed as institutionally embedded, i.e., conditioned to follow rules (Heiskanen, Kivimaa & Lovio, 2019). Supposedly, if institutional environments shape individuals and organizations with a limited degree of agency, the question arises: "how can actors change institutions if their actions, intentions, and rationality are all conditioned by the very institution they wish to change?" (Holm, 1995). Seo and Creed (2002) label this paradox between institutional determinism and agency as the "paradox of embedded agency." For institutional theory, the embedded agency is still a paradox (Colombero, Duymedjian & Boutinot, 2021). It corresponds to the agency versus structure ongoing debate in the framework of Institutional Theory. The key factor and process related to the embedded agency remain under-investigated so far (Moggi, Bonomi & Ricciardi, 2018). So, the question becomes how embedded agency is possible? (Battilana & D'Aunno, 2009; De Lange, 2019; Lok & Willmott, 2019; Zietsma & Lawrence, 2010).

The supposed analogy refers to the water stream of a river. Institutional Theory represents the water stream (force) that moves water in a given direction. Organizations are immersed in this water, and to promote their survival, they "swim" in the same direction as the water. The water represents the institutional environment, i.e., institutional pressures. Organizations look to conform to these pressures to survive (they need institutional legitimacy). To go in the opposite direction represents an extra effort which can lead them to "death", i.e., lack of legitimacy or excessive use of resources necessary for the company's operations, in an environment that, as a rule for the food sector, is highly competitive and save resources is essential. Thinking about FLW, it is expected, according to Institutional Theory, that organizations do not change their behavior (swim in the opposite direction) since the dominant pressures are to focus only on profit. Still, empirically there are these first movers that go in the opposite direction. There is no explanation for this "movement" in Institutional Theory. For this reason, these entrepreneurs bring together elements that can be considerate as an interesting case regarding the emergence of new organizational forms and the paradox of embedded agency, using the case of FLW as a context of analysis.

Since institutional pressures do not explain apparently, in a dominant way, the emergence of these new organizational forms - sustainable entrepreneurship providing with FLW solutions, it is necessary to understand what may be behind the organizational change that intends to address a relevant problem related to sustainability. The apt criticism of Institutional Theory is that it has focused on the movement towards isomorphic institutional environments (and their maintenance). The forces that change the institutional environment do not receive much attention since organizations and institutional norms change over time (Kondra & Hinings, 1998). A more robust Institutional Theory should include a role for an active agency (De Lange, 2019; Kondra & Hinings, 1998; Lok & Willmott, 2019). In general, this thesis contributes to the advancement of Institutional Theory in relation to agency versus structure ongoing debate (embedded agency paradox).

The theoretical lens chosen to investigate this paradox of embedded agency in this thesis is institutional entrepreneurship. Institutional entrepreneurship constitutes an emerging and growing area of organizational research within the Institutional Theory field (Hardy & Maguire, 2017). The concept of institutional entrepreneurship introduced by DiMaggio (1988) refers to the practices of individual and/or collective actors aimed at creating, maintaining, and disrupting institutions and the involved entrepreneurs` attempts to infuse new beliefs, norms and values into social structures (Rao, Morrill & Zald, 2000) to promote their organization or field survival (Bruton, Ahlstrom & Li, 2010).

The concept of institutional entrepreneurship also problematizes how and with-whom these individuals gain their (institutionally embedded) agency. The understanding about it is highly relevant to understand institutional positive change (Lawrence, Suddaby & Leca, 2011) through practices and processes, and also highlighting purposive action in opposition to existing institutional arrangements and the role of opportunity for an agency (Heiskanen, Kivimaa & Lovio, 2019). The understanding related to the question, how institutional entrepreneurship works might enable potential change related to constraints in the institutional environment (Dover & Lawrence, 2010) and solutions to challenges faced by the society (Ferraro, Etzion, & Gehman, 2015), as it is the case of FLW solutions.

The hypothesis is that institutional entrepreneurship helps to explain how the agency of these first movers occurs in an institutional environment that is not favorable for it, i.e., what motives them to make such enterprises, what mechanisms they use to modify the institutional environment and how these entrepreneurs produce positive social impact. The objective of this thesis is to contribute to the debate about agency into Institutional Theory. Therefore, the

research problem that emerges is: how do sustainable entrepreneurs exercise their agency and produce positive social impact?

1.1 Research objectives

The main research objective of this thesis is to understand how first mover´s entrepreneurs exercise their agency and produce a positive social impact in the context of FLW solutions. To address the main research goal, specific objectives (SO) were defined:

1) To identify and describe the operation of first movers' entrepreneurs addressing FLW solutions;
2) To understand the process related to the emergence of the enterprise;
3) To analyze the mechanisms used by these entrepreneurs to influence the institutional environment;
4) To propose indicators of positive social impact generated by the agency of these entrepreneurs addressing FLW solutions.

1.2 Justification

This thesis is positioned within in a broader research field of sustainability transitions literature, and focuses on the relation between sustainable entrepreneurship and agency into Institutional Theory. This research is relevant as it aims to address a topic that has gained attention, but is still little explored by the literature, as there is a limited number of studies analyzing the paradox of embedded agency. Although there is some interesting conceptual work on the topic, only a small number of institutional studies have examined agency and the creation of new organizational forms, the reasons why they emerge and their mechanisms. It remains an unsolved problem in Institutional Theory (Tracey, Phillips & Jarvis, 2011; Battilana & D'Aunno, 2009; Dacin, Goodstein & Scott, 2002; Kondra & Hinings, 1998; Holm, 1995; Zapata & Zapata Campos, 2019).

An example of this gap is provided by Dentoni *et al*. (2018), who proposed a call for papers asking researches to address, among others, the following questions: (a) why do these new organizational forms emerge; (b) how do they take into account and address the social or strategic problems; (c) what tensions, struggles and challenges these new organizational forms

face when seeking to achieve impact; (d) what are the dimensions of their novelty and innovativeness, also from a social and environmental point of view (Dentoni *et al*., 2018).

Mair and Marti (2009) identify a gap in the literature about how opportunities for institutional entrepreneurship are created, recognized and/or enacted. With a few exceptions, recent studies on institutional entrepreneurship have paid much more attention to the ex-post scheme of managing hybrid organizations (how they attempt to deal with the challenges of balancing commercial, social or/and environmental objectives) than the ex-ante plan of their creation (Ko & Liu, 2020). In other words, little is known about how this agency of the entrepreneurs arises. One study conducted by Genus *et al*. (2020) found that institutional entrepreneurs have been exposed to counter-cultural thinking. However, their research does not elucidate how this counter-cultural thinking ends up standing out and determining the actions of these entrepreneurs, how their action occurs and what is the result of their agency. Moreover, Stephan *et al*. (2016) propose that management research on these phenomena rarely explores how these activities may have external effects stimulating societal well-being beyond organizational boundaries. According to Heiskanen, Kivimaa and Lovio (2019) and Zapata and Zapata Campos (2019) there are genuine knowledge gaps in the literature about how institutional entrepreneurship can deliver relevant and actionable positive change.

The is also a lack of research in entrepreneurial actions emerging at the margins of accepted institutional arrangements and their potential impacts, especially to understand how entrepreneurs can shape change towards sustainable management (Grob & Benn, 2014), which new organizational forms are successful and the features and experiences that are transferable to other contexts (Cheney *et al*., 2014). Previous studies have developed various solutions to address the issue of FLW, but the role of for-profit start-ups and other business remains poorly understood (Närvänen, Mattila & Mesiranta, 2020), which is the case of sustainable entrepreneurship. In addition, a better understanding of how and when these organizations address globally relevant problems and contribute to systemic change remains open (Dentoni, Bitzer & Schouten, 2018; Kilelu *et al*., 2013). Academic and practical interest in how market-based organizations can drive positive social change is steadily growing. Management research on these phenomena is on the rise but remains fragmented (Stephan *et al*., 2016). Vargo and Lusch (2017) have called for research that adopts an institutional perspective to investigate the emergence of new organizational forms. In any case, the academic literature is very incipient and there is significant room for deepen in all issues mentioned above and to generate new topics and debates.

1.3 Structure

This thesis is divided into 8 sections, including this introduction as the first chapter. In chapter 2, the theoretical background is constructed. In the first part (section 2.1), the Institutional Theory is discussed, including questions about institutional pressures and the agency within the Institutional Theory. In the second part (section 2.2), Institutional Entrepreneurship is presented, including its characteristics and possibilities of analysis. Section 2.3 presents the empirical context of FLW. A summary of the concepts and a schema related to the theoretical background is presented in section 2.4.

In Chapter 3 revolves around general methodological aspects regarding research strategy, data collection, data analysis, and rigor of research, explaining the points in common and the differences between the papers.

Chapter 4 presents the three papers that are part of this thesis. Chapter 5 presents the thesis contribution, i.e., the advancement into Institutional Theory concerning agency versus structure ongoing debate (embedded agency paradox) with the process in three levels in the agency in institutional entrepreneurship and the proposition of a schema related to the agency and positive institutional change through sustainable entrepreneurship. Chapter 6 provides final remarks, study limitations and suggestions for future research. Final part contains the references used and Appendix I (Case Study Protocol) and Appendix II (Interview Guide).

2 THEORETICAL BRACKGROUND

The theoretical background addresses three different sections that are relevant to investigate the paradox of agency into Institutional Theory using the FLW reduction context: Institutional Theory, institutional entrepreneurship, and empirical context – food loss and waste. The end of the section presents a summary of the concepts presented and how each one contributes to the analysis of the proposed research questions.

2.1 Institutional Theory

Institutional Theory is the theoretical background on which the whole investigation conducted in this thesis is based to answer the four specie objectives. The classic paper by Meyer and Rowan (1977) offered a radical change in conventional ways of thinking about the nature of how it produced organizational structure. They proposed that organizational structures are embedded with socially shared meanings, in the sense that organizations are driven to incorporate the practices and procedures defined by prevailing rationalized concepts institutionalized in society.

Institutionalization is the process in which social processes, obligations, or actualities become a "rule like" status in social thought and action. Organizations' positions, policies, programs and procedures are enforced by public opinion: the views of important constituents legitimated knowledge through the educational system, social prestige and laws (Meyer & Rowan, 1977, p. 341), as well as individual or collective outcomes which encourage or discourage others from doing something (Soublière & Gehman, 2019). According to Suchman (1995), it is related to the concept of legitimacy: a generalized perception that the actions are desirable, proper or appropriate within the existent system of norms, values and beliefs.

The Institutional Theory suggests that firms are affected by institutions — which can be classified as regulative, normative, or cognitive structures and activities (Scott, 2001). There are many interpretations of the "institution" concept, ranging from formal constructions, such as legal regulations and organizations, to behavioral patterns, such as habits and traditions (Van Bueren & Priemus, 2002). In this thesis, it is adopted the concept of Scott (1987): "institutions refer to relatively enduring systems of social beliefs and socially organized practices associated with varying functional arenas within societal systems, e.g., religion, work, the family, politics" (Scott, 1987, p.499). According to Levy and Scully (2007), institutions are increasingly

understood as discursive constructions. Holm (1995) proposes that institutions are products of action, and therefore constructed for some purpose without giving up the notion that institutions are also frameworks for action.

Such institutions affect structural changes in organizations. The concept of organizational change refers to any change in the organization's formal structure, organizational culture, goals, program or mission. In this sense, organizations can make (elaborate) changes, but also new ones can emerge in the field (DiMaggio & Powell, 1983). In fact, such institutions are myths, which make formal organizations both easier to create and more necessary, creating necessity and opportunity. It takes only little entrepreneurial energy to assemble them into a structure (Meyer & Rowan, 1977).

Therefore, formal organizations emerge in these domains. They spread very rapidly in modern society, i.e., tend to become isomorphic (Meyer & Rowan, 1977). Isomorphism is the constraining process that forces one organization to resemble others facing the same environmental pressure (DiMaggio & Powell, 1983).

The concept of the organizational field is also important. According to DiMaggio and Powell (1983), it refers to aggregated organizations that constitute a recognized area of institutional life, such as key suppliers, resource and product consumers, regulatory agencies and other organizations that produce similar services or products. Organizational fields comprise powerful institutional forces that lead members to become more similar to one another over time.

Laws, educational and credentialing systems and public opinion make it necessary or advantageous for organizations to incorporate new structures. Organizations that incorporate institutionalized myths are more legitimate and likely to survive, independent of the immediate efficacy of the acquired practices (Meyer & Rowan, 1977). It means that organizational success also depends on factors that go beyond the efficiency of productive activities. The final implication of this is the need to consider the institutional context.

Institutional Theory states that organizations operate in a regulated environment or organizational field, which demands, with the application of pressure, compliance with social and legal requirements (DiMaggio & Powell, 1983). As a result, values and beliefs that are external to the organization play a significant role in determining organizational norms (Kondra & Hinings, 1998). Organizations not only require labor, capital, knowledge and material but also depend on the acceptance of the society in which they operate.

It is significant to note that new or neo-institutionalism is the theoretical paradigm adopted in this thesis. Both approaches agree that institutionalization constraints organizational

rationality, but they differ on the sources of the constraints. Classic or old institutionalism focuses on roles, structures, processes and norms of organizations regarding their internal environment; New or Neo-institutionalism switches the focus to organization's interactions also with the external environment, since the organization is embedded in field, sector and society (DiMaggio & Powell, 1991).

2.1.1 Institutional Pressures: isomorphic forces

Institutional Theory considers different type of pressures (economic, social and political) and the effects of these pressures on management practices (Zeng *et al*., 2017). Organizations adapt their processes, structures and practices in order to ensure their actions are compatible with their contextual environmental requirements (Hsu *et al*. 2014), regarding their local, regional, national and/or international institutional context (Machado-da-Silva & Gonçalves, 1999).

Institutional Theory may also explain why actors who identify opportunities to improve performance (act on their interests) may be unwilling to do so. This process of adaptation tends to follow patterns of behavior when organizations operate in the same environment. It reduces heterogeneity between organizations and ensures they act according to the environment demands. Therefore, isomorphism is a result of heterogeneity reduction between organizations (Kondra & Hinings 1998).

Such an approach suggests that organizational characteristics are modified in the direction of increasing comparability with environmental characteristic. Therefore, the diversity of organizational forms is isomorphic to environmental diversity. The concept that best captures the process of homogenization is an isomorphism (DiMaggio & Powell, 1983).

Institutional isomorphic change occurs by three types of mechanisms: coercive, mimetic and normative pressures. These typologies are analytical since these types are not always empirically distinct (DiMaggio & Powell, 1983). These coercive, mimetic and normative processes are part of the institutional context (Greenwood & Hinings, 1996). The description below is one of the possibilities that the literature offers for analysis.

Coercive isomorphism stems mainly from political influence. It is the result of pressure from institutions, laws, public policies programs and regulations that enforce compliance, ensuring organizations are legitimately operating in the environment. The existence of a common legal environment affects many aspects of an organization's behavior and structure.

That can occur through direct the imposition of standard operating procedures (DiMaggio & Powell, 1983).

However, legitimated rules and structures also occur outside the governmental arena through direct authority relationships. They result from both formal and informal pressures exerted on organizations by other organizations upon which they are dependent and by cultural expectations in the society where organizations function (DiMaggio & Powell, 1983), such as supplier assessment programs.

Regulation is the most prominent mean of coercive isomorphism to boost the adoption of sustainable practices (Grob & Benn, 2014; Wijethilake, Munir & Appuhami, 2017). The regulatory requirements for social and economic sustainability practices mainly include labor laws, such as minimum wages, overtime payments, working hours, minimum employment age, health and safety conditions, employee welfare and employee governances (Wijethilake, Munir& Appuhami, 2017).

Environmental management systems, such as ISO 14001, are also important (Wijethilake, Munir& Appuhami, 2017). In this case, the search for certifications is coercive, regardless of being compulsory, because certificates also attest the adequacy to social expectations of certain groups or sectors (Santos, 2017).

In a case study with a large-scale multinational apparel manufacturing, Wijethilake, Munir & Appuhami (2017) identified that the coercive sustainability pressures were primarily stemming from government and regulators, transnational organizations, customers (such as retails) and the board of directors. Among different coercive pressures, demands from customers and directions from the board of directors were the strongest sustainability pressures.

Bansal (2005) proposes that firms subjected to fines and penalties become more sensitive to adopt sustainable practices since they have to search for more information on what they need to do to avoid further infractions. However, coercive governmental pressure is not sufficient. It alone does not lead to the continuous improvement of sustainability performance due to the ceiling effect since organizations can meet only the minimum governmental requirements (Rentizelas *et al*., 2018). In this sense, authority relationships are as important as governmental requirements. As proposed by Glover *et al*. (2014), powerful players in the supply chain use coercive isomorphic drivers to exert pressure on less powerful players to conform to their adopted environmental policies.

Mimetic isomorphism results from standard responses to uncertainty. It is the process where organizations imitate practices, services and processes of their competitors - well established or first movers - in order to achieve similar environmental standards. Models may

be diffused unintentionally, indirectly through employee transfer or turnover. Or they can be diffused explicitly by organizations, such as consulting firms or industry trade associations. Organizations tend to model themselves after similar organizations of the same field that they perceive to be more legitimated or successful (DiMaggio & Powell, 1983).

Through mimetic tendencies, organizations in the same industry sector adopt similar codes and systems. For example, a study conducted by Oliveira *et al*. (2014) found that in Brazil the food sector faces some institutional barriers affecting the willingness for companies to innovate. It makes them adopt mimetic behavior and focus only on incremental food innovation. However, mimetic isomorphism can be both a barrier or an incentive for innovations related to sustainability. The same investigation conducted by Oliveira *et al*. (2014), proposed that the introduction of innovation in the market might promote changes in the institutional environment which can affect patterns previously established by institutions.

Standards, voluntary agreements or supplier codes centered on sustainability act as pressures regarding sustainable practices (Chkanikova & Mont, 2015; Grob & Benn, 2014). Alliances and networks could also encourage the adoption of sustainable practices. These mimetic isomorphisms are frequently facilitated by third parts, NGOs or government to assist organizations (Grob & Benn, 2014; Chkanikova & Mont, 2015).

According to Bansal (2005), sustainable development involves a high level of uncertainty. It occurs because of changes in expectations, the complexity of problems and the difficulty of resolutions. Moreover, ideas sharing through formal and informal seminars, workshops, conferences and forums also exert mimetic pressures (Wijethilake, Munir & Appuhami, 2017). Following the best practices from leading companies in the industry, modelling customers (e.g., large scale retailers) and multinational corporations, benchmarking group level best practices and learning sustainability best practices from sustainability forums are relevant mimetic institutional pressures. Organizations may "mimic" their competitors if they insist on using specific sustainability practices for doing business with them (Wijethilake, Munir & Appuhami, 2017).

Normative isomorphism is associated with professional practices within sectors. It may relate to formal education. However, it may also relate to the growth and elaboration of professional networks. The exchange of information between professionals helps to contribute to the information flows, in the same way as personnel movement across organizations contributes. Therefore, universities, professional training institutions, professional associations and trade associations are important in the context where organizations are inserted (DiMaggio

& Powell, 1983). Institutional beliefs, rules and roles start to be coded into the structure of educational organizations (Scott, 1987).

Organizations' recognition from the government through grants or contracts process may give these organizations legitimacy and visibility. This could lead competing firms to copy aspects of their structure or operating procedures in hope of obtaining a similar reward (DiMaggio & Powell, 1983).

The literature proposes that educational institutions, professional bodies, associations and educational and professional networks help in the spread of sustainable practices through normative pressures (Grob & Benn, 2014; Horak, Arya & Ismail, 2018). Moreover, exposure to sustainable management, coupled with corporate social responsibility and ethical cultural orientations, positively influence the level of normative isomorphic pressure for undertaking sustainability initiatives (Horak, Arya & Ismail, 2018). Besides, the personal beliefs and philosophy of the CEO or other people are able to motivate sustainability practices and act as normative pressures (Wijethilake, Munir & Appuhami, 2017).

The media can be an important pressure to sustainability, once it can assign importance to some issues and expose gaps in others. Therefore, the media can shape the norms of acceptable and legitimated sustainable practices (Bansal, 2005). Negative publicity in media and NGO's press drives companies to bring the social impacts of food production in developing countries on their agenda (Chkanikova & Mont, 2015).

Customers' demands and expectations were identified as drivers of sustainability (Chkanikova & Mont, 2015). It is the case of political consumerism, which see their shopping choices as an exercise of political power and moral responsibility (Piacentini, MacFadyen& Eadie, 2000).

Moreover, increasing sustainability expectations by business partners act as pressure for greening agri-food systems (Chkanikova & Mont, 2015). Therefore, commercial-based socialization of organizations that have high levels of sustainable orientation positively influences the level of normative isomorphic pressure for undertaking sustainability initiatives (Horak, Arya & Ismail, 2018).

2.1.2 Agency within Institutional Theory

Agency here is defined as "a temporally embedded process of social engagement, informed by the past (in its habitual aspect), but also oriented toward the future, as a capacity to imagine alternative possibilities, and toward the present, as a capacity to contextualize past

habits and future projects within the contingencies of the moment" (Battilana & D'Aunno, 2009, p. 47).

Although the main focus in the works of Meyer and Rowan (1977) and DiMaggio and Powell (1983) is on conformity to institutional pressures, all have addressed, in more or less detail, the possibility for institutional change. Institutional change is understood as an outcome of the dynamic interactions between incompatible institutional arrangement and human praxis. This can be considerate as a political action embedded in a historical system of interconnected and incompatible institutional arrangements (Seo & Creed, 2002).

Organizations do often adapt to their institutional environment, but they also play active roles in shaping those contexts (Meyer & Rowan, 1977). They can exert strategic choices in response to institutional pressures. This means that can be room for the agency through the lens of Institutional Theory. More and more theorists have started to acknowledge there can be room for an organization to make a strategic choice about whether or not to blindly conform to institutional pressures (De Lange, 2019; Kondra & Hinings, 1998; Lok & Willmott, 2019; Tracey, Phillips & Jarvis, 2011). Institutional Theory has also a contribution to understanding organizational change, which goes beyond the ideas of inertia and persistence (Greenwood & Hinings, 1996; Tracey, Phillips & Jarvis, 2011).

Organizational success is not merely based on blind conformity. Organizations can conform to institutional pressure, but they also can have some resistance. The active organizational resistance varies from passive conformity to proactive manipulation (Oliver, 1991). Therefore, prevailing institutional pressures enable and constrain an actor´s agency. Such actors respond by adapting organizational forms to better fit this institutional environment in which they find themselves (Pratt & Foreman 2000).

If a field is highly isomorphic, it is reasonable to assume that the organizations will have a relatively small-level of variation. This would be reflecting on their outcomes. Risk aversion may encourage managers to seek performance stability related to lower risks based on the standards of the organizational field. However, organizations that deviate from those norms may have divergent outcomes from those that conform. Therefore, if they wish to have substantially different performance, it is necessary to have a different organization. It means that even in the most institutionalized field, there has to be some variation and diversity in organizational forms (Kondra & Hinings, 1998).

New organizational forms that operate outside institutional norms can emerge either by choice or by chance. By undertaking environmental scanning, an opportunity or threat may be identified by a new or existing organization. For example, a perceived threat, such as a

consumer-driven change in markets or a proposed change in legislation, may encourage organizations to anticipate this change and create new routines or strategies to deal with that threat. In these situations, institutional norms are violated, and diversity is introduced (Kondra & Hinings, 1998).

Through the exercise of active agency, risk-taking organizations may become a high performing and, thus, be imitated ("mimicked") - possibly changing the institutional environment - or they may have coercive institutional forces raised against them. For example, other organizations may go against a company that has performed better and exercise coercive powers against, in the sense that the company is obliged to comply with some current institutional norm that has a negative impact on its performance; other organizations may mimic the innovative ones, or they may be ignored if other organizations do not feel threatened. In this sense, it is important to differentiate between organizations seized by paradigm stasis, i.e., normative processes, and those that comply with institutional norms for pragmatic reasons, i.e., active agency. Those that change by institutional norms for pragmatic reasons may have the lowest risk of organizational death due to their heightened responsiveness to their environment (Kondra & Hinings, 1998).

Santos (2017) identified the existence of institutional influences on the implementation of organizational innovations. In this sense, the study by Tolbert and Zucker (1999) brings theoretical contributions to organizational studies, providing insights into the process of construction and reconstruction of organizational arrangements. Indeed, it aligns with the recent interest in the dynamic processes that cause transformations of organizational fields rather than the isomorphic forces that stabilize those (Van Wijk *et al*., 2013).

Since organizations mediate environmental pressures to shape their environment, it is necessary more reflective and proactive responses to external pressures. In addition, it is necessary to find ways to influence the nature of external standards in the environment (Bromley & Powell, 2012). Little is known about whether and how organizations respond to institutional pressures to sustainability (Beddewela & Fairbrass, 2016).

Institutional Theory would therefore need to explain not only the mechanisms by which organizations respond to the environment where they are inserted, but also how organizations influence institutional change, giving rise to new organizational forms, new mechanisms of legitimation and the role of institutional entrepreneurship (DiMaggio & Powell, 1991). Institutional Theory is an increasingly used theoretical lens for entrepreneurship research (Bruton, Ahlstrom & Li, 2010).

2.2 Institutional Entrepreneurship

DiMaggio (1988) introduced the concept of institutional entrepreneurship. It is a categorical type of what neo-institutionalists refer to as "institutional work" (Lawrence & Suddaby, 2006). The concept has emerged to help answer the question of how new institutions arise and change (Bruton, Ahlstrom & Li, 2010), since it tries to explain how actors can contribute to institutions' changes, despite institutional pressures towards an isomorphism to the status quo (Holm, 1995; Seo & Creed, 2002). As a complement to the concept already presented in the introduction section, institutional entrepreneurship refers to the activities performed by actors who leverage resources to create new institutions or to transform existing ones (Maguire, Hardy & Lawrence, 2004).

Institutional voids, which can exist in both formal and informal institutions, are also capable of influence entrepreneurial behavior that is favorable to develop institutional entrepreneurship (Webb, Khoury & Hitt, 2019). One definition of the institutional void is provided by Mair and Marti (2009): it is the absence of institutions that support markets in contexts that are already rich in other institutional arrangements. The definition adopted in this thesis is provided by Agostini, Bitencourt and Vieira (2020): institutional voids are failures, caused mainly by the absence of the state and asymmetry in the market, intensified by society beliefs, rules and culture. They intensify social inequalities because of the absence, weakness or nonfulfillment of the role that is expected of the institutions (Agostini, Bitencourt & Vieira, 2020). Despite the definition of these authors includes cultural, social and economic aspects, it is understood that behaviors that reflect on environmental issues can also be part of institutional voids, thus incorporating the three tripods of sustainability.

Hardy and Maguire (2008) propose that institutional entrepreneurs use strategic interventions in order to promote institutional change. According to them, these interventions can be in relation to the mobilization of resources, the construction of new rationales through which new practices are developed and legitimated (using, for example, discursive processes), and the forging of new inter-actor relations.

Institutional entrepreneurs can include, for example, entrepreneurs creating new business models, industrial models, NGOs configurations (Levy & Scully, 2007; Lounsbury, Ventresca & Hirsch, 2003; Wijen & Ansari, 2007). To be successful, i.e., to promote their organization or field (Bruton, Ahlstrom & Li, 2010), these entrepreneurs need to influence legislative or regulatory frameworks, affect cultural norms or values, beliefs or establish some structures or processes as taken-for-granted (Battilana, Leca & Boxenhaum, 2009; Lawrence,

1999; Rao, Morrill & Zald, 2000). Institutional work, among other possibilities, can serve to mobilize allies, to create common understandings of new system configurations, and to create legitimizing narratives of new institutional arrangements (Heiskanen, Kivimaa & Lovio, 2019).

The idea of institutional entrepreneurship is raising the paradox of embedded agency (Greenwood & Suddaby, 2006). It is in light of this critique of new Institutional Theory, there has been a surge of interest in the role of agency in institutional change and a corresponding interest in the idea of institutional entrepreneurship. This concept is seen as offering one theoretical possibility of understanding the emergence of new norms and practices within fields (Seo & Creed 2002).

The concept of institutional entrepreneurship is sustained by several related elements. It is a political process characterized by contests between relevant field-level participants (Beckert 1999, Levy & Scully 2007; Seo & Creed, 2002). It involves the capacity to alter or create systems of meaning through the strategic use of symbols, also creating new rules, altering institutionalized practices and/or the institutions at the field level (Munir & Phillips 2005). It emphasizes the central importance of legitimacy (Suchman, 1995). Therefore, institutional entrepreneurship involves the proactive development of strategies for legitimating institutions, the theorization of new practices through discursive and political means and the institutionalization of these new practices by connecting them to stakeholders' routines and values (Maguire & Hardy, 2006).

There are two enabling conditions for institutional entrepreneurship. The first one is the field characteristics. It relates to the existing conditions where the institutional entrepreneur is embedded and expects to influence. The second one is the actors' social position. It refers to a formal position (high-status position) and a legitimate socially constructed identity. (Battilana *et al.,* 2009).

Institutional entrepreneurship is an important aspect of the institutional dynamics that occur around the introduction of new organizational forms (Maguire & Hardy, 2006; Munir & Phillips, 2005; Tracey, Phillips & Jarvis, 2011). However, theorists did not go very far in investigating these dynamics yet. While new Institutional Theory has focused primarily on the taken-for-granted effects of institutions, institutional entrepreneurship points to the importance of agency in institutional processes. Institutions constrain but also enable action (Munir & Phillips, 2005).

Although the emergence of new organizational forms is one of the most important drivers of institutional change, researchers have only recently begun to investigate the generative processes of new organizational forms and their dynamics (Dacin, Goodstein &

Scott, 2002; Heiskanen, Kivimaa & Lovio, 2019). Ko and Liu (2020) found that institutional entrepreneurship involves three domains of institutional work: engaging commercial revenue strategies, creating a professionalized organizational form, and legitimating the social-commercial business model. Tracey, Phillips and Jarvis (2011) examine the kinds of institutional work required to create new organizational forms by institutional entrepreneurs. They found that it requires six distinct kinds of institutional work at three different levels.

At the individual level (micro), it is necessary to recognize an opportunity for bridging entrepreneurship by framing a problem and then developing a new solution through counterfactual thinking. It is important to note that problem framing is a type of institutional work that is rooted in the interests and experiences of the institutional entrepreneur. Based on these propositions, it is possible to analyze the profile of the entrepreneurs, their experience and their motivation to build a new organizational form. Besides, if there was an inspiration in other existing models, what is the objective of the organization and its form of operation (Tracey, Phillips & Jarvis, 2011). This individual level is analyzed in this research as the entrepreneurial process.

At the organizational level (meso), it is necessary to design the new organizational forms. It occurs by building an organizational template and theorizing an explanation for why this particular template makes sense as a solution to the problem they have reframed. For this, it is possible to analyze how the problem that such entrepreneurs propose to meet was reframed in relation to the traditional organizational models. For example, how they developed a set of structures and practices that would guide the behavior of organizational members and that became the basis of the new organizational form. As well, it is possible to analyze the business strategy, its evolution from the beginning and the obstacles faced, how they realized that the organization needed to make sense to stakeholders who were accustomed to different operation mode or structure and how they put it into practice, and the obstacles they faced (Tracey, Phillips & Jarvis, 2011). This organizational level is analyzed in this research as the mechanisms used by institutional entrepreneurs.

At a societal level (macro), institutional entrepreneurs have to work to legitimate the new form by connecting with appropriate macro-level discourses and aligning with highly legitimated actors. To understand how entrepreneurs seek to confer legitimacy upon new organizational forms, one should evaluate how they build relationships with highly legitimated actors in politics, media, business and non-profit sector. In addition, it is possible to evaluate what their discourse advocates (linguistic management), regarding the institutional context in which the organization is inserted - whether in relation to consumers, the market and politics

and their exposure in media. In this sense, obtaining the right to voice among a range of different stakeholders provides institutional entrepreneurs with a powerful strategic device that they can leverage to support their claims (Tracey, Phillips & Jarvis, 2011). Potential change and solutions to challenges faced by society (Ferraro, Etzion & Gehman, 2015; Heiskanen, Kivimaa & Lovio, 2019; Lawrence, Suddaby & Leca, 2011) can also integrate this category. This societal level is analyzed in this research as organizations driving positive social change.

The subsections below address the concept of new organizational forms and the one chosen for the analysis in this thesis (sustainable entrepreneurship), the entrepreneurial process, mechanisms used by institutional entrepreneurs and how they can produce positive social change.

2.2.1 Sustainable Entrepreneurship as a new Organizational Form

Organizations are heterogeneous entities composed of differentiated functionally groups pursuing goals and promoting interests. They are an archetypal configuration of structures and practices given coherence by underlying values, which are institutionally derived (Tracey, Phillips & Jarvis, 2011; Greenwood & Suddaby, 2006; Greenwood & Hinings, 1996).

An organizational form is a blueprint for organizational action, for transforming inputs into outputs. It can be inferred in different ways such as, by examining the formal structure of the organization and observing the patterns of activity within the organization - what is done by whom, or the normative order - the ways of organizing that are defined as proper (Hannan & Freeman, 1977).

The core idea is that organizations claim to perform specific and limited goals. Such claims are validated or not (legitimated) by society (Hsu & Hannan, 2005; Puranam, Alexy & Reitzig, 2014). This occurs since organizational forms are products of embedded social-organizational interactions. In this sense, new institutions are not created from scratch but built upon older institutions and must replace or push back preexisting institutional forms (Holm, 1995).

At one extreme, goals are the innermost feature of organizational forms and the most difficult to modify. At the other extreme, marketing strategy is relatively easier to change because organizations can introduce new products, reposition existing products or withdraw existing products. Other core characteristics are in a middle ground between these two extremes. A new organizational form differs from pre-existing forms when it is different in all four-core features - goals, authority relations, technology and served markets – or only on one

or two dimensions (Rao, Morrill & Zald, 2000). However, the standard of the solution novelty does not need to be new to the world, but it must at least be novelty relative to a comparable group of organizations. In this sense, it is useful to consider organizations with comparable goals (Puranam, Alexy & Reitzig, 2014).

The growing complexity of regulative, procedural and cultural changes affecting organizations has precipitated the increasing centrality of organizational change in recent decades. Over the last few years, the emergence of new organizational forms regained interest, especially related to who purposefully or unintendedly open-up potentialities by organizing differently at the margins of institutional arrangements (Cheney *et al.,* 2014).

In this sense, researchers of management and organization theory have shed light on a diversity of new organizational initiatives forms and innovations that subvert or avoid prevailing institutional arrangements. They create new organizational forms. These novel organizations have been emerging under different names and forms (Dentoni *et al*., 2018), such as alternative forms of capitalism (Parker, 2017), cooperatives (Cheney *et al.,* 2014), cross-sector partnerships (Johnson *et al*., 2018), inclusive business models (Vorley, Lundy & MacGregor, 2009), incubators (Ndabeni, 2008), innovation platforms (Kilelu *et al*., 2013), local markets (Brown & Miller, 2008), market-driven cooperatives (Francesconi & Heerink, 2011), partnerships (Vellema & van Wijk, 2015), multi-stakeholder partnerships (Dentoni, Bitzer & Schouten, 2018), stakeholders/ business platforms (Devaux *et al*., 2009), and social entrepreneurship (Dacin, Dacin & Tracey, 2011), for example.

The understanding of this thesis is that sustainable entrepreneurship can also be classified as a new organizational form. Social or sustainable entrepreneurship is an umbrella term for a variety of organizational innovations that target social and environmental challenges (Seelos *et al*., 2011). Sustainable entrepreneurship is different from social entrepreneurship. A business must address the social and economic dimensions of sustainability to be considered social entrepreneurship (Belz & Binder, 2017). Sustainable entrepreneurship has a necessary requirement: to address, at the same time, economic, social and ecological goals - the triple bottom line approach (Cohen, Smith & Mitchell, 2008). The common point is that both are able to solve problems not addressed by either the regular market or the public sector (Kuratko, 2016; Yitshaki & Kropp, 2016). According to the perspective provided by Agostini, Bitencourt and Vieira (2020), they address institutional voids, which can be considered as failures, caused mainly by the absence of the state and asymmetry in the market intensified by society beliefs, rules and culture. Therefore, these ventures are increasingly lauded as catalysts for change in

society by researchers, policymakers, practitioners and media (Gordon *et al*., 2018; Margiono, Zolin & Chang, 2018; Renko, 2013).

Even though the contributions of successful sustainable entrepreneurship to society are of great importance, the empirical phenomenon itself is still rare (Renko, 2013). A key challenge both for researchers and practitioners is to understand and promote such practices (Fors & Lennerfors, 2019). This knowledge is relevant since these organizational forms can shape new organizational and cultural practices that somehow become legitimated by their entrepreneurship activity, driving (positive) institutional change (Courpasson, 2016). This leads to consider the motivations behind entrepreneurial actions, what forms of organizing they produce, the cultural meanings and moral underpinning they rest on, what kind of change they produce, and how is it possible to assess the outcomes and legitimacy of such changes, for example.

2.2.2 Sustainable Entrepreneurial Process

The investigation related to the sustainable entrepreneurial process (SEP) helps to empirically analyze the first and the second specific objectives (SO) in this thesis (to identify and describe the operation of first movers' entrepreneurs addressing FLW solutions; to understand the process related to the emergence of the enterprise). Several authors propose frameworks to analyze the entrepreneurial process. The chosen analysis model is from Mets, Raudsaar and Summatavet (2013) and Raudsaar and Mets (2016) since it allows analyzing factors that precede the entrepreneur's motivations to their business model.

Mets, Raudsaar and Summatavet (2013) and Raudsaar and Mets (2016) propose a four-phase model: idea generation, opportunity recognition, opportunity development and venture launch. Venture launch could also be understood as opportunity exploitation. Each phase of the entrepreneurial process is the result of a combination of physical and mental shapes, which it is possible to group into silos related to each stage: propositions, idea development, concept development and business development. The content of a silo is not static since there is a reciprocal interaction between its components as well as interaction with the main SEP. The sub-processes are briefly described below and are detailed in Paper 1 in the Results section.

The idea generation is the result of several propositions, which relates mainly to motivation, prior knowledge and the skills/capabilities of the entrepreneur. Opportunity recognition is the output of the idea development. This silo relates to social assets, goals and social needs (Mets, Raudsaar & Summatavet, 2013; Raudsaar & Mets, 2016). As in the previous

stage, the recognition of sustainable opportunities is affected by prior knowledge (George *et al*., 2016; Hanohov & Baldacchino, 2018; Karhunen *et al*., 2011; Shane, 2000) and communal context, motivation for personal gains, such as earn money, and/or motivation to develop gains for others - altruism. The entrepreneur knowledge moderates it. Action such as socialization can enhance entrepreneurs' knowledge of natural and communal environments since personal situations and circumstances also contribute to their process of opportunity recognition. Family background, engagement in sustainability movements and media can help to achieve it (Hanohov & Baldacchino, 2018). It can also involve extensive reading, conversations with others who work in the field, travelling to new places, attendance at professional meetings and workshops, and general absorption of information (Karhunen *et al*., 2011). One study conducted by Genus *et al*. (2020) found that family and personal networks exert some level of influence in the individual level of institutional entrepreneurship.

As a solution to a particular social or ecological problem becomes feasible, and as market needs become more precise in terms of value sought by selected customer groups, the initial idea progresses, and a business concept emerges (Belz & Binder, 2017). Opportunity development is the outcome of several activities related to the business concept development, such as marketing mix, business model and available resources (Mets, Raudsaar & Summatavet, 2013; Raudsaar & Mets, 2016).

At some point, the individual will evaluate whether it is worthwhile to move to exploitation it or not (Vogel, 2017). Business development first relates to preparing the venture to be launched. It involves the formation of strategy, acquiring any missing tangible and intangible resources, such as teambuilding. It also relates to legal requirements. The outcome is the venture launch that could also be understood as opportunity exploitation (Mets, Raudsaar & Summatavet, 2013; Raudsaar & Mets, 2016). At this point, the sustainable product/service is commercialized in the market (Belz & Binder, 2017).

Sustainable entrepreneurship differs from conventional entrepreneurship in terms of value creation and impact (Vuorio, Puumalainen & Fellnhofer, 2018; Shin & Park, 2019). Over time, several forms of impact measurements have been proposed. However, the impact in society is a social construction involving different stakeholders, so it is not possible to establish a unique standard. A good framework of analysis should consider stakeholder needs in each situation (Costa & Pesci, 2016). In this sense, according to the situation, possible positive impact can relate to individual lifestyle factors, social and community networks, cultural and environmental conditions, human rights, economic development, education, citizenship and health (González, Husted & Aigner, 2017; Gordon *et al*., 2018). Therefore, sustainable

entrepreneurs (SE) may provide means of working with individuals, households and communities to build their capabilities and resilience when facing inequalities, creating a more sustainable society. The measurement of the positive impact was included as part of the analysis of the sustainable entrepreneur process in order to be able to assess the entire business cycle. In addition, the inclusion of the measurement of positive impact helps to provide initial answers to the fourth SO of this thesis (to propose indicators of institutional positive change generated by the agency of these entrepreneurs addressing FLW solutions).

2.2.3 Mechanisms used by Institutional Entrepreneurs

The investigation related to the mechanisms used by institutional entrepreneurs helps to empirically analyze the first, the third and partially the fourth research questions in this thesis (to identify and describe the operation of first movers' entrepreneurs addressing FLW solutions; to analyze the mechanisms used by these entrepreneurs to influence the institutional environment; propose indicators of institutional positive change generated by the agency of these entrepreneurs addressing FLW solutions).

Taking as an example the case of FLW, in which the classical current of Institutional Theory explains for inertia in solving the problem due to institutional pressures (or institutional voids). Considering that the predominant logic in the food sector appears to be one of cost reduction and profit maximization (Glover *et al*., 2014), it is necessary to understand how these sustainable entrepreneurs realize to transpose this logic and act to generate sustainable multiple values - environmental, social, and economic.

Sustainable entrepreneurship endeavors are often discussed as a hybrid business since they face some relevant tensions to reconcile their social and environmental goals with economic success (Hahn, Spieth & Ince, 2018). In this sense, while hybrid organizational theory identifies managerial tensions driven by the multiple types of value-focused entrepreneurs are trying to create (Pache & Santos, 2013), the sustainable entrepreneurship literature suggests that holistic business models can exist, where the social, environmental and economic value can be mutually-supportive (Davies & Chambers, 2018; Schaltegger, Lüdeke-Freund & Hansen, 2016). To ensure the best possible transition towards a more sustainable economy, it is necessary to understand how it is possible to develop new products, processes and business models that significantly create a positive impact on society (Bocken *et al*., 2019), minimizing possible tensions that may arise.

Thus, the analysis of the business model is one of the possibilities that allows to understand how sustainable entrepreneurs innovate to overcome hybridity related tensions to achieve their environmental, financial and social goals, i.e., the mechanisms used by institutional entrepreneurs. Although the concept of business models varies (Amit & Zott, 2001; Boons & Lüdeke-Freund, 2013; Zott, Amit & Massa, 2013), in order to set our analysis, this thesis utilize the concept provided by Osterwalder, Pigneur and Tucci (2005). The concept provided by Osterwalder, Pigneur and Tucci (2005) is widely used and accepted: a business model is "a conceptual tool containing a set of objects, concepts and their relationships with the objective to express the business logic of a specific firm […] what value is provided to customers, how this is done and with which financial consequences."

Since business models seek to explain both value creation and value capture (Zott, Amit & Massa, 2013) Osterwalder, Pigneur and Tucci (2005) provides an initial clarification of the pillars of business models, with four elements of analysis related to the product, customer interface, infrastructure management and financial aspects. Subsequent revisions consolidated the core elements of a business model: value proposition, value creation/delivery and value capture (Osterwalder & Pigneur, 2010). These elements are briefly described below and were described in detail in Paper 2 in the Results section.

The value proposition describes the bundle of products and services developed by a business to create value for its target customers, and the types of existing customer relationships (Osterwalder, Pigneur & Tucci, 2005; Osterwalder & Pigneur, 2010). It refers to what value is embedded in the product/service (Schaltegger, Lüdeke-Freund & Hansen, 2016; Boons & Lüdeke-Freund, 2013). Value creation and delivery relate to key organizational activities, which develop the market offering. It also relates to resource acquisition, channel management, partner management and the use of technology (Osterwalder & Pigneur, 2010). In other words, it relates to resources and infrastructure and under which circumstances the company promotes value creation (Schaltegger, Lüdeke-Freund & Hansen, 2016). Value capture relates to the revenue streams and cost structures of the enterprise (Schaltegger, Lüdeke-Freund & Hansen, 2016; Osterwalder, Pigneur & Tucci, 2005; Osterwalder & Pigneur, 2010; Bocken *et al*., 2014).

In addition to the business model, other authors contribute to advancing the understanding of the mechanisms used by institutional entrepreneurs. Most notably, Suddaby and Greenwood (2005) introduce the idea that some organizational forms are created through a discursive process on the part of institutional entrepreneurs. As proposed by Renko (2013), nascent social entrepreneurs with highly novel ideas would be well advised to focus on activities

that can establish legitimacy and stakeholder support in the marketplace early on. Highly innovative social entrepreneurs especially should invest a bulk of this time into educating the marketplace and stakeholders on the potential social impact of their novel solutions (Renko, 2013). Education can be a catalyst for changes in consumer behavior toward more sustainable individual practices. However, consumer education is considered a potential cause of the failure of sustainable business models since many of them fail to convince consumers about the benefits of sustainable products (Todeschini *et al.,* 2017).

Discursive strategies are able to produce new concepts, objects and subject positions, transforming existent meanings (Munir & Phillips, 2005). By their very nature, new organizational forms or business models can be difficult to describe and understand, as they often challenge the status quo. In this sense, the narration is an underestimated art in the organizational context. Storytelling forces listeners to open their minds to new possibilities, and it is a powerful legitimizing tool (Osterwalder & Pigneur, 2011; Zilber, 2007).

Heiskanen, Kivimaa and Lovio (2019), analyzing the energy sector, suggest that institutional entrepreneurs align several different types of work and resources, and they make propositions and empirical observations about characteristics of successful institutional change that might be relevant for practicing institutional entrepreneurs in their quest for sustainability: successful institutional entrepreneurs engage in technical, cultural and political work when creating new institutions. Ben-Slimane, Justo and Khelil (2020) proposes that there are two main strategies used by institutional entrepreneurs: idealization around a theme and encouraging the community to take advantage of its potential.

Lawrence, Suddaby and Leca (2009) deepens this vision and characterized three types of work in the creation of new institutions. The first is political work that entails advocacy through a given situation. Second is technical work that involves the creation of links between a novel and institutionalized practices, as well as the education of others to use these new models. Finally, there is cultural work, which focuses on institutional diffusion and the creation of legitimacy by framing the new institutional arrangement s to appeal to wider cultural values in the context. In this sense, Devaux *et al*. 2009, observing the participatory market chain approach, identified three phases capable of market development, stimulating social learning, building trust and fostering joint actions among the actor of the food supply chain in which it is.

Another significant question is that organizational fields accomplish forms of social control that can select or repress new organizational forms. They are able to set many of the

political constraints and opportunities that new organizational forms face as they emerge and attempt to sustain themselves (Rao, Morrill & Zald, 2000). For example, an organization that adopted a new organizational form and achieved competitive success in the marketplace would produce pressures on other organizations to adopt the same organizational form (Greenwood & Hinings, 1996). Establishing legitimacy via institutional entrepreneurship is an important dimension of the innovation and sustainability journey (Mylan, 2017).

Therefore, it is proposed that the emergence of new organizational forms have the capacity to promote market modernization and can offer increased economic opportunities for producers, consumers, entrepreneurs and other actors in the food chain (Vorley, Lundy & MacGregor, 2009). It is also able to promote sustainability practices and, to some extent, achieve social justice along agri-food value chains (Vellema & van Wijk 2015), as could be the case of food waste solutions.

2.2.4 Organizations Driving Positive Social Change

The investigation related to organizations driving positive social change helps to empirically analyze the fourth research questions in this thesis (to propose indicators of institutional positive change generated by the agency of these entrepreneurs addressing FLW solutions). It is based on the proposition that institutional entrepreneurship is expected to support practical efforts toward positive social change (Heiskanen, Kivimaa & Lovio, 2019).

Positive social change can be defined as the process of transforming patterns of thought, behavior, social relationships, institutions, and social structure to generate beneficial outcomes for individuals, organizations, communities, and/or society (Stephan *et al*., 2016). This change includes the reconceptualization of ideas and practices and their renaming and redefinition (Baker, Storbacka & Brodie, 2019). In this sense, according to the situation, possible positive impact can relate to individual lifestyle factors, social and community networks, cultural and environmental conditions, human rights, economic development, education, citizenship and health (González, Husted & Aigner, 2017; Gordon *et al*, 2018).

When analyzing impacts as a process, it is possible to evaluate how different organizational forms affect society during different stages of development. In this sense, it is possible to identify four broad domains: (a) environment: for example, increased energy conservation, recycling and responsible consumption; (b) social and economic inclusion: for example, empowered marginalized groups and improved educational attainment; (c) health and well-being: for example, increased preventive and reduced health risk behaviors; and (d) civic

engagement: for example, increased community volunteering, charity and responsible investing. Positive social change projects may involve several domains simultaneously (Stephan *et al*., 2016). These are the categories relevant for analysis.

Value shaping can be considered as another output of positive social change. It is the process whereby value is created and shared within the system of activities that constitutes the marketspace (Fry, Previte & Brennan, 2017). Communicating and education individuals, motivating incentives and exerting normative or coercive pressures may result in individuals to engage in more positive behavior. The reasons for this behavior may vary from the construction of new meanings or knowledge, financial rewards, recognition image, socials and/or normative pressures (Stephan *et al*., 2016).

Financial outputs can also be related to positive social change. Typically, it refers to cash resources but may also include stocks, bonds, receivables, promissory notes, and other assets that can be converted to cash. It is possible to provide empowerment of individuals or community members through commercial ventures that generate revenues and transfer some of that pecuniary wealth to the community in which they are active. It can also concentrate on creating economic self-sufficiency (Lumpkin, Bacq & Pidduck, 2018).

Regarding institutional voids, a study conducted by Agostini, Bitencourt and Vieira (2020) identified that innovations made by some social enterprises in the coffee sector contribute towards filling institutional voids by creating what they call a "self-revolving system of activity expansion". This system aim is to scale the social and economic development of a particular community. In the case investigated, this occurred in four ways. The first is to establish a more productive relationship between small local producers. The second is to add value to the product. The third is to encourage social and economic empowerment. And the fourth way is to organize local economic activities. Institutional voids acted as triggers for these innovations. And these innovations promoted changes in the institutional environment in which the voids had been identified. Therefore, they conclude that social innovations are context-dependent and that institutional voids are filled when the process of innovation is institutionalized. In the institutionalization process, the scalability of innovations is important. Although they do not mention it, this conclusion dialogues with the embedded agency theory.

There are also other options to promote positive social change. Training, providing social learning, encouragement, and personal experiences may result as individuals engaging in a positive behavior as they develop new skills and confidence. Establishing empowering opportunity structures, such as influence possibilities, enabling access to resources, and build social capital, as well as rearranges the environment, may result in better access to information,

resources, and restructures decisions environment that facilitates change (Stephan *et al*., 2016). Reduce poverty and increase social justice are also relevant output from a positive social change (Biggs, 2008) that can be analyzed.

2.3 Empirical Context: Food Loss and Waste

Both food loss and waste (FLW) can be defined as a decrease in quantity or quality of food along the food supply chain. Although it has already been explained in the introduction, it should be noted that, empirically, it considers food losses as occurring along the food supply chain from harvest/slaughter/catch up to, but not including, the retail level. Food waste, on the other hand, occurs at the retail and consumption level. This concept is aligned with the 2030 Agenda for Sustainable Development (FAO, 2019, p. 14).

Around 25-33% of all the food produced in the world is either lost or wasted (FAO, 2013; Gustavsson *et al*., 2011; Kummu *et al*., 2012). Food is wasted throughout the whole supply chain, from initial agricultural production down to final household consumption (Gustavsson *et al*., 2011). Overall, on a per-capita basis, much more food is wasted in the industrialized world than in developing countries (Gustavsson *et al*., 2011; Parfitt *et al*., 2010). In addition, in medium - and high - income countries, food is to a significant extent wasted at the consumption stage, i.e., discarded even if it is still suitable for human consumption (Bio Intelligence Service, 2010; Buzby & Hyman, 2012; Gustavsson *et al*., 2011). There are social, cultural, economic, and institutional factors that may influence household food waste practices (Parizeau & von Massow, 2015).

In low-income countries, food is lost mostly during the early and middle stages of the food supply chain (Gustavsson *et al*., 2011; Parfitt *et al*., 2010). The causes of FLW in medium/high-income countries mainly relate to consumer behavior, as well as to a lack of coordination between different actors in the supply chain. At a consumer level, insufficient purchase planning, expiring 'best-before-dates' in combination with the careless attitude of those consumers who can afford to waste food are the main causes (Gustavsson *et al*., 2011).

In low-income countries, the causes mainly connect to financial, managerial and technical limitations in harvesting techniques, storage and cooling facilities in difficult climatic conditions, infrastructure, packaging and marketing systems. Other factors that may also

contribute to FLW are quality standards, which reject food items that are not perfect in shape or appearance (Gustavsson *et al*., 2011).

Besides some authors understanding that food wasted at the consumer level is minimal in developing countries (Gustavsson *et al*., 2011), the dietary transition occurring in countries of the BRICS (Brazil, Russia, India, China and South Africa) can lead to similar patterns of food waste to those of developed ones (Parfitt *et al*., 2010). Therefore, mitigating food loss and food waste are both relevant.

Table 1 provides some examples of the causes of FLW at broad stages of a generic food supply chain:

Table 1 - Causes of food loss and waste in the food supply chain

Agricultural production
• Climatic conditions;
• Consumption or damage by insects, rodents, birds or microbes;
• Crops sorted out post-harvest;
• Difficulty on predicting the number of buyers/customers;
• Failure to meet quality standards set by retails, due to rigorous quality standards concerning weight, size, shape and appearance of crops;
• Industry or government food safety regulations or standards may cause some products to be rejected for human consumption;
• Inefficiencies due to mechanical damage and/or spillage during harvest operation;
Post-harvest transportation, handling, storage and processing
• Consumption or damage by insects, rodents, birds or microbes;
• Contamination in process causing loss of quality;
• Crops sorted out if not suitable to process or during washing, peeling, slicing and boiling or during process interruptions and accidental spillage;
• Grain spillage from sacks;
• Lack of cooling/cold storage;
• Natural deterioration and shrinkage;
• Moisture;
• Pests, diseases, spillage, contamination, natural drying out of food;
• Spillage, bruising and degradation during handling, storage and transportation between farm and distribution;
Distribution: wholesale markets, supermarkets, retailers, wet markets and restaurants
• Attitudes (for example, the practice of taking leftovers home from restaurants is not universally accepted);
• Dented cans and damaged packaging;
• Difficulties in anticipating demand, resulting in overstocking;
• Handling damage;
• Improper stock rotation;
• Lack of cooling/cold storage;
• Lack of coordination between retailers, distributors, wholesalers and manufacturers across the supply chain;
• Marketing standards related to aesthetic issues or packaging defects cause some products to be rejected, although neither food quality or safety is affected;
• Natural deterioration and shrinkage;
• Overstocking;
• Poor handling;
• Portion sizes (related to bigger size portions products and waste in self-service restaurants)
• Technical malfunctions such as overproduction, misshapen products, product and packaging damage;
Consumption
• Aesthetic standards concerning weight, size, shape and appearance of food products;

• Attitudes: food undervalued by consumers and lack of necessity to use it efficiently;
• Confusion or misinterpretation over labelling issues regarding 'best before' and 'use by' dates;
• Food cooked, prepared or served too much;
• Impulsive buying (buying items they had not intended to);
• Lack of awareness;
• Marketing strategies: two for one deals can shift potential food waste to consumers by encouraging them to purchase more than needed;
• Natural deterioration and shrinkage;
• Not used in time regarding a date label;
• Poor food preparation technique (edible food discarded with inedible);
• Poor pre-shop planning (failure to check stocks);
• Poor storage/stock management in homes: discarded before serving;
• Preferences, since many nutritious parts of food are discarded due to personal taste (such as apple skins, potato skins, bread crusts);
• Socio-demographic factors, since younger people, single-person householders and higher income households tend to waste more food;
• Uneaten or leftover foods;

Source: based on Bio Intelligence Service (2010), Buzby *et al*. (2011), Buzby & Hyman (2012), FAO (2013), Gustavsson *et al*. (2011), Jaeger *et al*. (2018), Kummu *et al*. (2012), Parfitt *et al*. (2010)

There are several reasons why FLW are important. The first reason was pointed in the introduction: the world's population numbered nearly 7.6 billion as of mid-2017, will reach between 9.4 and 10.2 billion in 2050 (United Nations, 2017) and 70% of the world's population will be urban (compared to 49% today). This will require at least a 70% increase in food production (FAO, 209).

Food waste reduction is also important because there are negative externalities that arise throughout the entire lifecycle of food and adversely impact society and the environment. It represents a waste of resources used in production, such as land, water, labor, energy and inputs to produce food that is also wasted. It also leads to unnecessary CO2 emissions and air pollution caused by farm machinery and trucks that transport food. Moreover, food waste represents a loss of economic value of the food produced (Buzby *et al*., 2011; Gustavsson *et al*., 2011; Kummu *et al*., 2012; Lundqvist, de Fraiture & Molden, 2008; Nellemann *et al*., 2009).

The later a product is lost or wasted along the supply chain, the higher the environmental and social costs, as impacts arising for instance during processing, transport or cooking, will be added to the initial production impact (FAO, 2013). The greatest challenges will be meeting society's growing food needs while simultaneously reducing agriculture's environmental harm (Foley *et al*., 2011).

Strategies to tackle FLW are therefore needed to achieve environmentally sustainable food production (Foley *et al*., 2011) while ensuring food security (Godfray *et al*., 2010). A reduction of FLW would have a substantial positive effect on natural and societal resources. It would not only avoid pressure on scarce natural resources but would also decrease the need to raise food production to meet the 2050 population demand (FAO, 2013; Parfitt *et al*., 2010). In

fact, one billion extra people could be fed if half reduced FLW. It is considered one of the most promising measures to improve food security in the coming decades (Kummu *et al*., 2012).

Making better use of already available food with the current level of production would help meet future demand with a lower increase in agricultural production by increasing the efficiency of the whole food chain (FAO, 2013; Gustavsson *et al*., 2011). In this sense, since around half of the losses could be prevented with a more efficient supply chain (Kummu *et al*., 2012), implementing sustainable solutions across the entire food supply chain to fully realize the potential for food waste reduction is essential (Parfitt *et al*., 2010).

Some of the measures that could address FLW are coordination and cooperation across the supply chain. Also, developing market for 'sub-standard' products, regarding weight, size, shape and appearance, and food redistribution programs (Bio Intelligence Service, 2010; Gustavsson *et al*., 2011; Stuart, 2009). Promoting sales closer to consumers without having to pass the strict quality standards set up by supermarkets on weight, size and appearance (Gustavsson *et al*., 2011), and selling food products near expiry at low cost and regulatory measures (Bio Intelligence Service, 2010). Building awareness and triggering simple behavior changes is an important first step to reduce waste and to engage all sectors and consumers in food waste reduction (Bio Intelligence Service, 2010; Gustavsson *et al*., 2011; Jaeger *et al*., 2018; Stuart, 2009). Interventions that aim to encourage the purchase of suboptimal food are scarce, however, needed. Stimulus related both to environmental concern and to food waste problem awareness can be used to increase consumers purchase intentions towards suboptimal food products, i.e., fruits and vegetables with unusual appearance, products with damaged package and close to the expiration date (Stangherlin, de Barcellos & Basso, 2020).

Some factors are difficult to change. However, it is expected that behavioral factors encompassing shopping routines, food handling and provision are more flexible and easier to change. For it to happen, it is necessary to macro-environmental change, retailers' engagement, raising awareness of the FLW issue and creating anti-wastage social norms (Stangherlin & de Barcellos, 2018). While attempts to shift consumer behavior may result in a reduction in food waste, changes in business behavior towards more sustainable food production and consumption will also be necessary. An example might be through the development of closed-loop supply chain models. In such models, waste of all forms would be fed back into the value chain, food graded as lower quality for cosmetic reasons and foods that are surplus to retailer or manufacturers to be made available through alternative routes, while unavoidable food waste would be utilized as a by-product (Parfitt *et al*., 2010).

Correa (2011) investigated the operational breakdown due to the waste of commercially discarded foods and proposed an institutional arrangement to reduce waste in the retail supermarket. His research presents and discusses reverse and closed-loop channels as institutional models of coordination for the treatment and reduction of waste and social marketing as a tool to change behavior and generate benefits to society by organizations.

Other alternatives related to the closed-loop supply chain are food redistribution programs. Commercial and charity organizations can collect and sale, redistribute or use 'sub-standard', damaged or nearing expiry date products that would otherwise be discarded by retailers, even being still safe and of good taste and nutritional value (Gustavsson *et al*., 2011). For example, they can distribute it to a variety of groups in need, including the homeless, elderly, children and other communities in food poverty (Bio Intelligence Service, 2010).

It is in this context that there might be space for institutional entrepreneurship. As proposed by Dentoni *et al*. (2018) both agribusiness and the food sector have been experimenting with new organizational forms that conjugate the creation of social and commercial value. Perhaps institutional entrepreneurs can act to reduce FLW, providing positive social change.

2.4 Summary of Concepts

Table 2 presents a summary of the most relevant concepts presented throughout the theoretical background:

Table 2 – Main Concepts presented in theoretical background

Concept	Description
Institutional Theory	Organizational structures are embedded with socially shared meanings, in the sense that organizations are driven to incorporate the practices and procedures defined by prevailing rationalized concepts institutionalized in society (Meyer & Rowan, 1977).
Isomorphic forces	Organizations adapt their processes, structures and practices in order to ensure their actions are compatible with their contextual environmental requirements (Hsu *et al*. 2014), regarding their local, regional, national and/or international institutional context (Machado-da-Silva & Gonçalves, 1999). Institutional isomorphic change occurs by three types of mechanisms: coercive, mimetic and normative pressures (DiMaggio & Powell, 1983).
Agency	A temporally embedded process of social engagement, informed by the past (in its habitual aspect), but also oriented toward the future, as a capacity to imagine alternative possibilities, and toward the present, as a capacity to contextualize past habits and future projects within the contingencies of the moment (Battilana & D'Aunno, 2009, p. 47).
Institutional change	Institutional change is understood as an outcome of the dynamic interactions between incompatible institutional arrangement and human praxis. This can be considerate as a political action embedded in a historical system of

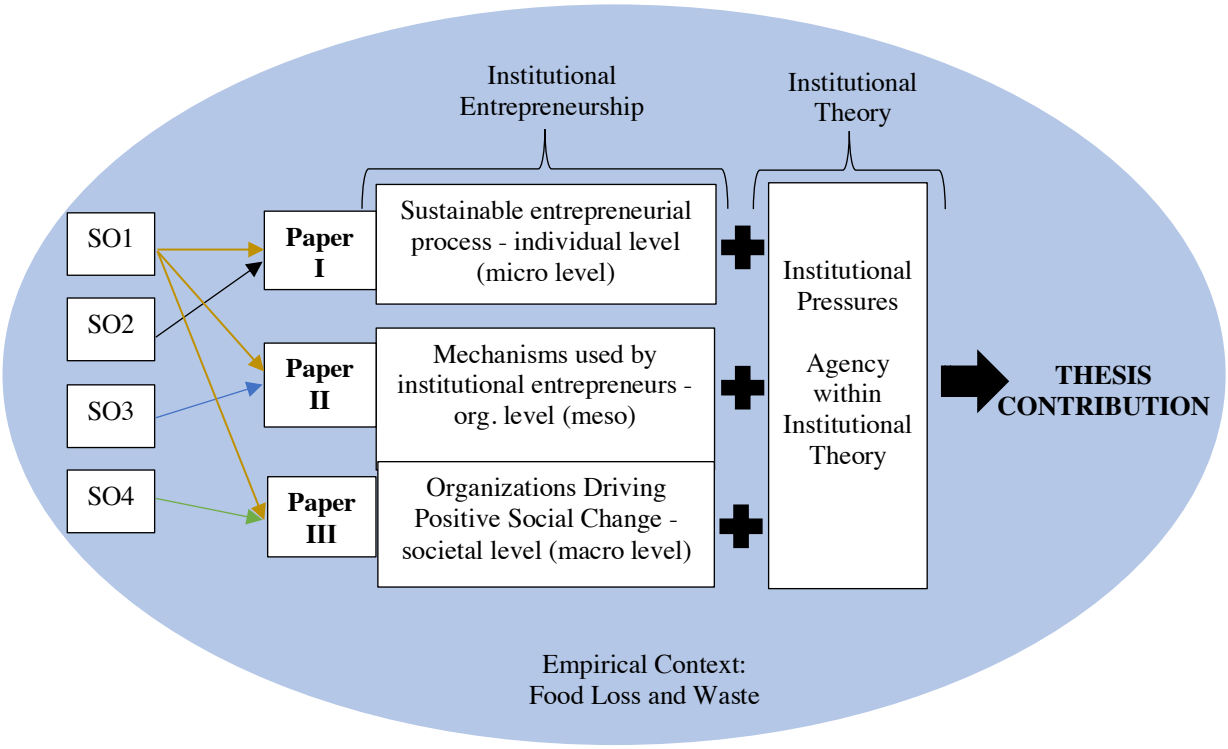
	interconnected and incompatible institutional arrangements (Seo & Creed, 2002).
Institutional voids	Institutional voids are failures, caused mainly by the absence of the state and asymmetry in the market, intensified by society beliefs, rules and culture. They intensify social inequalities because of the absence, weakness or nonfulfillment of the role that is expected of the institutions (Agostini, Bitencourt & Vieira, 2020). But they can also be related to negative environmental impact. They are capable of influence entrepreneurial behavior (Webb, Khoury & Hitt, 2019).
Institutional entrepreneurship	"Institutional work" (Dimaggio, 1988; Lawrence & Suddaby, 2006). To be successful, institutional entrepreneurs need to influence legislative or regulatory frameworks, affect cultural norms or values, or establish some structures or processes as taken-for-granted (Lawrence, 1999). The concept has emerged to help answering the question of how new institutions arise and change (Bruton, Ahlstrom & Li, 2010) despite institutional pressures towards an isomorphism to the status quo (Holm, 1995; Seo & Creed, 2002). Institutional entrepreneurs use strategic interventions in relation to the mobilization of resources, the construction of new rationales, and the forging of relations (Hardy & Maguire, 2008).
New organizational form	An organizational form is a blueprint for organizational action, for transforming inputs into outputs. It can be inferred in different ways, by examining the formal structure of the organization, patterns of activity within the organization - what is done by whom, or the normative order - the ways of organizing that are defined as proper (Hannan & Freeman, 1977). A new organizational form differs from pre-existing forms when it is different in all four-core features - goals, authority relations, technology and served markets – or only on one or two dimensions (Rao, Morrill & Zald, 2000).
Sustainable entrepreneurship	Sustainable entrepreneurship is conceptualized as a type of entrepreneurship that has a necessary requirement: to address, at the same time, economic, social and ecological goals - the triple bottom line approach (Cohen, Smith & Mitchell, 2008). The understanding in this thesis is that sustainable entrepreneurship can also be classified as a new organizational form.
Sustainable entrepreneurial process	It is the entrepreneur's process from idea generation, opportunity recognition, opportunity development to venture launch (Mets, Raudsaar & Summatavet, 2013; Raudsaar & Mets, 2016). It can also be related to the measurement of positive impact.
Business Models	It is a conceptual tool containing a set of objects, concepts and their relationships with the objective to express the business logic of a specific firm […] what value is provided to customers, how this is done and with which financial consequences (Osterwalder *et al*., 2005)
Positive social change	The process of transforming patterns of thought, behavior, social relationships, institutions, and social structure to generate beneficial outcomes for individuals, organizations, communities, and/or society (Stephan *et al*., 2016).
Food loss and waste	Food loss and waste can be defined as a decrease in quantity or quality of food along the food supply chain. Empirically it considers food losses as occurring along the food supply chain from harvest/slaughter/catch up to, but not including, the retail level. Food waste, on the other hand, occurs at the retail and consumption level. This definition also aligns with the distinction implicit in SDG Target 12.3 (FAO, 2019, p. 14)

Source: the author

All the concepts summarized above were incorporated, to a greater or lesser extent, throughout this thesis. Institutional Theory (and the whole section 2.1) is the main background used to investigate the four specific objectives. It served as the basis for the questionnaires during data collection and this theory is taken up with more emphasis during the Thesis Contribution (section 5), in which the results of the papers that analyze the specific objectives are discussed together. Institutional Entrepreneurship (and the whole section 2.2) have a more specific function. Initially, the concept of Sustainable Entrepreneurship is presented as a new organizational form. The sustainable entrepreneurial process is the theoretical background for paper I, which seeks to respond to the specific objectives (SOs) 1 and 2. Mechanisms used by institutional entrepreneurs serve as a theoretical background for paper II, which seeks to respond to SO 1 and 3. Both papers I and II provide some initial findings regarding SO4. In this way, Organizations Driving Positive Social Change serves as a theoretical framework for paper III, which seeks to respond primarily to SO 4, but also to complement the findings related to SO1. Finally, Food Loss and Waste is the Empirical Context.

Figure 1 presents the schema related to the theoretical background:

Figure 1 – Schema related to the theoretical background



Source: the author

3 GENERAL METHODOLOGICAL ASPECTS

This section will discuss general methodological aspects regarding research strategy, data collection, data analysis, and rigor of research explaining the points in common and the differences between the papers.

3.1 Research Strategy

Theory in management research falls along a *continuum*, from nascent to mature. The mature theory presents well-developed constructs and models that have been studied over time with increasing precision, with points of broad agreement that represent cumulative knowledge gained. Nascent theory, in contrast, proposes tentative answers to novel questions of how and why, often merely suggesting new connections among phenomena inductively, seeking to collect data as they emerge in the field. Intermediate theory's position is between nascent and mature and presents provisional explanations of phenomena, often introducing a new construct and proposing a relation between it and established constructs. Although the research questions may allow the development of testable hypotheses, similar to mature theory research, one or more of the constructs involved is often still tentative, similar to nascent theory research (Edmondson & McManus, 2007).

It is not always easy to determine the extent of theory development. In general, the fewer researchers know about a specific topic, the more open-ended the research questions (Edmondson & McManus, 2007). In this thesis, it is considered that the question about how first mover´s entrepreneurs exercise their agency and produce a positive social impact in the context of FLW solutions is between nascent to intermediary theories. Recent calls for papers that indicate the need for empirical studies to understand this phenomenon reinforce this argument (for example, Närvänen, Mattila & Mesiranta, 2020; Dentoni *et al*., 2018), as well other researches (such as Cheney *et al*., 2014; Dentoni, Bitzer & Schouten, 2018; Kilelu *et al*., 2013; Tracey, Phillips & Jarvis, 2011).

Based on this proposition, the case study is the research strategy chosen for the investigation. This strategy is indicated in situations when "how" or "why" questions are proposed. The researcher has little or no control over behavioral events, and the focus of the study is a contemporary phenomenon. Among the variations in case studies, it is possible to identify single or multiple cases (Yin, 2017). Regarding the type of case study, it was decided

to use multiple-case studies, in which the same case study covers multiple cases and then draw a single set of "cross-case" conclusions.

This thesis is based on three papers (the so-called hybrid thesis). The Figure summary of the Concepts (section 2.4) presents an overview between the specific objectives of the thesis and each paper. The contribution of each the paper is summarized in the section related to the thesis´s contribution (section 5), and at this moment the Institutional Theory is brought up again to discuss the theoretical advances of the thesis in relation to the agency of these entrepreneurs - the paradox of the embedded agency.

3.2 Data Collection

The process of data collection followed the Case Study Protocol proposed by Yin (2017). The Case Study Protocol made in the thesis has the following sections: research objective, cases selection criteria, approach to organizations, preparation for data collection, the conduct of interview and observation, validation of information, and return results to participants. Is available in Appendix I.

Case study evidence can come from at least six sources: direct observations, interviews, documents, archival records, participant-observation and physical artifacts (Yin, 2017). Theory-building researchers typically combine multiple data collection methods, gathering evidence from two or more sources, converging on the same findings (Eisenhardt, 1989; Yin, 2017).

Interviews are one of the most important sources of case study evidence since they can especially help by suggesting explanations (for example, by asking "how" and "why") of key events. Key informants are often critical to the success of a case study. The use of recording devices is a matter of personal preference. Audio recordings certainly provide a more accurate rendition of any interview compared to taking notes. However, a recording device should not be used when an interviewee refuses permission or appears uncomfortable in its presence (Yin, 2017). Combined with interviews, as proposes by Yin (2017), direct observations are also relevant since a case study will likely take place in the real-world setting of the case. Assuming that the phenomena of interest have not been purely historical, some relevant social or environmental conditions will be available for observation. It also provides additional information about the studied topic.

Specific information related to data collection will be presented individually in each paper given their particularities and the fact that each study was carried out at a different schedule, with different objectives and data collection process. However, it is noteworthy that one of the sources of data in this thesis, interviews with key informants who have performed in papers I, II and III - founders and responsible people for the business. All interviews were combined with observation visits. Businesses were visited and interviews were conducted with each entrepreneur and/or manager. In paper III, 54 interviews were also carried with stakeholders that are usually part of a vertical supply chain, such as producers, processing and distribution facilities, retailers and restaurants, as well as other stakeholders in the food sector, such as public agencies, cooperatives, trade unions, NGOs, food entrepreneurs and food banks. Moreover, 39 consumers were interviewed in paper III. All interviews were recorded and transcribed. A pilot study was prepared, with data collection tools being analyzed by fellow researchers, based on the suggestions of Goffin *et al.* (2019). After validation of the data collection instrument, observation visits were made and the interviews conducted (except in the case of consumers, which it was virtually).

The questionnaires used are in Appendix II.

Complementing the schema presented in the summary of the Concepts (section 2.4), the constructs used are exposed bellow in Table 3:

Table 3 – Constructs used to elaborate questionnaires

Specific Objective (SO)	**Literature Institutional Entrepreneurship**	**Literature Institutional Theory**	**Literature Food loss and waste**
SO1 To identify and describe the operation of first movers' entrepreneurs addressing FLW solutions	Boons & Lüdeke-Freund (2013); Davies & Chambers (2018); Hahn, Spieth & Ince (2018); Osterwalder & Pigneur (2010); Osterwalder, Pigneur & Tucci (2005); Rao, Morrill & Zald (2000); Schaltegger, Lüdeke-Freund & Hansen (2016); Zott, Amit & Massa (2013).	Auplat & Zucker (2014); Bansal (2005); Battilana, Leca & Boxenhaum (2009); Barin Cruz, Alves, & Delbridge (2017); Boström *et al.* (2005); Bruton, Ahlstrom & Li (2010); Bührman (2011); Chkanikova & Mont (2015); Chakrabarty (2009); Cruz, Alves & Delbridge (2017); Devaux *et al.* (2009); Dimaggio (1988); Dimaggio & Powell (2005); DiMaggio & Powell (1983); Eden & Miller (2004); Grob & Benn (2014); Holm (1995); Horak, Arya, & Ismail (2018); Hsu & Hannan (2005); Khanna & Palepu (2000); Levy & Scully (2007); Maguire & Hardy (2006); Maguire, Hardy & Lawrence (2004);	Bio Intelligence Service (2010), Buzby & Hyman (2012), Buzby *et al.* (2011), Canali *et al.* (2017), Correa (2011), FAO (2019), FAO (2013), Foley *et al.* (2011), Godfray *et al.* (2010), Gustavsson *et al.* (2011), Jaeger *et al.* (2018), Kummu *et al.* (2012), Lundqvist, de Fraiture & Molden (2008); Nellemann *et al.* (2009); Parfitt *et al.* (2010), Quested *et al.* (2013), Stangherlin & de Barcellos (2018); Stangherlin, de Barcellos & Basso
SO2 - To understand the process related to the emergence of the enterprise	Belz & Binder (2017); George *et al.* (2016); Guclu, Dees & Anderson (2002); Hanohov & Baldacchino (2018); Jiao (2011); Karhunen *et al.* (2011); Mets, Raudsaar & Summatavet (2013); Perrini, Vurro & Costanzo (2010); Raudsaar & Mets (2016); Shane (2000); Shaw & Carter (2007); Sedlmeier, Rombach & Bitsch (2019); Shin & Park (2019); Vogel (2017); Vuorio, Puumalainen & Fellnhofer (2018); Yitshaki & Kropp (2016).		

SO3 - To analyze the mechanisms used by these entrepreneurs to influence the institutional environment	Battilana, Leca & Boxenhaum (2009); Beckert (1999); Boons & Lüdeke-Freund (2013); Bocken *et al*. (2014); Devaux *et al*. (2009); Greenwood & Hinings (1996); Heiskanen, Kivimaa & Lovio (2019); Lawrence, Suddaby & Leca (2009); Levy & Scully (2007); Munir & Phillips (2005); Osterwalder, Pigneur & Tucci (2005); Osterwalder & Pigneur (2010); Rao, Morrill & Zald (2000); Schaltegger, Lüdeke-Freund & Hansen (2016); Seo & Creed (2002); Suddaby & Greenwood (2005); Tracey, Phillips & Jarvis (2011); Vorley, Lundy& MacGregor (2009); Zilber (2007); Zott, Amit & Massa (2013).	Mair & Marti (2009); Mair, Marti & Ventresca (2012); Mylan (2017); Munir & Phillips (2005); Nicolopoulou, North (1990); Karatas-Ozkan, Palthe (2014); Vas & Nouman (2017); Osterwalder & Pigneur (2011); Puranam, Alexy & Reitzig (2014); Rao, Morrill & Zald (2000); Seo & Creed (2002); Osterwalder & Pigneur (2011); Schrammel (2013); Scott (2001); Suchman (1995); Tracey, Phillips & Jarvis (2011); Wijethilake (2016); Wijethilake, Munir & Appuhami (2017); Zeng *et al*. (2017).	(2020), Stuart, 2009; Thyberg & Tonjes (2016).
SO4 - to propose indicators of positive social impact generated by the agency of these entrepreneurs addressing FLW solutions.	Baker, Storbacka & Brodie (2019); Bansal (2005); Beamon (1999); Biggs (2008); Devin & Richards (2016); DiMaggio & Powell (1983); Dukovska-Popovska & Loikkanen (2013); Fry, Previte & Brennan (2017); Ghosh & Fedorowicz (2008); Giannakis *et al*. (2012); Gulati & Singh (1998); Halloran *et al*. (2014); Horak, Arya, & Ismail (2018); Kouwenhoven, Reddy Nalla & Lossonczy von Losoncz (2012); Lumineau & Henderson (2012); Lumpkin, Bacq & Pidduck (2018); Pilbeam *et al*. (2012); Scott (1987); Stephan et *al*. (2016); Timmermans *et al*. (2014); Zeng *et al*. (2017).		

Source: the author

Another form of data collection performed in this thesis was through secondary sources of data. Secondary data were collected from websites, media, reports and information about new developments coming from these entrepreneurs. The analysis of social media posts included any post made by the entrepreneur, consumers or individuals in general that contained the name of the company. Instagram was the social network analyzed. As Yin proposes (2017), documentation, whether in paper or electronic, is likely to be relevant to every case study. They can be formal studies or evaluations related to the case, news clippings and other articles appearing in the mass media or community newspapers, minutes of meetings and other reports of events.

The cases selection that aims to develop theory is based on theoretical sampling. The theoretical sampling is characterized by the choice based on the pertinence of the cases in answering the research problem theory (Eisenhardt, 1989) and in the relevance of understanding the logic or the existing relation between the theoretical constructs to be investigated (Eisenhardt & Graebner, 2007). The selection of the cases in a multiple-case study should follow a replication logic or extend the emergent theory rather than sampling logic (Eisenhardt, 1989; Yin, 2017). The researcher should choose the cases that will most likely enlighten the research question. However, the selection also needs to be based on sufficient access to data whether to interview people, to review documents or to make field observations (Yin, 2017). It is common for researchers to plan the number of cases. This kind of planning may be necessary because of the availability of resources and time constraints. While there is no ideal quantity of cases, a number between four and ten usually works well (Eisenhardt, 1989).

The data collection related to first movers' sustainable entrepreneurs addressing food waste solutions, i.e., that is used in the discussion section of this thesis contribution, took place with seven cases / entrepreneurship in four different countries: Brazil, Canada, Denmark, and Finland. This diversity of places in data collection stems from the need to analyze entrepreneurial first movers in given contexts, i.e., national and regional contexts. There are still few entrepreneurs both in the general area of sustainability and specifically in the area of FLW in the world. The sum between the attention received by the media and news from these businesses and the research opportunities in Brazil and abroad received throughout the PhD process determined the choice of cases, in addition to other criteria also concerning scientific research – for example, cases in developing versus developed countries, the position of the country in the Organisation for Economic Cooperation and Development (OECD) Social Expenditure Database of 2019 (OECD, 2019), availability of the entrepreneurs to participate in the study - is better described in each study.

The data collected with seven cases are used to promote the discussion in this thesis is not restricted to collecting data only with these cases. For example, the Paper-I, which investigates the sustainable entrepreneurial process, made an effort to incorporate entrepreneurs from other sectors, seeking to understand this process more broadly. It should be noted that the results found have the same pattern between general entrepreneurs focused on sustainability and entrepreneurs who work with food waste solutions. Paper-II investigates business models innovations, i.e., the mechanisms used by entrepreneurs, to influence the institutional environment repeats the situation presented in relation to Paper-I. The cases were also added throughout the papers, as they followed the chronological order of data collection and the

elaboration of the studies. For example, the case in Canada became part of the investigation in paper II, when it was possible to be in this country to make an observation visit and interview to complement the secondary data collection.

Paper III, which proposes indicators of positive social impact generated by the agency of these entrepreneurs addressing FLW solutions had an exclusive focus on entrepreneurs addressing food waste solutions, as it seeks to understand the impacts in this sector specifically. However, this paper had the first phase of data collection carried out with 54 stakeholders related to the fruit and vegetable supply chain and other stakeholders in the food sector with the objective to understand coordination's problems related to FLW. This data collection was part of a broader research project, carried out in partnership with the Fundação Getúlio Vargas in Brazil. It preceded the other data collections, and it was essential to understand the problems faced along the supply chains, a necessary step to understand the impact of the action of these entrepreneurs.

Moreover, in paper III a case from Finland, which integrated papers I and II, were excluded due to the difficulty in obtaining secondary data to understand the business impacts. Unlike what happened in papers I and II, in which it was possible to find secondary data in English in media and posts on social media aligned with the research objective of the papers while searching for information that would help to answer the question investigated in paper III, there was insufficient information in English related to it in media and in posts on social media. Most part of the information was concentrated in the finish language. It is understood that a little of this difficulty, compared to other situations, is attributed to the fact that this entrepreneur is working on a business model exclusively focused on business to business, instead of business to consumer or mixed, as it is the cases of the other entrepreneurs. There was an attempt to make contact with customers of this business (it would be an important source of information), but as happened with the consumer database of entrepreneurs from other cases, the company did not feel comfortable to give this information, due to issues inherent to market protection. Therefore, it was possible to rely almost exclusively on the information of the person who was interviewed, and it would harm the data triangulation, decreasing the accuracy of the research. For this reason, this case was excluded from paper III. It should be noted that in this same paper III, the other case from Finland (which works on the business to consumer model) was maintained because there was a vast amount of secondary data in English, and it was possible to contact their customers using social media posts (this company also did not feel comfortable to give their customers database or to inform the contact of some of their customers).

It is important to note that, in relation to the interviews with consumers, carried out in paper III as one of the ways to obtain data to understand the impact of these businesses, none of the entrepreneurs allowed access to a customer database, so information about any potential customers who could be interviewed was obtained through social media posts. This was a very laborious and difficult process. For this reason, interviews with consumers were conducted with two cases, specifically those with the highest number of secondary data and social media posts. Finally, in paper III, two cases in Brazil had the interview time extended compared to papers I and II, as new primary data were collected to update the information - these were the first cases that the data was collected, with intention to have updated information.

Table 4 provides information related to the seven sustainable entrepreneurship providing FLW solutions – company names are not identified for reasons of confidentiality:

Table 4 – Data collection with Sustainable Entrepreneurs addressing FLW solutions

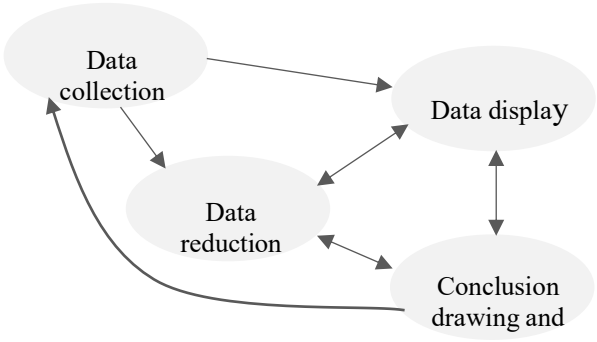
Paper	Country	Description	Obs. On site	Interview length	Secondary Data	Social media posts	Interview with consumers
I, II, III	Finland	SE promoting digital business to connect sellers with food surplus with consumers, resulting in cheaper food.	Yes	1h02min	15	3473	21
I, II	Finland	SE with the aim to give concrete solutions for the food waste problem in commercial kitchens by promoting the wise use of resources	Yes	34 min	12	14	0
I, II, III	Denmark	SE promoting digital business to connect sellers with food surplus with consumers, resulting in cheaper food.	Yes	1h8min	21	4167	18
I, II, III	Brazil	SE promoting digital business that sells monthly food boxes by subscription to consumers at a lower price. These products would be discarded by producers for being non-compliant with standards, or because there is no market for them.	Yes	2h47min	14	1434	0
I, II, III	Brazil	SE promoting digital business that sells monthly food boxes by subscription to consumers at a lower price. These products would be discarded by producers for being non-compliant with standards, or because there is no market for them.	Yes	47 min	6	630	0
I, II, III	Brazil	SE with a marketplace for the delivery of fruit, including fruit that is non-compliant with standards and surplus food from one producer. They focus on consumers or companies seeking convenience by receiving food at home/workplace.	Yes	1h48min	9	1017	0
II, III	Canada	SE promoting digital business to connect sellers with food surplus with consumers, resulting in cheaper food.	Yes	23 min	7	590	0

Source: the author

3.3 Data Analysis

Analyzing data is the heart of building a theory from case studies, but it is also the most difficult (Eisenhardt, 1989). The goal of data analysis in case studies is to define pattern identification. A possible method is by thematic content analysis coding for evidence of constructs (Edmondson & McManus, 2007). In general, the process of data analysis follows the flow proposed by Miles and Huberman (1994). The authors recommend that qualitative data analysis involve three flows of activity: data reduction, data display and conclusion drawing and verification. The three flows influence each other simultaneously and are differently associated with the process of data collection, as shown in Figure 2:

Figure 2 - Interactive model of data analysis components



Source: Miles & Huberman, 1994

A content analysis was performed on the collected data in the three papers. The chain of evidence consists of four steps. The first step was the full transcription of the interviews, as the following steps using NVivo software relied on the availability of text rather than the audio files. The transcription process was quite simple: writing down the full conversation from the audio file, as accurately as possible. For each one of the seven cases, a file was opened in NVivo and the interviews were allocated respectively to each case they belong. Each secondary data and social media post were saved as a document and subsequently inserted in NVivo Software, assigned to the case each one belongs.

The second step was the formulation and application of codes to the transcribed interview data, secondary data and social media post. Coding refers to the organizing and structuring of collected data. This process occurred three times, once for each paper, since each one analyzed a specific question and had its own coding based on its theoretical background. A

second part of this step was the scanning for emergent codes, not identified in the literature but that emerged with the collected data.

In a third step, the coding results from the interviews transcripts, secondary data and social media post were sorted into reports made in NVivo Software that thematize similar topics, whether conveying similar positions or contrary ones. They were grouped together and served as the basis for further discussion related to each paper. The findings of each paper were sent to interviewed in the investigated sustainable entrepreneurship before completing each study to validate the results found and improve research quality. Finally, cross-case analysis searched for similarities and particularities between the investigated cases. However, this process was not linear. The researcher moved back and forth between summarized data and theoretical concepts, checking for alternative explanations and drawing theoretical insights for the purpose of developing a rich case narrative and theoretical contributions.

Finally, the findings of the three articles are taken up in the contributions section of the thesis since together they help to provide elements to better understand the paradox of the embedded agency. It is at this moment that the theoretical contributions of the thesis are best evidenced, thus contributing to the advancement of Institutional Theory.

3.4 Rigor of Research

Seeking to establish the construct validity and reliability of the evidence, some principles proposed by Yin (2017) regarding data collection were adopted in this thesis: using multiple sources of evidence, creating a case study database and maintaining a chain of evidence.

The use of multiple sources of evidence is a type of triangulation. The triangulation is possible by multiple data collection methods. It provides a stronger substantiation of constructs and hypotheses (Eisenhardt, 1989). Case studies using multiple sources of evidence are more highly rated, in terms of their overall quality, than those that rely on single sources of information. By developing convergent evidence, data triangulation helps to strengthen the construct validity of the case study (Yin, 2017).

The creation of a case study database relates to organizing and documenting the data collected for case studies. The choice to use computer-assisted tools such as Nvivo is based on the understanding of some authors, such as Yin (2017), that these tools can help in the

codification and categorization of large amounts of data and that a good database increases the reliability of the entire case study (Yin, 2017).

The maintenance of a chain of evidence can increase the construct validity of the information in a case study since it allows the reader to follow the derivation of any evidence from initial research questions to ultimate case study findings. Broadly, data must be organized in a way that the reader is able to trace the steps from findings to initial research questions and also from questions to findings (Yin, 2017).

4 RESULTS – PRESENTATION OF PAPERS

Paper I is entitled “Sustainable Entrepreneurial Process: from idea generation to impact measurement”. It aims to answer SO I and II. To some extent, it also aims to provide initial insights to SO 4. The proposed research question is, “how do entrepreneurs generate ideas, recognize, develop and exploit opportunities in the context of sustainable development?”. A multiple case study strategy was conducted in the context of for-profit and non-profit organizations in different industries and six different countries (Brazil, Denmark, Finland, Estonia, Latvia and Lithuania). It is important to note that this paper does not only analyze entrepreneurs providing solutions for FLW since its objective was to understand the broader scenario related to sustainable entrepreneur's process, considering general aspects, not only a single sector. The sustainable entrepreneurs providing FLW solutions correspond to cases-C3, C4, C8, C9, C10, and C11. Cases C6 and C7 also provide solutions for FLW, however, they are non-profit organizations. This paper is published in the journal Sustainability.

Paper-II is entitled “Business Models’ Innovations to overcome Hybridity Related Tensions in Sustainable Entrepreneurship”. It aims to answer SO 1 and 3. To some extent, it also aims to provide more insights into SO 4. The proposed research question is, “how do sustainable entrepreneurs innovate in business models to overcome hybridity related tensions to achieve their environmental, financial and social goals?” It is a sequence from the paper -I, containing the same cases, within the same data collection. There is one extra case (C12), whose data was collected during the research stay at the University Of Guelph, Canada. C12 also corresponds to a sustainable entrepreneur providing FLW solutions. Therefore, the study was carried out with twelve cases in seven different countries (Brazil, Canada, Denmark, Estonia, Finland, Latvia, and Lithuania). This paper is published in the journal Sustainability.

Paper III is entitled “How sustainable entrepreneurs reduce food losses and waste in supply chains under different institutional environments and voids?” It aims to answer SO 4 and complement the findings related to SO1. The proposed research question is, “How sustainable digital entrepreneurs reduce food losses and waste in supply chains located in countries with different institutional environments and voids?. A qualitative approach used was based on primary and secondary data collection. The first phase investigated 54 stakeholders to understand coordination’s problems related to FLW. The second phase analyzed six case studies of sustainable entrepreneurship addressing FLW solutions in Brazil, Canada, Denmark, and Finland. This paper is expected to be submitted soon.

Table 5 shows the relationship between each paper and specific objectives of this thesis:

Table 5 – Papers X specific objectives

Paper	Specific objectives
I	SO 1 - To identify and describe the operation of first movers' entrepreneurs addressing FLW solutions); SO 2 - To understand the process related to the emergence of the enterprise;
I	SO 1 - To identify and describe the operation of first movers' entrepreneurs addressing FLW solutions); SO 3 - To analyze the mechanisms used by these entrepreneurs to influence the institutional environment;
III	SO 1 - To identify and describe the operation of first movers' entrepreneurs addressing FLW solutions); SO 4 - To propose indicators of positive social impact generated by the agency of these entrepreneurs addressing FLW solutions.

4.1 Paper I

Sustainable Entrepreneurial Process: From Idea Generation to Impact Measurement

Abstract:
In order to promote sustainable entrepreneurship, it is necessary to understand the sustainable entrepreneurial process. Addressing this gap in the literature, this paper aims to investigate how entrepreneurs generate ideas, recognize, develop and exploit opportunities in the context of sustainable development. A case study was carried out with eleven organizations in six different countries, from different sectors, including non-profit and for-profit business. The findings address a series of mechanisms that occur prior to the process of generating the idea and are relevant to the positive impact of these businesses on society. Entrepreneurs' previous experiences and skills, as well as the knowledge of similar initiatives, strongly relate to motivation and idea generation. In the analyzed cases, prior experience seemed to relate to a sensitivity towards a social or environmental problem. Previous experience in entrepreneurship is not determinant. The quality of the initial idea is relevant, once little changes occur through the entire process. In most situations both dimensions of sustainability were integrated at the same time and before venture launch. Despite this, the entrepreneur's focus is on only one dimension. The inclusion of positive impact measurement on society, as part of the sustainable entrepreneurial process model, is another relevant finding. First, it is necessary to differentiate the sustainable entrepreneur from the regular and the social entrepreneur. Secondly, as in some situations the dimensions of sustainability are not integrated at the same time and before venture launch, therefore considering that the process finish in the phase of venture launch can lead to misclassifications. The results also led to the recognition of triggers that can stimulate sustainable entrepreneurship, such as educational practices more aligned with sustainability problems faced by local communities, stronger dissemination of successful business cases related to sustainability in other countries and contexts, integration between universities and businesses, and the inclusion of practice-based learning in curriculums. The contribution to the literature was achieved by providing a systemic perspective on sustainable entrepreneurial process. This study also contributes by presenting empirical evidences of the phenomenon of sustainable entrepreneurship. The holistic knowledge of this process provides new information that support academics, policy makers, government and individuals with more appropriate understanding of the conditions that help to stimulate new business activities dealing with economic, social and environmental problems faced in society, helping to achieve the Sustainable Development Goals.

Keywords: Sustainable entrepreneurship; Entrepreneurial process; Sustainable development

Introduction

Humanity is experiencing unprecedented complexities related to production and consumption systems, each with its own ecological, economic and social dimensions without a single cause or a simple solution (Govindan, 2018). Sustainable entrepreneurship is expected to help mitigate some of these challenges, reconciling disparities in wealth, economic and social

inclusion, educational access and/or environmental issues (Fors & Lennerfors, 2019; Gregori *et al.,* 2019; Jiao, 2011).

Social or sustainable entrepreneurship is an umbrella term for a variety of organizational innovations that target social and environmental challenges (Seelos *et. al*, 2011). Sustainable entrepreneurship is different from social entrepreneurship. A business must address the social and economic dimensions of sustainability to be considered a social entrepreneurship (Belz & Binder, 2017). Sustainable entrepreneurship has a necessary requirement: to address, at the same time, economic, social and ecological goals - the triple bottom line approach (Cohen, Smith & Mitchell, 2008). The common point is that both are able to solve problems not addressed by either the regular market or the public sector (Kuratko, 2016; Yitshaki & Kropp, 2016). These ventures are increasingly lauded as catalysts for change in society by researchers, policymakers, practitioners and media (Gordon *et al*., 2018; Margiono, Zolin & Chang, 2018; Renko, 2013].

However, even if the contributions of successful sustainable entrepreneurship to society are of great importance, the empirical phenomenon itself is still rare (Renko, 2013). A key challenge both for researchers and practitioners is to understand and promote such practices (Fors & Lennerfors, 2019). In order to disseminate and promote sustainable entrepreneurship, it is necessary to understand the sustainable entrepreneurial process (SEP). Many authors describe the logic of the regular entrepreneurial process. Mainly, it includes the following sub-process or actions: idea generation, opportunity recognition, opportunity development and venture launch (Mets, Raudsaar & Summatavet, 2013; Raudsaar & Mets, 2016). Prior research in this area generally characterize new venture creation as a process of opportunity identification, evaluation and exploitation (Dimov, 2011), and as fundamental to create value on individuals and societies (Kuratko, 2016; Vogel, 2017). Creating social value is about social impact (González, Husted & Aigner, 2017). The creation of positive economic, social and/or environmental impact on society is considered a necessary condition for a social or sustainable entrepreneurship (Choi & Majumdar, 2014; Cohen, Smith & Mitchell, 2008; Gordon et. al, 2018; Gregori *et al*., 2019; Jiao, 2011; Kuratko, 2016; Margiono, Zolin & Chang, 2018).

In this sense, despite contemporary practices of sustainable entrepreneurship having many similarities with regular business, significant differences still exist (Shaw & Carter, 2007), leading researchers to question whether sustainable entrepreneurship require specific theories or not (Siqueira *et al*., 2018). There is a need to empirically investigate this phenomenon beyond the venture development (Gregori *et al*., 2019). Recent publications indicate a need for further investigation on the most diverse stages of the regular, social and

mainly SEP and business exploitation. First, there is a gap regarding whether and how SEP might unfold (Belz & Binder, 2017; Hanohov & Baldacchino, 2018). Second, there is a gap in the literature regarding the emergence of venture ideas (Margiono, Zolin & Chang, 2018), the origin of entrepreneurial opportunities (Dimov, 2011; George *et al*., 2016) and the influence of prior experience in the idea generation (Vogel, 2017). Third, the motivation of the entrepreneur also needs more attention (Choi & Majumdar, 2014), mainly related to its impact on opportunity recognition (Yitshaki & Kropp, 2016). In fact, the opportunity recognition is considered an essential part of SEP, but studies that address this phenomenon are rare (George *et al*., 2016, Hanohov & Baldacchino, 2018). A refined view of the process may help educators to develop courses that focus on triggers as starting points to students engage in idea generation (Vogel, 2017).

Moreover, little is known about SEP regarding business model designs (Margiono, Zolin & Chang, 2018), the early stages of business development (Renko, 2013), funding issues and different legal forms (Choi & Majumdar, 2014). The understanding of the processes and mechanisms of how exactly social ventures catalyze social change, through entrepreneurial process, is also underdeveloped (Choi & Majumdar, 2014). Finally, after an extensive search in literature, the paper that best summarizes the current development of the research explored in this paper is Belz and Binder (2017). They found only six empirical studies that investigate the recognition, development and/or exploitation of opportunities in social and environmental contexts. Among these papers, only one (Perrini *et al*., 2010) explored the entire entrepreneurial process, however analyzed only one single case study in a not-for-profit organization. Starting from this gap, Belz and Binder (2017) investigated the SEP in four for-profit companies and identified a SEP model that incorporates social and environmental dimensions in separate moments. However, they recognized that further researches are necessary to a better understanding of this phenomenon. Moreover, according to Filser *et al*. (2019) the current knowledge about how entrepreneurial activities contribute to the achievement of the United Nations sustainable development goals is still limited and should be addressed by researchers. Understanding the SEP, in addition to contributing to the theoretical advancement of the gaps above mentioned, has the potential to generate knowledge to help academics, police makers, entrepreneurs and individuals on how to promote win-win solutions through business, generating economic growth with benefits to the achievement of the Sustainable Development Goals.

The question that emerge from this is how do entrepreneurs generate ideas, recognize, develop and exploit opportunities in the context of sustainable development? It is expected to

contribute theoretically in responding to the gaps pointed out in literature, by offering a more holistic and integrated view of the SEP processes and business exploitation.

One premise of this study is that gaps in literature related to regular and social entrepreneurship extend to SEP. Therefore, part of the literature used is also embedded in references of these groups. The rest of this paper structures as follows. The second section explores the difference between concepts of regular, social and sustainable entrepreneurship, and reviews the theoretical background on SEP. The third section explains the methodology and presents the cases under study. The fourth section presents the findings from the investigation. The fifth part discusses the findings and, finally, the sixth concludes with implications in theory and practice.

Theoretical background

Several authors propose sub-process to analyze the entrepreneurial process of regular enterprises (for example, Davidsson, 2005; Vogel, 2017). In relation to social entrepreneurship, two authors stand out. First, Perrini *et al*. (2010) proposes a five-phase model, including opportunity identification, evaluation, formalization, exploitation, and opportunity scaling-up (related to replication for social change maximization). Mets, Raudsaar and Summatavet (2013) and Raudsaar and Mets (2016) propose a four-phase model: idea generation, opportunity recognition, opportunity development and venture launch. Venture launch could also be understood as opportunity exploitation. Each phase of the entrepreneurial process is the result of a combination of physical and mental shapes, which it is possible to group into silos related to each stage: propositions, idea development, concept development and business development. The content of a silo is not static, since there is a reciprocal interaction between its components as well as interaction with the main SEP. In relation to SEP, Belz and Binder (2017) propose a six-stages-process, which are recognizing a social or ecological problem, recognizing a social or ecological opportunity, developing a double bottom line solution, developing a triple bottom line solution, funding and forming a sustainable enterprise and creating or entering a sustainable market.

The model proposed by Mets, Raudsaar and Summatavet (2013) and Raudsaar and Mets (2016) was chosen to provide suitable analysis categories for this investigation for three main reasons. Although it applies to the context of social entrepreneurship, the model was tested in both non-profit and for-profit sectors. In addition, it is structured in the idea of silos, facilitating

the analytical coding, compared to the abovementioned models. Finally, the research through this model allows identifying if the results found by Belz and Binder (2017) occur empirically in the context of SEP by incorporating triple bottom line integration questions, in the cases analyzed, in addition to having several elements in common during the other phases.

Idea Generation

The idea generation is the result of several propositions, which relates mainly to motivation, prior knowledge and the skills/capabilities of the entrepreneur (Mets, Raudsaar & Summatavet, 2013; Raudsaar & Mets, 2016). Recent research indicates that the quality of the original conception of an idea (raw idea) is key determinant of the entrepreneurial success (Kornish & Ulrich, 2014). If it makes a difference for future performance, this would imply that it is important to understand in detail how this process occurs (Vogel, 2017).

Sustainability-oriented entrepreneurial intentions are driven by perceived entrepreneurial desirability and attitude toward sustainability (Vuorio, Puumalainen & Fellnhofer, 2018). Perrini *et al*. (2010) identified that sensitivity towards a social problem foster idea generation. In this sense, an idea can be related to individual pre-history (Mets, 2012), i.e., prior knowledge and experience, as education, work experience, hobby or family background (Hanohov & Baldacchino, 2018; Jiao, 2011; Karhunen *et al*., 2011; Shane, 2000; Shaw & Carter, 2007). A potential starting point can be the recognition of a social or ecological problem, which the prospective entrepreneurs encountered and experienced in their private or professional lives (Belz & Binder, 2017).

Yitshaki and Kropp (2016) analyzed 30 social entrepreneurs and identified that pull factors that included pro-social behaviors based on past or current life events motivated the majority of the participants. It can happen through social awareness since childhood or early adulthood. Their experiences created an awareness of unmet societal needs, which led to the opportunity recognition and the formation of social ventures to help filling the gaps. Others were motivated by push factors related to identification of social needs or process of evolution of an idea as natural option for career development – for example, the searching for a meaningful career due to job dissatisfaction or unemployment (Yitshaki & Kropp, 2016).

Even if some prospective entrepreneur can have the desire of being self-employed, according to one's personal circumstances (Hanohov & Baldacchino, 2018), comparing to their business for-profit counterparts, sustainable entrepreneurs have significant differences in their motivations. In social entrepreneurship, a smaller number of people tend to respond that the motivation is "to become your own boss and be independent" and "to create personal financial

security" as influencing factors, unlike business entrepreneurs who have been characterized as motivated by an elevated need for achievement and autonomy (Shaw & Carter, 2007). In a study conducted with creative entrepreneurs. Karhunen *et al*. (2011) also identified that almost all of them fit to the category of pull factors.

In fact, as well as commercial entrepreneurs, goal setting drives idea generation among social entrepreneurs (Yitshaki & Kropp, 2016). However, it seems that the social entrepreneurship arena is most often connected to solving a problem as an antecedent that lead to opportunity recognition. Social entrepreneurs tend to consider opportunities that have enough potential for positive social influences more attractive (Guclu, Dees & Anderson, 2002; Shaw & Carter, 2007; Yitshaki & Kropp, 2016]. It involves a process of solving a tension between an unmet social need that is linked to a broad social mission in favor of the community rather than a gap between needs and demands (Yitshaki & Kropp, 2016). Their motivations combine sustainability-oriented goals with a profit goal (Sedlmeier, Rombach & Bitsch, 2019). Sustainable entrepreneurs are engrossed in, and motivationally displaced by, other human and non-human stakeholders, causes, and ventures in different dynamic relations (Fors & Lennerfors, 2019). Therefore, as proposes Yitshaki and Kropp (2016), sustainable entrepreneurs' motivations are mission driven, designed to improve the well-being of a specific group or society.

Opportunity Recognition

Opportunity recognition is the output of the idea development. This silo relates to social assets, goals and social needs (Mets, Raudsaar & Summatavet, 2013; Raudsaar & Mets, 2016). Identifying and shaping opportunity is central to the domain of entrepreneurship (Kuratko, 2016). As in the previous stage, the recognition of sustainable opportunities is affected by prior knowledge (George *et al*., 2016; Hanohov & Baldacchino, 2018; Karhunen *et al*., 2011; Shane, 2000) and communal context, motivation for personal gain, such as earn money, and/or motivation to develop gains for others - altruism. The entrepreneur knowledge moderates it. Action such as socialization can enhance entrepreneurs' knowledge of natural and communal environments, since personal situations and circumstances also contribute to their process of opportunity recognition. Family background, engagement in sustainability movements and media can help achieving it (Hanohov & Baldacchino, 2018). It can also involve extensive reading, conversations with others who work in the field, traveling to new places, attendance at

professional meetings and workshops and a general absorption of information (Karhunen *et al*., 2011).

However, the recognition of a solution to a problem is expected to also offer an opportunity in the market. Market imperfections are expected to contribute to ecological and social problems, which are perceived as opportunities by prospective sustainable entrepreneurs (Belz & Binder, 2017). Therefore, the next critical question, after formulating the initial business idea, is whether there would be market for the product or service. This includes both customer demand and the competitive advantage of the enterprise vis-a-vis competitors (Karhunen *et al*., 2011).

Testing the idea before starting the business can be during this stage (Karhunen *et al*., 2011, Yitshaki & Kropp, 2016), since this idea must meet consumer's needs (Guclu, Dees & Anderson, 2002). Therefore, plausible evaluation of the social needs and assets related to opportunity recognition are necessary. Socialization, the participation in fairs or launching a beta-version can help achieving this (Mets, Raudsaar & Summatavet, 2013; Raudsaar & Mets, 2016).

In this sense, the opportunity recognition is a favorable combination of endogenously shaped and exogenously given circumstances that make it both desirable and feasible for the entrepreneur to exploit a venture concept and to introduce a potentially value-adding offer into the marketplace (George *et al*., 2016; Vogel, 2017). Therefore, once an idea is generated, the entrepreneur must take further actions to understand whether there is an opportunity to launch a successful venture based on the idea or not (Kuratko, 2016; Vogel, 2017).

Opportunity Development

As a solution to a particular social or ecological problem becomes feasible, and as market needs become more precise in terms of value sought by selected customer groups, the initial idea progresses and a business concept emerges (Belz & Binder, 2017). Opportunity development is the outcome of several activities related to the business concept development, such as marketing mix, business model and available resources (Mets, Raudsaar & Summatavet, 2013; Raudsaar & Mets, 2016). The business plan is one of the important activities launched (Karhunen *et al*., 2011) by successful ventures to achieve financial sustainability and to produce desirable social impact (Margiono, Zolin & Chang, 2018). The entrepreneurs that are more structured in their progress from transforming the identified opportunity into a business concept usually formulate a detailed business plan, including business model, sought values and deployed resources (Belz & Binder, 2017).

During the incubation stage, the entrepreneur collects missing information and construct a more refined image of what the future company might look like (Vogel, 2017). The time that the team invests in the development of a nascent venture is vital. Expanding the hours spent on the venture increases the likelihood of organizational emergence (Renko, 2013). A crucial element is the translation of a social or ecological goal into customer benefits. In this sense, the integration of the triple bottom line is a complex process, which takes place sequentially, not simultaneously. All three dimensions of economic, social and ecological goals are considered. At least, they are partly integrated before market entry, which adds credibility to the new venture and its sustainable offering (Belz & Binder, 2017).

Venture Launch and Business Exploitation

At some point, the individual will evaluate whether it is worthwhile to move to exploitation or not (Vogel, 2017). Business development first relates to preparing the venture to be launched. It involves the formation of strategy, acquiring any missing tangible and intangible resources, such as teambuilding. It also relates to legal requirements. The outcome is the venture launch that could also be understood as opportunity exploitation (Mets, Raudsaar & Summatavet, 2013; Raudsaar & Mets, 2016). It is the moment when the sustainable product/service is commercialized in the market (Belz & Binder, 2017).

Finding financing and other support for the entrepreneurial activity are the next general challenges of the starting of the activities. The sources of financing to start and proceed with entrepreneurship can be internal and external. The former refers to the entrepreneur's own resources, such as personal savings and, after, financing created by the entrepreneurial activity (cash flow). The latter includes both public and commercial sources, including start-up subsidies and loans from business support structures and banks and other commercial financial institutions (Karhunen *et al*., 2011), as well as crowd funding and public funding (Belz & Binder, 2017). Social entrepreneurs can use other types of support (not financial) during the start-up phase. Shaw and Carter (2007) investigated the level of personal financial risk experienced by founding social entrepreneurs. They discovered that while personal and family sources have been identified as key contributors to financing business enterprises, for the participating social entrepreneurs these sources were rarely used. Only a few respondents had made use of their own funds. A significant number of respondents identified charitable trusts, regional and central government and European Union funding as key financial sources (Shaw & Carter, 2007).

The structures of such enterprises can be best described as diverse, including charitable organizations, community businesses, partnerships, co-operatives, unincorporated organizations and industrial societies (Shaw & Carter, 2007). The private ownership logic is a key characteristic of social enterprises (Margiono, Zolin & Chang, 2018) and probably sustainable enterprises. In addition, in contrast to the perceived centrality of the founding entrepreneur, most of these businesses depended on the involvement of other individuals, organizations, committees and volunteers. This suggests that within a social context, entrepreneurship may be a collective rather than an individual activity (Shaw & Carter, 2007).

Sustainable enterprises create new sustainable niches or enter established ones (Belz & Binder, 2017). In this sense, creativity and innovation are required, which can be manifested also in managerial actions (Shaw & Carter, 2007). Related to profitability, when asked about the aims of their social enterprise, none of the respondents identified profit as a key objective, in a research conducted by Shaw and Carter (2007). In fact, after the venture lunch, the majority of sustainable entrepreneurs continue to rely on public-sector grants and are cautious about adding debt to their financial issues (Doherty, Haugh & Lyon, 2014). Regarding scalability, Perrini *et al*., (2010) argue that social entrepreneurs address the scalability of their organizational model to increase impact and induce social change.

Sustainable and social entrepreneurship differ from conventional entrepreneurship in terms of value creation and impact (Vuorio, Puumalainen & Fellnhofer, 2018; Shin & Park, 2019). Over time, several forms of impact measurements have been proposed. However, impact in society is a social construction, involving different stakeholders, so it is not possible to establish a unique standard. A good framework of analysis should consider stakeholder needs in each situation (Costa & Pesci, 2016).

In this sense, according to the situation, possible positive impact can relate to individual lifestyle factors, social and community networks, cultural and environmental conditions, human rights, economic development, education, citizenship and health (González, Husted & Aigner, 2017; Gordon et. al, 2018). As motivated change agents, sustainable entrepreneurs challenge institutional structures (Dorado & Ventresca, 2013). Therefore, nascent sustainable entrepreneurs with highly novel ideas would be well advised to focus on activities that can establish legitimacy and stakeholder support in the marketplace in order to produce positive impacts (Renko, 2013). Therefore, sustainable entrepreneurs may provide means of working with individuals, households and communities to build their capabilities and resilience when facing inequalities, creating a more sustainable society.

Materials and Methods

Given the scarcity of dedicated research on the whole SEP (Belz & Binder, 2017), this study took an exploratory approach through a qualitative methodology, following the protocol suggested by the literature (Yin, 2017). Because of its strengths, case study is a particularly designed for applied fields of study such as education, social work, and management, among others, since processes, problems, and programs can be examined to bring understanding about their complex and related phenomenon. Case study has proven particularly useful for studying innovations, programs, and informing policy (Yitshaki & Kropp, 2016).

A multiple case study strategy was conducted in the context of for-profit and non-profit organizations, in different industries and in six different countries (Brazil, Denmark, Finland, Estonia, Latvia and Lithuania) in order to enhance the external validity of the study. A broader sample of companies of different sectors from different countries made it possible to better identify the overall nature of the entrepreneurial process/SEP. The choice of countries was based on the OECD Social Expenditure Database of 2019 (OECD, 2019), which has been developed in order to serve the growing need for indicators of social policy. Denmark and Finland invest more than a quarter to their GDP to public social support, occupying leading positions in the ranking. Estonia, Latvia and Lithuania appear in intermediate positions. Brazil is not in the ranking. Therefore, the sample sought to incorporate different country characteristics in relation to their social expenditure investment, which incorporate many of the issues addressed by the UN Sustainable Development Goals.

Potential candidates were identified through the database of entrepreneurs and an extensive search on Google. The initial screening was based on the following criteria: (1) the entrepreneurial process must be completed (venture launched); (2) to be considered as a sustainable entrepreneurship, i.e., address economic, social and ecological goals. The prevalence of food sector companies in the sample was largely due to the fact that there were more of them in search, but also to the fact that their social and economic effect is potentially the greatest (Foley *et al*., 2011). This initial screening rendered sixteen suitable enterprises, of which eleven accepted to participate in the study. In that context, the comfort sampling was implemented in the initial phase of the empirical study. Later, in the course of the study, after conducting eight interviews it was noticeable that information from respondents began to repeat. It was achieved, at this point, what is called the answers redundancy stage. The researchers came to a conclusion where each subsequent answer no longer significantly added

new insights into the entrepreneurial process/SEP – but decided to collect data from all eleven companies that agreed to participate in the study. Therefore, the decision that the selection of the investigated companies was exhausted was also confirmed.

Following the theory, empirical research is based on a process approach. This means that the interview questions were structured around the temporal and cause-and-effect relationship connections between sub-parts, activities, decisions and outcomes (outputs) of the entrepreneurial process. These sequences are described/disclosed in the Results section below.

Primary data collection was from October 2018 to January 2019. All the companies were visited for observations, in which personal interviews were conducted with founders and responsible people for the business. A semi-structured script was used, previously validated by Karhunen *et al*. (2011). In total, 10 hours and 15 minutes of interviews, with an average of 56 minutes per interview. All of them were recorded and transcribed under conditions of confidentiality – thus quotations in this paper are anonymous. In total, 183 pages of transcription were obtained. In addition, secondary data were collected from websites, news, scientific papers and online publications.

Table 1 summarizes the cases studied and the data collection process:

Table 1 - Studied cases

Case	Country	Industry	Type	Observation on site	Interview length	Secondary Data
C1	Estonia	Hotel	Non-profit	Yes	58 min	8
C2	Estonia	Recycle	Non-profit	Yes	35 min	14
C3	Finland	Food Sector	For-profit	Yes	34 min	12
C4	Finland	Food Sector	For-profit	Yes	1h02min	15
C5	Finland	Recycle	Non-profit	Yes	1h04min	9
C6	Lithuania	Food Sector	Non-profit	Yes	1h31min	13
C7	Latvia	Food Sector	Non-profit	Yes	45 min	10
C8	Denmark	Food Sector	For-profit	Yes	1h08min	21
C9	Brazil	Food Sector	For-profit	Yes	59 min	14
C10	Brazil	Food Sector	For-profit	Yes	47 min	6
C11	Brazil	Food Sector	For-profit	Yes	52 min	9

Source: the authors

To analyze data, content analysis was applied. An initial coding was generated based on the literature (Belz & Binder, 2017; 21, Karhunen *et al*., 2011; Mets, Raudsaar & Summatavet, 2013; Raudsaar & Mets, 2016; Vogel, 2017). After mapping the transcripts, information related to each category was analyzed with the help of NVivo 12 Software. Cross-case analysis searched for similarities and particularities between SEP in the analyzed cases.

Results

Results are presented according to the categories of analysis, identified in the theoretical framework, and with observations that emerged in the field. First, each category is presented briefly, followed by more detailed results and as a cross-case comparison, available in Table 2.

The idea generation is the result of several propositions, which relates mainly to motivation, prior knowledge and skills/capabilities of the entrepreneur. The idea to start the ventures in all initiatives related to founders' past or present experiences. First, the mission drive idea is quite strong, as it appears in individuals' motivations in all cases. It is possible to verify a sensitivity towards solving a social and/or environmental problem as a starting point that leads to the idea. Case 1 owner exemplifies:

> However, maybe a reason why the sustainable thing came up was that these [marketing] events [in her previous work experience] produce a lot of waste of products and food. In this field, the waste is a big thing, because you have this one event, where it is like maybe 500 people, and they all get t-shirts, which they wear maybe once and throw it away. Many products used in these events go to waste just after it happens. There is no recycling or reuse. There is also the food waste. […] like one third or even sometimes, half is thrown away (Case 1 owner).

Case 11 is another example:

> By 2012, every fruit my father's farm harvested was automatically delivered to the industry. At that time, there was an excess of supply. [...] The industry did not buy our fruit and it was perfect in terms of quality. Donating food in Brazil is very difficult. So, in the farm, I started to see tons of fruit on the ground. It bothered me deeply [...] I asked my father 'Can we think of a way to market this fruit also outside the industry?' My dad said, "You can try, there's no problem." So, I announced a 27kg fruit bag on a Facebook sales page. By the time I woke up, I already had 20 requests (Case 11 founder).

Out of eleven, seven entrepreneurs (cases 1, 2, 4, 5, 6, 9, 10) got inspiration in similar initiatives found throughout their trajectories. For example, Case 2 interviewee explains: "the idea came from Finland; they have a very similar organization there […] so the idea came from it and we started to make something similar here".

Although previous experience in entrepreneurship is not a determining characteristic (present in only three cases), all cases had previous experiences and skills in the area, either in education or in professional life. For example, Case 1 owner explains: "I worked for four years on event marketing field. This was a really good base, where I got a lot of experience; it helped us […]". Prior knowledge about the product, the service and technology (three cases) and prior networks (three cases) are not dominant aspects related to the process of ideation in the analyzed situations.

The opportunity recognition is the output of the idea development. This silo relates to social needs, goal and market orientation. The evaluation of the social needs and related goals of entrepreneur, in all the cases analyzed, are somehow moderated by entrepreneurial knowledge and the recognition of a solution to a problem, because of the previous process. All cases relate to market imperfections contributing to ecological and/or social problems that the entrepreneurs perceived as opportunities to introduce a value-adding solution into the marketplace. However, not all cases have the motivation related to personal gain, such as earning money, since five cases (1, 2, 5, 6 and 7) are non-profit organizations, as exposed in the opportunity development category in Table 2. Case 6 exemplifies this, once the initial intention was to do only a single action, which eventually evolved into an organization. Most of these businesses (nine cases) operate only in the domestic market.

The social/environmental concern stands out in relation to financial aspects in most of the cases, although financial aspects are essential to the organization survival. In six situations (Cases 3, 4, 8, 9, 10 and 11), the founders seek for personal gains and to intertwine this with benefits to society. Case 3 explains: "The Company already works with solutions to waste, so we have some experience in the field and business. […] We perceived the situation as a new market opportunity to increase our market participation and sustainability in society at the same time". Case 4 interviewee says: "the same business model was present in other countries and also in Finland, but we saw that, at that moment, companies in the market had failures and we wanted to do it better". One of the founders of Case 9 also gives a good example:

> In 2014, I started a post graduate degree in business, focusing on sustainability. [...] I began to see several businesses based on conscious capitalism, i.e., you do not have to do something just to profit; you can help an entire supply chain, the ecosystem, everything around you. Then we thought about it. So, as my parents are small farmers, I already knew the dynamics of these small producers, how much they are exploited by food supply chain, so we decided to work with solutions to them, helping society with a business that is also profitable (Case 9 founder).

The opportunity development is the outcome of several activities related to the business concept development, such as marketing mix, business model and available resources. At this stage, the results were very homogeneous between cases. The product/service, market and target group/accessibility, in all cases analyzed, were a continuation of the idea, social needs and goal, i.e., there were just small changes throughout the entrepreneurial process. This may relate to the fact that almost none of these entrepreneurs neither tested the product/service previously, nor made a business plan. The only exception is case 10, the one company that made a business plan. It was incubated for one year and tested the product before venture launch, making changes based on it. However, this was an unique case.

Available resources related to the use of knowledge, technology, third-party solidarity and collaboration and the creativity of the entrepreneurs. For example, Case 1 Owner says: “basically, at the beginning, we were building everything; we were using waste and abandoned things and transforming it”. This also reflected in the market entry strategy, which based on direct contact or virtual mechanisms to reach possible customers. This aspect continued in the promotion activity, which had a lot of informal disclosure to customers (in most cases “word of mouth”), public campaigns with the help of volunteers and partnerships with other stakeholders, and the strong use of social media. The price was particular in each case, according to the product/service, with two situations in which the final consumers would not be charged because they were NGOs (cases 6 and 7), with resources coming from other stakeholders or services.

The translation of the social and ecological goal into customer benefits, i.e., the integration of the triple bottom line was a very interesting aspect. In most situations (cases 1, 2, 3, 4, 5, 8, 9, 10 and 11), both dimensions were integrated at the same time. However, although both aspects were present, in the beginning the focus of the business was only on the environmental dimension in cases 1, 2, 3, 4, 5, 8, 10 and 11. Case 9 is the only situation where both dimensions had the same focus. Case 5 interviewee informed: “Our main goal is environmental, since the beginning. This is our focus. But the social thing comes as a consequence of the business idea and operations; we also have it since the beginning”. In cases 6 and 7, it was verified an opposite situation, since the dimensions were integrated in separate moments, first the social and after the environmental dimension. Although both aspects are present currently, the priority for these two cases is the social aspects. Case 6 interviewee explains that:

> In the beginning, we were just a partner in a governmental program distributing the food parcels for poor people, but after some years we started expanding a lot, as we started to work more on the food waste issues […] by that time [in the beginning], food waste wasn't kind of a popular theme, actually no one cared about it. Nowadays, things changed and our purpose is a two-fold mission, like combat the food waste by combating the poor or combat the poor by fighting the food waste. Is there any part more important than that? Here we agreed as a team that social issues are more important. It is ok, because all those motivations are here also (Case 6).

Venture launch and business exploitation are the next stages. The usual entrepreneurial process ends with the venture launch. For this reason, results will be presented into two different categories: venture launch, which generally should end the analysis of the entrepreneurial process; and environmental and social impact, as a new category related to SEP.

The venture launch involves the formation of strategies, acquiring any missing tangible and intangible resources, teambuilding and the legal formation of the organizations. The table below shows the year of emergence for each case. Most of the organizations emerged in the legal form of private company. The rest are NGOs. NGOs are usually non-profit (cases 1, 2, 6 and 7). Private companies are for profit (3, 4, 8, 9, 10 and 11), but there is a case of a private company being non-profit (case 5). The choice in all situations occurred for legal reasons combined with the objectives of the entrepreneurs, also considering the context of the country where they operate.

Financial resources and intangible and tangible resources are consequences of the previous phases. This is because most of the cases started without financial resources, using intangible ones, such as knowledge, virtual services, social networks, residential structure and voluntary partnerships or services. Case 2 explains that: "At the beginning, there was just voluntary work. Also, people brought donations for us. We made a rental agreement, the first three months were free, and then we started to pay rent. So, in the fourth month, we already had some money from sales that we could pay the rent".

Finally, environmental and social impact emerge as new categories, since those characteristics differentiate these ventures from regular businesses. Each business has its specific impact, as the table below details. All the analyzed cases present both environmental and social impacts in the regions they operate. These organizations measure and communicate it. Case 2 interviewee reports that:

> For example, last year we saved 1,500 tons of textiles from the landfill, so we can measure our impact directly […] we also try to help homeless people. For example, we organize for them, many times a year, something like a shopping night. All the homeless people come here one evening and they can shop free. They can choose anything from our shop for free (Case 2 owner).

Cases 2 and 5; cases 6 and 7; and cases 9 and 10 present the same products/services, therefore they produce very similar environmental and social impact, varying in quantities according to the organization's size and region attended. Some small differences also occur. For example, Case 5 produces social impact by recruiting and providing training for people who have been out of the labor market for years or that are in drugs rehabilitation processes, as part of a collaboration policy with the Finnish government.

Related to impacts produced, Case 4 interviewee explains that:

> We saved more than 1,100,000 portions of food to go to waste since our begging. We have a few ways to measure it in kilograms and in CO2 saved, based on published studies in Finland. We estimate it to be approximately 430 tons of food and 2.7 million kilograms of CO2 emission reduced. Of course, the number of portions of food saved from waste is based on our operations. The kilograms and CO2 saved are based on an estimative (Case 4 owner).

Case 7 interviewee provide information measurement in their annual report: "Last year, we redistributed 40 tons of food. How many people have we helped? We helped 23,000 low-income people, on average one parent family with two children, single mother with an average income of 350 euros". Case 8 interviewee explain that '[…] because one of our primary KPIs and goals, a movement is actually being built, […] it's a really big goal on creating that movement and having that scaled organically, without us having to be the primary motor, or the engine".

Case 11 founder gives another explanation:

> We have rescued more than five tons of food in this year of operation. [..] The farmer was also a layman in that. At first, it was very difficult to buy from them, they just wanted to donate the food to us. They did not want to sell, but we try to work with a fairer and transparent market, so not selling would be unfair to them. We had to "educate" the farmer too, so today it's easier. We now decide the value of the food together. We provide education campaigns also to consumers. I think both social and environmental are our social impact, at the same time, because we are reducing food waste (Case 11 founder).

All the organizations that have been analyzed have financial sustainability, which is expected also in a regular business. Finally, the problems faced, and plans relate, in most cases, directly with the impact produced by these organizations, as exposed in the Table 2.

Table 2 presents all cases' detailed information and cross-case analysis:

Table 2 - General results and cross-case comparison

	PROPOSITIONS → IDEA GENERATION				
Cases	**Where did the idea come from?**	**Prior experience in entrepreneurship**	**Prior experiences and skills in the area(s)**	**Prior knowledge of product, service or tech**	**Prior networks**
C1	One of the owners has always had an interest in themes related to nature since childhood. She and her partner decided to travel for a year to find inspiration for the business. Along the way, they visited different eco-hostels and found the idea interesting. They thought this would also help raising awareness of the issue in the local population towards sustainable living possibilities. As the owner worked some years in marketing events, attributes this experience also as the reason why the sustainable thing came up, since in these events people generated a lot of waste and she was always looking for solutions for it.	No	Yes, studied tourism management. Worked for four years on marketing events.	No	No
C2	The idea came from a similar organization in other country, which inspired the whole mission of the organization, since the country was facing the same problem that could be solved in the same way.	No	Yes, one of them studied business and marketing. The other works in an environmental protection agency.	No	Yes, related to charities
C3	The idea came from the company that already works with waste and recycling. The managers realized that the food waste is no longer a threat, but a market opportunity, since 10 to 25% of the food offered in buffet restaurants in the country is going to waste.	Yes	Yes, business management in the recycling and waste sector	No	Yes
C4	Almost all founders knew each other beforehand. They were willing to start a business, and some of them had a special focus on sustainability issues. They saw some initiatives dealing with the core of their business elsewhere and thought they could improve it and do better. In addition, society was beginning to discuss the subject more, which would make it easier to have clients.	Yes	Yes, education in computer science, which is the core of the business	Yes, experience in information technology and digital business industry.	Yes, with angel investors, who participated in the expansion process
C5	A similar initiative, that took place in another country facing the same situation, inspired the idea.	No	Yes, education on environmental conservation	Yes, on nature conservation association	No
C6	During a trip abroad, the founder discovered an organization and thought he could make an equal initiative in the country. Initially, the idea was to make a unique, charitable event, to help people in the community, during the cold winter season. As the initiatives were recurring, the formal organization naturally emerged.	No	Yes, manager in a multinational company in the food sector for six years.	Knowledge related to the food sector and corporate social responsibility.	No
C7	The organizations emerged as an answer to the economic crisis faced in the country. Many people lost their jobs and did not have any money for food. As	Yes	Yes, education in economics	No	No

	the social care system was overloaded, people started to go to charity organizations to ask for help. In this context, two big NGOs decided to come together and funded a new organization to help these people.				
C8	The founders were having dinner in a restaurant at the time of closing and saw the employees cleaning the place and discarding food that was not consumed. They realized that it was a very large amount of food and that it was tasty. That bothered them, so they began to think in ways to solve it.	No	Yes, education in programming and business	No	No
C9	The founder was doing a postgraduate degree in business management when he first was exposed to the idea of conscious capitalism in entrepreneurship, i.e., that he could make a business to both profit and help society. He decided to start a business to reduce food waste, mostly based on his personal history and after meeting producers who faced this problem. He began to read about other business.	No	Yes, studied business management with focus on sustainability (post-graduation)	No	No
C10	The founder realized that in supermarkets there are some commercialization practices to accept or reject fresh food based on its aesthetic standard in terms of size and symmetry. This is usually called “imperfect produce”. She talked about this problem with her grandfather, who has experience in planting food. Her grandfather's response influenced her to work on promoting solutions to this problem through entrepreneurship: “I asked the nearest person that had knowledge in these issues: 'Okay, but what is imperfect in your garden?' He told me: 'Nature does not have imperfections. Whatever I get in my garden, I consume. Nothing is rubbish because it is bigger, smaller or looks different”.	No	Yes, education in business	No	No
C11	Due to an oversupply, the industry rejected the product from her father's farm. Although perfect for consumption, the fruits were thrown on the farm floor to rot. The founder saw tons of food wasted and was deeply dissatisfied with the problem. Then, she began to think of solutions to this problem.	No	Yes, her father owns a farm and she help in the marketing process	Yes, knowledge related to the food sector	No

IDEA DEVELOPMENT → OPPORTUNITY RECOGNITION

Cases	Social needs / target group	Goal	Market orientation
C1	Tourists and students from local university	To provide a more sustainable living, by coming up with more affordable prices accommodations and based on environmentally friendly process	Domestic
C2	Citizens of different social classes that seek to reuse/recycle for environmental, social or financial reasons	To make reuse and recycling as a normal everyday habit in the country, i.e., to take out of the garbage those things that are still usable and put them in circulation again	Domestic
C3	Food sector companies that have commercial kitchen and produce some food waste	To give concrete solutions for the food waste problem in commercial kitchens by promoting the wise use of resources	Domestic
C4	Retail, restaurants, coffee shops or grocery stores with surplus food and consumers concerned with environmental issues and or with less economic condition	To develop and maintain digital marketplace for surplus food	International

C5	Citizens of different social classes that seek to reuse/recycle for environmental or financial reasons	To make reuse and recycling as a purpose of preserving the environment	Domestic
C6	Socially disadvantaged people	To work as a mediator, collecting donated food from retailers, producers, public and providing them to the poor people.	Domestic
C7	Socially disadvantaged people	To work as a mediator, collecting donated food from retailers, producers, public and providing them to the poor people.	Domestic
C8	Retail, restaurants, coffee shops or grocery stores with surplus food and consumers concerned with environmental issues and/or less economic condition	To develop and maintain digital and physical marketplace for surplus food	International
C9	Consumers concerned with environmental and social issues	To develop and maintain digital marketplace for the delivery of baskets containing non-standard compliance and surplus food from producers	Domestic
C10	Consumers or companies seeking convenience by receiving food at home/workplace and/or consumers concerned with environmental and social issues	To develop and maintain digital marketplace for the delivery of baskets containing general food, including non-standard compliance and surplus food from producers	Domestic
C11	Consumers or companies seeking convenience by receiving food at home/workplace	To develop and maintain digital marketplace for the delivery of fruits, including non-standard compliance and surplus food from one producer	Domestic

CONCEPT DEVELOPMENT → OPPORTUNITY DEVELOPMENT

Cases	Business Plan	Business Model	Value proposition X triple-bottom approach	Product/service	Market and target group; Accessibility	Price	Promotion	Available resources	Environmental and social aspects
C1	No	Mix of regular business model with NGO, since it is a non-profit hostel; business to consumer	Sharing of intangible values, lower prices, engage multiple stakeholders, consumer education.	Hostel that promotes the concept of sustainable living, operating based on environmental solutions with a more affordable price. It also offers sustainability-related workshops	Tourists or students of the local university	More affordable price than regular hostels	Informal disclosure by friends and customers. And also in the hotel booking platform	Without financial resources, they set up the place by recycling furniture taken from garbage or donations. The owner of the building gave 6 months of rent exemption.	Both dimensions were integrated, since the beginning, at the same time. However, the focus is on the environmental dimension since they began.
C2	No	Mix of regular business model with NGO, since the company does not receive external resources; business to consumers	Sharing of intangible values, lower prices, consumer education	Collection of products that are no longer used, repaired if necessary, and resold	Citizens of different social classes in the country	Cheaper price for second-hand products	Posters and public campaigns, with voluntary work of marketing agencies	Only a small shop place rented with three months of rent exemption and volunteer work in the beginning	Both dimensions were integrated, since the beginning, at the same time. However, the organization exists exclusively for

									environmental purposes.
C3	No	Regular business model, business to business	Decreasing operational costs, increasing reputation, employee's awareness and education	Digital platform that helps kitchens to measure the food waste, understand what it is, why it has occurred, and to find possible solutions.	Restaurants, hotels, schools, other commercial kitchens	Confidential information	As the service is quite new, the company made strong investment on marketing campaign with possible customers	The business is part of a larger company, from which it uses the physical structure, expertise and network	Both dimensions were integrated, since the beginning, at the same time. However, the focus is only on the environmental dimension.
C4	No	Classic market placement, purely commission driven; Both business to business and business to consumer	Sharing of intangible values, lower prices, convenience, engage multiple stakeholders, consumer education	A digital platform to connect sellers that have food surplus with consumers, providing food at lower costs.	Businesses such as retail, restaurants, coffee shops or grocery stores; and final consumers	Commission for every transaction, no fixed fees	Educational campaigns, social media, regular media	Knowledge, since most of the solutions provided by the company is virtual and knowledge intensive	Both dimensions were integrated, since the beginning, at the same time. However, the focus is on the environmental dimension.
C5	No	Mix of regular business model with NGO, since it is non-profit; business to consumers	Sharing of intangible values, lower prices, consumer education	Collection of products that are no longer used, repaired if necessary, and resold. They also promote training and consulting in the environmental field	Citizens of different social classes in the country	Cheaper price for second-hand products	In the beginning, word of mouth. Now, integrated social media.	Partnerships and volunteer work	Both social and environmental aspects started at the same time, but the organization exists for environmental reasons
C6	No	Charity NGO	Sharing of intangible values, convenience, engage multiple stakeholders, consumer education	Recovery and redistribution of food that would be wasted by actors in the food supply chain or which were harvested in campaigns to socially disadvantaged people.	People or organizations dealing with socially disadvantaged people	Free	Social networks, retail campaigns, media campaigns, donor events and marathons in the country.	Agreements with different suppliers, venture capital, social and community volunteer work	Started only with the social dimension. Environmental aspects were integrated after. Nowadays, both dimensions are intertwined. However, the priority is the social aspect.
C7	No	Charity NGO	Sharing of intangible values,	Recovery and redistribution of food	People or organizations	Free – now they are	Campaigns in the city for food	Infrastructure, expertise,	Started only with the social dimension.

			convenience, engage multiple stakeholders, consumer education	that would be wasted by actors in the food supply chain or which were harvested in campaigns to socially disadvantaged people.	dealing with socially disadvantaged people	organizing to charge a small fee	donations, contact with retails and social media	contacts and also, partially, the money of the "umbrella" NGO	Environmental aspects were integrated after. Nowadays, both dimensions are intertwined. However, the priority is the social aspect.
C8	No	Classic market placement, purely commission driven; Both business to business and business to consumer	Sharing of intangible values, lower prices, convenience, engage multiple stakeholders, consumer education	A digital platform to connect sellers that have food surplus with consumers, providing food at lower costs. Also, a physical and virtual store where they sell surplus or close to expire food from producers and industry, and also food with small packaging errors	Businesses such as retail, restaurants, coffee shops or grocery stores, flower shops and final consumer	Commission for every transaction. No fixed fees	Educational campaigns, social media, regular media, educational personal projects in schools and events	Knowledge, since most of the initial solutions provided by the company is virtual and knowledge intensive.	Both dimensions were integrated, since the beginning, at the same time. However, the focus is mostly on the environmental dimension.
C9	No	Regular business model, business to consumer	Sharing of intangible values, lower prices, convenience, engage multiple stakeholders, consumer education	A digital platform that sells monthly food baskets subscription to consumers for a lower price. These products would be discarded by producers for non-standard compliance or absence of a market	Final consumers of different social classes	Cheaper price, because these are products that would be discarded	Word of mouth, social media, regular media, educational personal projects in schools, companies and food events	Without financial resources, the business started at the founders' home, with a website developed by them and using their personal car for deliveries	Both dimensions were integrated, since the beginning, at the same time with the same focus.
C10	Yes	Regular business model, business to consumer and business to business	Sharing of intangible values, lower prices, convenience, engage multiple stakeholders, consumer education	A digital platform that sells monthly food baskets subscription to consumers for a lower price. These products would be discarded by producers for non-standard compliance or absence of a market	Final consumers of different social classes and companies buying for their employees	Cheaper price, because the baskets include products that would be discarded	Social media, posters in restaurants, regular media, and food events	Without financial resources, the business started at the founders' home	Both dimensions were integrated, since the beginning, at the same time. However, the focus is mostly on the environmental dimension.

C11	No	Regular business model, business to consumer and business to business	Sharing of intangible values, lower prices, convenience, engage multiple stakeholders, consumer education	A digital platform that sells single purchases or monthly subscription to consumers for a lower price. These products would be discarded by producers for non-standard compliance or absence of a market	Final consumers of different social classes and restaurants or commercial kitchens	Cheaper price because the baskets include products that would be discarded	Word of mouth, social media and regular media	Without financial resources, the business started by selling the product on a Facebook sales page and making deliveries with the personal car	Both dimensions were integrated, since the beginning, at the same time. However, the focus is mostly on the environmental dimension.

BUSINESS DEVELOPMENT → VENTURE LAUNCH

Cases	Start year	Legal form	Initial team	Actual team	Strategy	Resources: intangible and tangible	Financial resources, support
C1	2010	NGO	2 owners	2 owners and 2 employees	To reach people who are more concerned about environmental aspects and want a simpler life. Also, to integrate with them through workshops in the hostel	Creativity and time available to recycle resources rather than buying them in the market	They did not have any financial support to start the business. Only received a grant to expand their activities
C2	2004	NGO	2 founders and 7 volunteers	2 founders and 100 employees	To make these second-hand centers look like normal shops (the lights, the good smell, the clothes, etc.) to attract not only poor people, but also a broader population, in order to make second-hand shopping a normal habit	Knowledge, volunteers and donator that didn't have any better options to throw away things	They did not have any financial support to start the business
C3	2016	Private company	4 founders	4 owners and 3 employees	The company usually calls potential clients, sets up a meeting and introduces the service, explaining its benefits and giving successful examples. They try to show that their service is not only about tracking the problem and reporting it, but also providing solutions with the information.	Knowledge	Funding of initiatives to support new business
C4	2015	Private company	5 founders	5 owners and 12 employees	In the business-to-business (B2B) part, the strategy was an individual approach, presenting the service offered. The initial focus was on small and medium businesses,	Mainly intangible resources such as knowledge, dissemination of the theme in the media and society, and the ability	The business started with no financial resources and working in home office. The only cost was the website's maintenance.

					considered easier to accept. After the initial moment, the most effective ways was to show just examples. To the final consumer, it was through campaigns in social media and conventional media, with the environmental appeal and cost reduction.	to promote good experiences for customers	
C5	1989	Private compan	3 founders and 7 volunteers	3 founders, 300 full-time or part-time employees and 100 volunteers	Efforts to educate the population and trying to make recycle and reusing things more common, initially word of mouth.	Knowledge and partnerships	Yes, from the government
C6	2001	NGO	2 founders and 4 employers (full-time)	2 founders, 25 full-time employees and 378 volunteers	First, search for partnerships with companies that sought to carry out corporate social responsibility actions. More recently, it has used successful cases in the same industry to recruit new donors, using an image linked to corporate responsibility and tax deductions provided by the government.	Partnerships and volunteer work	Initially, campaigns carried out in society. Nowadays, campaigns carried out in society, partnerships with the government, partnerships with the private sector, projects in partnership with municipalities and grants and small fees from beneficiaries
C7	2009	NGO	3 founders	3 founders, 6 full-time employees and 200 volunteers	In the beginning, collecting money donations in charity, concerts and charity campaign donation boxes in stores. Nowadays, the money collection is a very small part of the business and they work mostly with food leftovers from supply chain and with consumers.	Partnerships and volunteer work	Campaigns carried out in society and grants
C8	2016	Private company	2 founders	2 owners and 208 employees	In the business-to-business (B2B) part, the strategy was an individual approach, presenting the service offered, without focusing on the company size. To the final consumer, it was through campaigns in social media and conventional media, with environmental appeal and cost reduction	Mainly intangible resources such as knowledge and dissemination of the theme in the media.	The business started with no financial resources. Then they received funding from angel investors.

C9	2015	Private company	2 founders	2 owners and 6 employees	It began with an individual approach in events and consumer fairs related to food, being disseminated after disclosure in the regular media	Partnerships and dissemination of the theme in the media, as part of a social movement	The business started with no financial resources.
C10	2018	Private company	2 founders	2 owners. Other services are outsourced	The first clients were from an incubator test base. After, the insertion in the market occurred through social media posts and media reports.	Mainly intangible resources such as knowledge and dissemination of the theme in the media.	The business started with no financial resources from the owners, but with some financial help of the incubator.
C11	2012	Private company	1 founder	2 owners and 10 employees	The first customer was through a Facebook sales page	Mainly intangible resources such as knowledge and dissemination of the theme in the media.	The business started with no financial resources.

BUSINESS EXPLOITATION → IMPACT MEASUREMENT

Cases	Social and environmental impact	Problems facing	Future plans
C1	Pioneers in the city in the process of separation and final destination of different types of waste. They pressed the city government to introduce more sustainable systems to deal with waste. All furniture is recycled, and the sheets, towels and blankets are second-hand, bought from luxury hotels that periodically exchange their items. Offer a more affordable and fairer price. Promote educational workshops and recycling activities to community and guests on various topics related to sustainability.	They would like to be more active in terms of promoting sustainability, but the business routine requires too much dedication in communicating with guests.	To find mechanisms that enable the operation with solar energy, to increase the reach of the workshops and to find strategies to attract more concerned with sustainability clients
C2	In environmental terms, recycling and reusing, since the past year the company saved 1,500 tons of textiles from the landfill. In the social aspect, the cheaper price and social charity. For example, they organize a “shopping night”, many times a year, for homeless people, when they can choose anything from the shop for free.	The destination of clothing leftovers that people did not want, since nowadays, it is donated to a long-distance organization and they understand that it is not a very sustainable solution.	To cover all the country (currently they have 11 stores) in order to provide, in every place, conditions for people to have the opportunity of giving things away.
C3	Environmentally, a total of 217,920 kg of food was saved from being wasted in 2017, translating into over 400,000 lunch meals. It represents almost 500,000 euros in cost savings. Socially, they promote a more critical perception in society about waste. Some restaurants, after beginning to measure, realized that the value of wasted useful food is more than twice as great as estimated. In addition, they participate in the discussion about food waste with other stakeholders.	To raise awareness of some restaurants about the problem, because they often do not realize the relevance of the issue	To expand operations in the country and in other Nordic countries through international chains.
C4	They save more than 67,000 portions of food from being thrown away every month, which corresponds to 167 tons of CO2 emissions saved	The costs of starting operations in new countries	To find a way to scale the business

	every month. Consumers are able to have food with 50% discount, which makes it affordable for people that have low income. They also carry out educational campaigns and workshops, promoting more awareness to the food waste problem.		
C5	Environmentally, promotion of reusing and recycling. Socially, in addition to education, as a social enterprise, they have more than 70% of the team formed by people in situations of social vulnerability, as unemployed, alcoholics in treatment and people with minor convictions, who train and qualify for the professional market	Training and qualification of people, in vulnerability situations, are often not fit or the training time is not sufficient	To expand operations in the country and other countries
C6	Promotes efficient use of resources and public solidarity in reducing responsible consumption of food. In 2017, a total of 7456 tons of food was recovered and donated. The company was responsible to begin a roundtable discussion with different institutions to discuss solutions to food waste.	To manage volunteer work, especially in recruitment and long-term retention issues	To expand operations and the network capacity
C7	In 2017, they donated 40 tons of food, providing assistance to 23,000 people in total, generally families with an average income of 350 euros	The regional partners do not have transport or enough money for all operations. In addition, there is no national regulation about how to deal with the waste. It affects the donation of food best-before-use/by date even if it is suitable for consumption. The lack of knowledge about this issue, society do not understand the difference among other things	To organize conferences to put together all donators, partners, from the ministry and from the government to discuss new solutions to food waste issues
C8	They calculated that they saved 13 millions of meals from being wasted, which correspond approximately to 27 million of CO2 reduction. Consumers are able pay lower prices on food, which makes it affordable for people that have low income. They also carry out educational campaigns and workshops, promoting more awareness to the food waste problem.	Find the best cultural approach to campaigns with consumers in each country	To expand operations in other countries
C9	Based on sales data, the company saved 600 tons of fruits and vegetables from wasting since the beginning of the operation, besides the environmental aspect. They help producers to have better living conditions in Brazil and promote several awareness campaigns about food waste issues, which are disseminated to their 1500 weekly customers, and to public in news.	Manage the logistics of buying from small producers who have small amounts of food and live in areas that are more isolated.	To better organize the management and logistics structure in order to expand activities
C10	The company helped preventing more than 5 tons of food wasting by educating producers that there are alternative markets for these products and promote consumer awareness.	Some vegetables are rejected by consumers and they need to make more efforts to spread recipes to prepare food and remind consumers that the business proposal is to accept these rejected food	To expand operations in the city
C11	The company avoids 170 tons of fruit from being wasted per month, in addition to decreasing the grower's dependence on the industry	To deal with the fruit off season	To increase the number of sales.

Source: the authors

Discussion

The eleven investigated cases provided important elements to analyze the different phases of the SEP. Regarding idea generation, the motivation to start the ventures, in all the analyzed cases, related to prior experience, such as education, work experience, hobby or founders' family background. These results align with findings and propositions in previous studies (Fors & Lennerfors, 2019; Hanohov & Baldacchino, 2018; Jiao, 2011; Karhunen *et al*., 2011; Mets, Raudsaar & Summatavet, 2013; Raudsaar & Mets, 2016; Shane, 2000; Shaw & Carter, 2007). These situations correspond to what Yitshaki and Kropp (2016) calls pull factors or Mets (2012) calls pre-history, since they are motivationally displaced by, other human and non-human stakeholders, causes, and ventures in different dynamic relations, corroborating the propositions in the literature (Fors & Lennerfors, 2019). Belz and Binder (2017) and Perrini *et al*. (2010) found that sensitivity towards some problems relates to entrepreneurs' motivations. In the analyzed cases, prior experience seemed to relate to this sensitivity towards a social or environmental problem.

Generally, it was identified that entrepreneurs' knowledge of initiatives that propose to solve social and environmental problems was the main determinant in the process of ideation, added to experiences and skills in the area, as well as in education or professional life. Previous experience in entrepreneurship was less relevant. As none of the cases reported to be motivated by a high need for achievement and autonomy (Shaw & Carter, 2007), the results meet the propositions of previous studies (Hanohov & Baldacchino, 2018; Karhunen *et al*., 2011) that, comparing to their business for-profit counterparts, sustainable entrepreneurs have significant differences in their motivations. All the entrepreneurs showed to be driven by goal setting (Yitshaki & Kropp, 2016) and consider opportunities that have sufficient potential for positive social/environmental impact more attractive (Guglu *et al*., 2002; Shaw & Carter, 2007; Yitshaki & Kropp, 2016). In this sense, their motivations are mission driven, designed to improve society's well-being (Yitshaki & Kropp, 2016). The findings indicate that their motivations combine sustainability-oriented goals with a profit goal in many cases, as proposed by Sedlmeier, Rombach and Bitsch (2019).

The opportunity recognition, as an output of the idea development, and in this study, has many characteristics deriving from the previous stage, also affected by prior knowledge, as proposed in other studies (George *et al*., 2016; Hanohov & Baldacchino, 2018; Karhunen *et al*., 2011; Shane, 2000) and the person's life trajectory (as proposes Hanohov & Baldacchino, 2018; Karhunen *et al*., 2011). It is worth noticing that, in the analyzed cases, the opportunity

recognition was the combination of endogenously shaped and exogenously given circumstances, according to previous propositions (George *et al*., 2016; Vogel, 2017).

In all eleven cases, the entrepreneurs perceived market imperfections as opportunities to promote sustainable entrepreneurship (Belz & Binder, 2017). They prospected customer demand and possible competitive advantage (Karhunen *et al*., 2011). However, ten of eleven entrepreneurs did not tested the idea, as suggested in previous investigations (Karhunen *et al*., 2011; Yitshaki & Kropp, 2016). This may have an impact on meeting consumer's needs (Guclu, Dees & Anderson, 2002). This problem, although not included in the main result of the study, was identified in the interviews, since some entrepreneurs had to make adjustments in the offered product/service after the venture launch. This could have been avoided maybe by testing the idea before implementing it.

The opportunity development presented very homogeneous results between all cases, mainly because this phase was a continuation of the idea, the social needs and the goals, i.e., there were no big changes throughout the entrepreneurial process. This is an interesting finding because, as Mets, Raudsaar and Summatavet (2013) and Raudsaar and Mets (2016) propose, the entrepreneurial process is cyclic and not linear, with feedbacks and readjustments. For some reason, this occurred in less extent in the analyzed cases. Their business concept (Belz & Binder, 2017) was mostly linear. In addition, there was not a business plan (Margiono, Zolin & Chang, 2018), which may be relevant in this process of feedbacks and readjustments. Perhaps it relates to the fact that this was the first experience of the founders with entrepreneurship. This low level of feedbacks and reflection can lead to minor or relevant problems related to the business' success. Fortunately, in the analyzed cases, only minor adjustments were required.

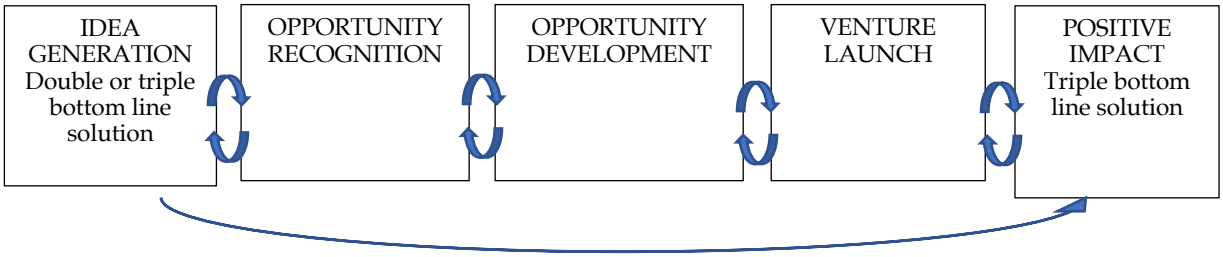
Another novelty that emerged in this study relates to the translation of a social/ecological goal into customer benefits. This is a crucial element. Belz and Binder (2017) discovered that the integration of the triple bottom line is a complex process, which takes place sequentially, not simultaneously. The results in this study indicate an opposite direction, since in most situations both dimensions were integrated at the same time and before venture launch. Despite this, the entrepreneur's focus is on only one dimension (environmental, in the nine situations that this occurred). The social dimension occurs as an impact of the idea and the business operation. To a lesser extent, it occurred just the opposite situations, i.e., the dimensions were integrated in separate moments (first social and after environmental) and this occurred after the venture launch. Here the entrepreneur's focus is on only one of the dimensions (social, in these two cases) and the environmental dimension occurs as an impact of the business.

The venture launch involves the final practical aspects and the effective entry of the business in the market. It is the moment when the sustainable product/service is commercialized in the market (Belz & Binder, 2017). The cases analyzed did not use the possibilities of financial resources proposed by Karhunen *et al*. (2011) or by Belz and Binder (2017). Fewer cases used the possibilities listed by Shaw and Carter (2007), while the majority kept their costs to a minimum. Regarding the legal form, organizations characterized themselves as private ownership logic (Margiono, Zolin & Chang, 2018) when they found a niche market (Belz & Binder, 2017) or charitable organizations (Shaw & Carter, 2007), relying in private money or donations or public grants (Doherty, Haugh & Lyon, 2014). Regarding scalability, the empirical findings are similar to other propositions of Perrini *et al*. (2010), since they seek the scalability of their organizational model in order to increase impact and induce social and environmental change.

Finally, sustainable impact measurement emerges as a new category. This proposition bases on the premises that the creation of positive social and/or environmental impact (according to the classification) is considered a necessary condition for social or sustainable entrepreneurship (Choi & Majumdar, 2014; Cohen, Smith & Mitchell, 2008; Fors & Lennerfors, 2019; Gordon et. al, 2018; Jiao, 2011; Kuratko, 2016; Margiono, Zolin & Chang, 2018; Shin & Park, 2019). If this is a necessary condition for sustainable entrepreneurship and it is, in practice, different from regular entrepreneurship, the SEP does not end with the venture launch. The process of the sustainable entrepreneurship ends when it produces the effective positive economic, environmental and social impact on society. Finally, Kornish and Ulrich (2014) propose that the quality of the original conception of an idea (raw idea) is a key determinant of entrepreneurial success. In all of the analyzed cases through the paper, this proposition was verified, since the original idea was implemented and exploited with minor adjustments until the last phase (impact measurement).

Therefore, based on the findings of this study and the discussion, the following flow for sustainable entrepreneurship is proposed in Figure 1, independent to which theoretical model analyzes the processes that lead to these outputs:

Figure 1 - Sustainable entrepreneurial process flow



Source: the authors

The proposition made in Figure 1 is that, regardless of which model of the phases related to the SEP process, the flow with the outputs, in the case of sustainable entrepreneurship, ends only when it produces the positive impact. This is necessary first to differentiate the SEP from the regular entrepreneur process, since the literature already recognizes impact production as a necessary step for this type of business.

Secondly, according to the analyzed cases, the three dimensions do not always integrate before the venture launch, as proposes Belz and Binder (2017). In the analyzed cases, there were two different situations, both generating impacts in the three dimensions of sustainability. The first situation is when the three dimensions already appear in the idea generation - even if the main objective is to focus only on the social or environmental aspect - and they are reflected in the positive impacts produced in society. The second situation is when only one of these dimensions appears until the venture launch phase. By adaptations in the offered product/services, after the venture launch, the third dimension integrates. This also produces positive impact on the three dimensions of sustainability. Both situations, by prior definition, characterize the sustainable entrepreneur. Therefore, reinforce the importance to include the impact measurement into the SEP. If it were evaluated, in the venture launch phase, this process, although characterized as sustainable entrepreneurship in the real situation, would not be classified in the literature as such.

Social entrepreneurship can also apply to this same reasoning. There are many discussions about the definition of a social entrepreneurship. The social impact assessment in these cases, regardless of this dimension being present in the initial phase of the entrepreneurial process, would provide a more accurate and factual classification. Finally, the quality of the initial idea is extremely relevant to the impacts produced by these entrepreneurs, since little changes throughout the SEP, in the analyzed cases.

Based on this empirical evidences and results found, probably the most important lesson is that in order to achieve the Sustainable Development Goals interested stakeholders must go

beyond the search for the best practice to promote sustainable entrepreneurship. It is concluded that it is more relevant to work together with these three actions through multi-stakeholder's collaboration aiming to converge them: make individuals experience in a more practical way problems in the environmental and social dimensions of sustainability, encourage discussions and reflection processes, as well to disseminate innovative business solutions that are successful in similar or different contexts.

Therefore, universities, government, entities and other stakeholders interested in sustainable development could make efforts to develop the above mentioned mechanisms. These mechanisms can promote: a) Educational experiences in the sustainability area more aligned with the problems of local communities. b) Stronger dissemination of success business cases related to sustainability in other countries and contexts. c) More integration between universities and businesses, so that not only students could be impacted, but also people in these businesses could have access to new solutions and ideas. One of the possibilities is through project-based learning or practice-based learning, which also includes reflection processes. Perhaps these mechanisms can give individuals the necessary experience and enable them to better recognize entrepreneurial solutions to social or environmental problems that they may come across in their trajectories.

Entrepreneurs are facing opportunities to develop win-win business models through sustainable entrepreneurship. They need to be aware of problems in their communities, visit places and different stakeholders and talk to people. When identifying problems, it is first interesting to check whether solutions to similar problems have not been developed elsewhere and to try to adapt to the local context, before trying to develop something new. The results found identified that no significant financial resources are required to promote the venture launch. More robust investments are only required for expansion if the developed solution has the potential to scale in the market. In this sense, scalability is a word that needs to be in entrepreneurs mind when developing sustainable solutions.

Moreover, as part of their operating strategy, these businesses need to promote consumer awareness through many educational campaigns, preferably disseminating intangible values and offering more convenience and / or better price to consumers.

In this sense, supporting startups and new ventures through public policies is essential to generate social change. Government leaders should define which Sustainable Development Goals are most relevant in a given context and offer incentives for new business in these priority areas. It is also important to develop monitoring and measuring tools to assess and promote more effective public policy. These priority areas and measuring tools need to be debated and

decided upon in multi-stakeholder meetings to consider their feasibility. In addition, national objectives must be continuously communicated in relation to what actions need to be developed in short, medium and long term.

Conclusions

The objective of this paper was to investigate how entrepreneurs generate ideas, recognize, develop and exploit opportunities in the context of sustainable development. The findings address a series of mechanisms that occur prior to the process of generating idea and are relevant to the positive impact of these businesses on society. Based on empirical evidences, the entrepreneur's previous experiences and skills in the area, as well as the knowledge of similar initiatives that propose to solve social or environmental problems, strongly relates to their motivation and idea generation. In addition, the quality of the initial idea is extremely relevant to the impacts produced by these entrepreneurs, since apparently little changes occur throughout the process. These mechanisms led to the recognition of triggers that can stimulate the SEP.

The contribution to the literature was achieved by filling the gap pointed out by Belz and Binder (2017) and Hanohov and Baldacchino (2018) about the knowledge in the field of sustainable entrepreneurship, by creating a more wholesome picture about the SEP; and the gap pointed out by Filser *et al*. (2019) related to the need of research addressing how entrepreneurial activities contribute to the achievement of the United Nations sustainable development goals.

Specially, this investigation provided a systemic perspective on SEP and identified that impact measurement is a necessary phase to be included into SEP models, since it allows differentiating this type of entrepreneurship from others. It also enables to incorporate cases that integrate the third dimension of sustainability after the venture launch. This study also responded to a need, pointed out by the literature (Choi & Majumdar, 2014; Dimov, 2011; George *et al*., 2016; Gregori *et al*., 2019; Margiono, Zolin & Chang, 2018; Renko, 2013; Vogel, 2017), about more investigations in different phases of the entrepreneurial process. In the practical field, this study contributes by presenting empirical evidences of the phenomenon of sustainable entrepreneurship, considered rare according to Renko (2013). The holistic knowledge of the sustainable entrepreneurial process provides new information that support academics, policy makers, government and individuals with more appropriate understanding of the conditions that help to stimulate new business activities dealing with economic, social and environmental problems faced in society.

Despite exploring a relevant number of cases, in six different countries, with organizations from different sectors, including non-profit and for-profit, as well as different legal forms, this study has some limitations. One limitation relates to the fact that, as an exploratory investigation, findings cannot be extrapolated to broader populations. To improve generalization, it would also be beneficial to future studies to broaden the sample and pursue comparative research between industries, countries and regions, as well as promote quantitative studies. A second limitation of this study is that the learning process was not evaluated considering space constraint. Future studies may also focus on this relevant aspect. Moreover, cases 2 and 5, cases 6 and 7, and cases 9 and 10 present the same products/services. The fact that they presented a similar pattern of results in the data analysis helps to corroborates the findings of this research, but also represents a possible limitation of the qualitative analysis to be surpassed through future research aiming to diversify the type of units of analysis.

Future studies can also examine the best ways to align educational experiences with problems of local communities, possibilities to promote better impact on the dissemination of successful business cases, and alternatives to increase integration between universities and businesses to stimulate SEP in entrepreneurs and students.

References

The references used in this paper are at the end of the thesis, in the section "References"

4.2 Paper II

Business Models' Innovations to overcome Hybridity Related Tensions in Sustainable Entrepreneurship

Abstract:
This paper aims to investigate how sustainable entrepreneurs innovate in business models to overcome their hybridity-related tensions to achieve environmental, social, and financial goals. A case study was conducted on 12 organizations in seven countries from October 2018 to June 2019 through observation visits, interviews, and secondary data collection. To analyze the data, a content analysis was applied with the help of NVivo Software. The analysis category is based on the definition of the pillars of business models: (1) Value proposition, (2) value creation/delivery, and (3) value capture. Concerning value proposition, organizations engage various stakeholders on developing emotions related to sustainable behaviors. They use the idea of community to promote it, fostering the sharing of intangible values. Associated with these actions, organizations offer more convenience accessing these products or services, home deliveries, facilitating access by geo-location, price reduction, and promoting consumers' education. Regarding value creation/delivery, companies promote partnerships with other stakeholders as part of the main business strategy. They run the business while promoting a social movement. One is dependent on the other. In their engagement in sustainability discussion forums and practical activities, they put together consumers, suppliers, and also other agents outside their vertical supply chain. Operations of all companies are highly internet-based. Social media and transparency are also relevant to their operations. The main characteristic of value capture is that organizations integrate sustainability into their strategy in a way that, just by doing business, they fulfill their social, environmental, and economic missions. Therefore, through innovation in business models, these organizations overcome hybridity-related tensions and achieve financial stability while positively impacting society. The contribution to the literature was achieved by identifying business model innovations in sustainable entrepreneurship, analyzing their characteristics and mechanisms to overcome hybridity-related tensions, and providing empirical evidence about how business models can create and capture different and multiple forms of value.

Keywords: business models' innovation; hybridity tensions; social entrepreneurship; sustainable business model; sustainable entrepreneurship.

Introduction

The limits of regular business models focusing purely on profit have been revealed and the potential for sustainable entrepreneurship is increasingly identified and researched in the literature (Breuer *et al*., 2018). Sustainable entrepreneurship endeavors are often discussed as hybrid businesses, since they face some relevant tensions in reconciling their social and

environmental goals with economic success. Hybrid businesses are defined as businesses that pursue social and/or ecological goals while being guided by a distinct business mindset and some form of commercial orientation, which follow shared values and principles of sustainability (Hahn, Spieth & Ince, 2018).

While hybrid organizational theory identifies managerial tensions related to the different and multiple types of value entrepreneurs are making efforts to create (Pache & Santos, 2013), the sustainable entrepreneurship literature suggests that the existence of holistic business models is possible in the sense that economic, environmental, and social value can all be present and mutually supportive (Davies & Chambers, 2018; Schaltegger, Lüdeke-Freund & Hansen, 2016). To move towards a more sustainable economy, it is necessary to investigate alternative ways that how entrepreneurs can develop new products, processes, and business models that create a positive impact on society (Bocken *et al*., 2019), thereby minimizing possible tensions that may arise.

Some authors provide insights to advance this knowledge; for example, analyzing the sustainable entrepreneurial processes, their idea generation, and describing the operation of some successful business cases and their impact in society (Matzembacher *et al*., 2019); providing other examples of successful business strategies related to sustainable business models (SBMs) (Barbu & Boitan, 2019); analyzing processes related to value creation (Casali *et al*., 2018; Jung & Jin, 2016); or even creating a model of how these entrepreneurs generate ideas and recognize, develop, and exploit opportunities (Mets, Raudsaar & Summatavet, 2013; Raudsaar & Mets, 2016). However, there is a lack of more integrated and holistic analysis of these studies about how these companies promote a more sustainable value proposition, value creation/delivery and value capture, and overcoming possible tensions related to their business models. The answer to this gap allows a better understanding of the mechanisms used by these entrepreneurs to influence the institutional environment and the positive social impact generated their agency.

Therefore, the gap in literature that this research addresses relates to the fact that little is known about the peculiarities of SBMs regarding their ability to achieve environmental, social, and economic goals in the context of commercial markets (Hahn, Spieth & Ince, 2018). Moreover, recent calls highlight the scarcity of empirical evidence and the lack of theory about what constitutes SBMs and how they can be developed (Breuer *et al*., 2018; Lahti, Wincent & Parida, 2018; Todeschini *et al*., 2017), their management mechanisms, challenges faced, and empirical evidence related to how entrepreneurs can create and capture different and multiple

forms of value through new business models (Davies & Chambers, 2018; Dentchev *et al.,* 2018; Lüdeke-Freund *et al*., 2017; Margiono, Zolin & Chang, 2018; Parida, Sjödin & Reim, 2019).

Based on these gaps, this research aimed to answer the following research question: How do sustainable entrepreneurs innovate in business models to overcome hybridity-related tensions to achieve their environmental, financial, and social goals in order to influence the institutional environment and generate positive social impact?

Theoretical background

The theoretical background is based on the literature of business models and sustainability-oriented business models' (SBM) innovations to overcome hybridity-related tensions.

Business Model

Although the concept of business models varies (Amit & Zott, 2001; Boons & Lüdeke-Freund, 2013; Zott, Amit & Massa, 2011), to set the framework of analysis, this paper uses the concept provided by Osterwalder, Pigneur and Tucci (2005), which is widely used and accepted. A business model is "a conceptual tool containing a set of objects, concepts, and their relationships with the objective to express the business logic of a specific firm, what value is provided to customers, how this is done, and with which financial consequences."

There is no agreement in the literature on the concept and characteristics related to business models. The common point between studies that analyze this question is that they share the idea of conceptual extension that moves from customers to multiple stakeholders, from a single focus on profit to the integration of other forms of value, from a business with a singular focus to one that focuses on network perspectives, and from a purely organizational to an embedded system view (Breuer *et al*., 2018). Business models seek to explain both value creation and value capture (Zott, Amit & Massa, 2011). Osterwalder, Pigneur and Tucci (2005) provide an initial clarification of the pillars of business models with four elements of analysis related to the product, customer interface, infrastructure management, and financial aspects.

Subsequent revisions consolidated the core elements of a business model: (1) Value proposition, (2) value creation/delivery, and (3) value capture (Osterwalder & Pigneur, 2010). The value proposition describes the assortment of products and services developed by a business to create value for customers (Osterwalder, Pigneur & Tucci, 2005; Osterwalder & Pigneur, 2010). It refers to values related to some products and services (Schaltegger, Lüdeke-

Freund & Hansen, 2016; Boons & Lüdeke-Freund, 2013). Value creation and delivery are related to the main activities developed by the organization that sells a certain product/service. Among other characteristics, it is also related to obtaining resources, routine management, communication and commercialization channels, use of technologies, and strategic partnerships (Osterwalder & Pigneur, 2010). In other words, it relates to resources and infrastructure and the circumstances under which the company promotes value creation (Schaltegger, Lüdeke-Freund & Hansen, 2016). On the other hand, value capture concerns cost structures and business revenue (Schaltegger, Lüdeke-Freund & Hansen, 2016; Osterwalder, Pigneur & Tucci, 2005; Osterwalder & Pigneur, 2010; Bocken *et al*., 2014).

The literature presents other relevant definitions about business models. For example, Afuah (2004) proposes that a business model needs to answer what product/service the company provides and the process by which it is done, how this product/service will be marketed and how revenues will be generated from it, what the costs are, what the price is, and how this product/service will be chosen instead those of the competitors. Saniuk and Grabowska (2019) understand that considering the new era of innovation, a business model is based on the configuration of social architecture and technological architecture of interconnected business processes. They recognize as elements of such a business model the social architecture (knowledge resources, management systems, competencies, employee development, and motivation), the technological architecture (IT and telecommunications devices, computers, information technology systems, robots, etc.), and the business processes that combine these databases (essentially infrastructural) and, at the same time, derive from them the resources necessary for the implementation of appropriate products that create value for the client. Grabowska, Gajdzik, and Saniuk (2020) propose that a business model needs to be based on cooperation and better use of the available resources to achieve a competitive advantage.

A business model for sustainability is defined by Schaltegger, Hansen and Lüdeke-Freund (2016) as the way a company creates and delivers value to its stakeholders; for example, by promoting sustainability beyond its organizational boundaries as well as how the company captures economic value by doing such an activity. It involves actions related to describing, analyzing, managing, and communicating the company's value proposition to all its stakeholders. SBMs are expected to incorporate economic, environmental, and social dimensions at the same time (Bocken *et al*., 2014), whether changing specific aspects of existing business models on the market or developing new business models (Dentchev *et al*., 2018).

In this research, we adopt the concept that an SBM describes the process of how an organization creates, delivers, and captures value in economic, environmental, and social dimensions. According to Nosratabadi *et al*. (2016), the process of SBM forms an innovative part of a business strategy. Some authors emphasize the relevance of effectively incorporating sustainability into the business strategy. In this sense, sustainable entrepreneurship makes use of innovations in business models to achieve both economic, environmental, and social goals (Hahn, Spieth & Ince, 2018). As proposed by Amit and Zott (2001), business models are opportunities for innovation and can be considered a relevant alternative for creating value for the organization capable of bringing benefits to its customers, suppliers, and other partners. They can have the ability to influence stakeholders' behavior and, consequently, generate positive social impact. Therefore, the concept of SBM innovation refers to the process of creating or modifying business models to create value at the same time related to the economic, environmental, and social spheres, as well as to mitigate the related hybrid tensions (Boons & Lüdeke-Freund, 2013).

SBM' Innovations to Overcome Hybridity Related Tensions

The financial stability in the business market that proposes to bring solutions focused on sustainability (as is the case of hybrid businesses) is a prerequisite for achieving the respective social and ecological goals. These aspects are strongly connected (Hahn, Spieth & Ince, 2018). Nonetheless, these interconnections are often related to some complex tensions (Pache & Santos, 2013). For example, some businesses are often confronted with different forms of resource scarcity (Moizer & Tracey, 2010). These tensions usually create different challenges at the business model level, which require complex strategies and procedures to solve or minimize, while aligning the various goals of the business related to the triple bottom line (Moizer & Tracey, 2010). In this context, some authors propose that these hybrid businesses are capable of developing innovative solutions like the adoption of new business models (Wilson & Post, 2013) that help to mitigate these tensions as a key mechanism for their sustainable value capture (Davies & Chambers, 2018).

According to Schumpeter (1961), the entrepreneur is an agent of change highly related to innovation processes in companies by inserting new products/services and new ways to produce, manage, or transact that meet market requirements. Schumpeter consider that innovation is successfully exploring new ideas. In the Schumpeterian view, there are four types of innovation: (a) Product innovation: Introduction of new or significantly improved products or services in the market; (b) Process innovation: Implementation of new or significantly

improved production processes and logistics of goods or services; (c) Organizational innovation: Implementation of new organizational methods in the practice of business, work organization, and/or external relations; (d) Marketing innovation: Implementation of new marketing methods involving significant improvements in product design or packaging, price, distribution, and promotion. Innovation is related to creativity, new solutions, new products, new markets, and/or new technologies, and it may happen in all different types of industries and firms.

The framework of Osterwalder and Pigneur (2010) and Bocken *et al*. (2014) of the core elements of business models—value proposition, value creation/delivery, and value capture—is defined as the analysis of categories to better understand the context of hybrid businesses and innovations in SBMs.

Regarding value propositions, Davies and Chambers (2018), through a case study analysis, identified some problems faced by entrepreneurs. They mainly relate to the fact that the product or service of the analyzed company was more expensive compared to that of its competitors. This was due to the costs associated with a more sustainable product/service. They also found tensions related to the lack of consumers willing to pay the related extra cost for sustainability.

Some entrepreneurs addressed these challenges by developing a business model able to integrate the sustainability value into the value proposition, simultaneously and at different levels considering the three dimensions of sustainability by either improving consumers' perception of quality improvement, or by offering exclusivity of that product/service. This enabled them to improve potential hybrid tensions, mostly identifying customer segments willing to pay the associated extra price. Therefore, two business models can be described, both with associated higher prices related to sustainability: The first one focuses on customer niches interested in paying higher prices when sustainability aspects are associated with an increase in quality. The second business model focuses on exclusive access to this product/service. Both business models are successful in the analyzed cases (Davies & Chambers, 2018). Local products, fair prices, offering products below market price (Ribeiro, Sobral & Peças, 2018), and promoting a network community (De Bernardi & Tirabeni, 2018) are strategies also identified in the literature and applied in specific contexts, as well as consumer education and the encouragement of more sustainable use (such as encouraging greater product longevity) and healthy products (Bocken *et al*., 2014). Another possible alternative includes accompanying the offer of products/services and promoting intangible values associated with them (De Bernardi & Tirabeni, 2018).

Value creation and delivery must properly be aligned with the company's value proposition. Therefore, product supply, employee engagement, aspects of financial management, and partner selection are some of the aspects that need to be considered. All of these dimensions have tensions. For example, in distribution, one of the problems is an ethical issue, since sustainable products are exposed alongside highly polluting products. Secondly, there is a time and cost of dealing with retailers, where the product goes through many middlemen and ends up with a very high price (Davies & Chambers, 2018). There are some systems that companies adopt to overcome these problems. The first is the sale through big and general retailers, despite the possible ethical reservations. Second, and very commonly, businesses use a different and technological approach: The internet. To achieve this, a successful strategy is to develop skills to increase presence online and in discussions related to sustainability, either through e-commerce or forums. It was also identified that, in such cases, the majority of marketing expenses are used on social media (Davies & Chambers, 2018). Web presence is a toll also recommended for the promotion of more sustainable consumption behavior habits (De Bernardi & Tirabeni, 2018). In addition, increasing efforts in education for sustainability are necessary for sustainability-based value creation for stakeholders (Bocken *et al*., 2014).

Internet-based operations and communications (Ribeiro, Sobral & Peças, 2018) are also recognized in sustaining an environmentally low-impact system of production and distribution (Franceschelli, Santoro & Candelo, 2018). Investing in brand reputation (Ribeiro, Sobral & Peças, 2018), promoting the connection between social network technologies and territoriality, and seminars and events on information (De Bernardi & Tirabeni, 2018) are other possible resources. The promotion of good customer relationships is important. Other recommended strategies are good customer service, reward programs, and promotional events to engage consumers in the business activity in order to be highly valued and to promote long-term and trusting relationships with customers (Gopalakrishnan & Matthews, 2018). Partnerships with stakeholders are essential (Raub & Martin-Rios, 2019) for value capture to produce a great impact (Franceschelli, Santoro & Candelo, 2018). New value can also be created through transparency, such as publishing information about the company's operation (Amit & Zott, 2001).

Value capture is considered one of the biggest challenges in hybrid business. It relates both to the achievement of financial stability (value capture) and a positive impact on social and environmental dimensions. The main tension relates to the potential conflict between redistributing profits or reinvesting money into the business. The solution that some successful

entrepreneurs built to avoid internal tension is that, by just doing their business, they can fulfill their environmental and social missions under their unique business model (Davies & Chambers, 2018).

Hahn, Spieth, and Ince (2018) also identified that many enterprises strongly combine their commercial orientation with their environmental and social mission. They perceive it as a novelty, since it represents a previously sustainability dimension that was nonexistent or underdeveloped. Efficiency-focused business models in hybrid businesses occur when the company becomes an enabler of new actions and sustainability practices in other agents of its supply chain. This also occurs when their business efficiency generates the connection of actors who were not in contact before and, through this, disseminates sustainable solutions in new or different contexts. In such cases, an intermediary approach occurs when these companies help to facilitate a more sustainable supply chain.

Materials and Methods

Considering that the study is focusing on SBMs, an exploratory and qualitative methodology was chosen. The research design followed a protocol suggested by Yin (2017) in relation to case selection criteria, the approach to organizations, preparing for data collection, conducting interviews, and observation. A case study was conducted on 12 SEs in seven countries (Brazil, Canada, Denmark, Estonia, Finland, Latvia, and Lithuania). The countries were chosen using criteria of the Organization for Economic Cooperation and Development (OECD) Social Expenditure Database of 2019 (OECD, 2019), which is related to some of the Sustainable Development Goals. According to the indicators in the ranking, Denmark and Finland occupy leading positions, investing more than a quarter of their GDP. Canada also invests a significant amount, without occupying the top positions. In the intermediate positions, it is possible to find Estonia, Latvia, and Lithuania. On the opposite side is Brazil, which is not even listed in the ranking.

Potential companies to participate in the study were identified through many worldwide and Brazilian databases on entrepreneurship, technology and clean technology businesses, social and sustainable entrepreneurship, and the circular economy, as well as websites and news related to these issues. Examples of these are The Food Waste Innovator Database, produced by ReFED - Rethink Food Waste Through Economics and Data (2018), Nordic/Baltic Tech Start-up Databases and Maps—Silicon Vikings (2019), the Global FoodTech Map (2019), and the FOODTECH Movement (2018). The initial screening was based on the following criteria:

(1) Considered to be a sustainable entrepreneurship, i.e., addresses economic, social, and ecological goals; (2) availability of the owner and/or a manager responsible for the business strategy for an interview. This initial screening rendered sixteen suitable enterprises, of which twelve agreed to participate in the study. In that context, comfort sampling was implemented in the initial phase of the empirical study. After the eighth case, the information from the observations, interviews, and secondary data began to recur, achieving the redundancy stage. However, a decision was made to move further and complete the data collection with all 12 SEs that agreed to participate, and, therefore, it was also confirmed that the selection of the investigated companies was exhausted and that it was possible to find typical cases to investigate.

The data collection process occurred from October 2018 to June 2019. Observation visits were made to all SEs. During these visits, interviews were conducted with founders (F) and/or managers (M). Each company was asked 27 questions related to their entrepreneurial process (based on Matzembacher *et al*., 2019) and 25 questions related to the origin of the business, its operational process, and its impact. A pilot study was prepared, with data collection tools being analyzed by fellow researchers. After validation of the data collection instrument, observation visits were made to companies. All interviews were recorded and transcribed under conditions of confidentiality. In the end, 10 h and 38 min of interviews were recorded. The average is 53 min of interview per company. In total, 193 pages of transcription were obtained, inserted into NVivo Software, and coded according to three major groups of analysis categories: Value proposition, value creation/delivery, and value capture.

Secondary data were also collected from scientific papers (P), news (N), and websites (W). They were used to obtain information about companies before the interview process. Subsequently, secondary data were integrated into the NVivo database as sources of information in the data analysis process.

The use of multiple sources of evidence (observation on site, interviews, and secondary data) was used in this research as a type of triangulation. The triangulation is possible by multiple data collection methods and provides stronger substantiation of constructs and hypotheses (Eisenhardt, 1989). Case studies using multiple sources of evidence are more highly rated, in terms of their overall quality, than those that rely on single sources of information. By developing convergent evidence, data triangulation helps to strengthen the construct validity of the case study (Yin, 2017).

Table 1 summarizes the data collection.

Table 1 – Data collection

Case	Market Entry	Country	Industry	Observation on Site	Interview Length	Interviewed	Secondary Data
C1	2010	Estonia	Hotel	Yes	58 min	1 F	5 N + 3 W
C2	2004	Estonia	Recycle	Yes	35 min	1 F	1 P + 4 N + 9 W
C3	2016	Finland	Food Sector	Yes	34 min	1 F	4 N + 8 W
C4	2015	Finland	Food Sector	Yes	1 h 02 min	1F + 1 M	3 P + 7 N + 5 W
C5	1989	Finland	Recycle	Yes	1 h 04 min	1 F + 1 M	3 N + 6 W
C6	2001	Lithuania	Food Sector	Yes	1 h 31 min	1 F + 1 M	9 N + 4 W
C7	2009	Latvia	Food Sector	Yes	45 min	1 F + 1 M	7 N + 3 W
C8	2016	Denmark	Food Sector	Yes	1 h 8 min	1F + 1 M	2 P + 14 N + 5 W
C9	2015	Brazil	Food Sector	Yes	59 min	1 F	1 P + 10 N + 3 W
C10	2018	Brazil	Food Sector	Yes	47 min	1 F	2 N + 4 W
C11	2012	Brazil	Food Sector	Yes	52 min	1 F	6 N + 3 W
C12	2017	Canada	Food Sector	Yes	23 min	1 F	5 N + 2 W

Source: the authors

The data were analyzed using NVivo 12 Software since a content analysis was performed. NVivo is a computer-assisted qualitative data analysis software, i.e., it provides data management packages, which support the researcher by reducing the complexity of the task of organizing and analyzing a large volume of qualitative data. Content analysis was chosen since it is a systematic and a replicable technique for compressing large volumes of qualitative data into fewer content categories based on explicit rules of coding (Stemler, 2000). The analysis category is based on the definition of Osterwalder, Pigneur and Tucci (2005) of the pillars of business models: Value proposition, value creation/delivery, and value capture. In order to guarantee the privacy of the companies, the observation notes, interviews, and secondary data were coded as C1, C2, etc. A cross-case was also performed to identify the similarities and differences between the investigated cases. It is worth mentioning that, according to Yin (2017), in addition to triangulation, using evidence from multiple cases results in a more robust and reliable study.

Results

Based on this empirical evidence, innovations in business models to overcome hybridity-related tensions were identified concerning value proposition, value creation/delivery, and value capture. Initially, the cases will be described, followed by the results found according to the categories of analysis.

Cases Description

C1 is a hostel with a sustainable proposal, from the acquisition of furniture and items used physically, the operations, and environmental solutions applied to the place. They offer lower prices compared to other hostels. They also have a great connection between the community and customers by doing workshops focused on environmental and social solutions. C2 is a company that collects products that are not used anymore by the population, repairs them (when necessary), and resells them to final consumers. C3 is a consultancy firm that operates digitally. They help commercial kitchens to understand, quantitatively and qualitatively, the causes of their food waste and to seek solutions to reduce this problem. C4 is a company that operates through an app to connect retailers with food surpluses to consumers using geolocalization. They reduce food waste with a lower cost policy for consumers. C5 is very similar to C2, but operating in a different country. C6 and C7 work with supply chain food recovery solutions and redistribution, each one operating in a different country. C8 is very similar to C4, but operating in a different country. C9 and C10 offer the same products. Both are digital platforms that promote solutions for food waste at the producer level due to non-standard compliance or the absence of a market. They sell monthly associations to purchase boxes with these foods at a lower cost for the final consumer. C11 has a business model very similar to that of C10, but instead of focusing on end-consumers, it also focuses on restaurants and general companies. C12 is very similar to C4 and C8, but operating in a different country.

Business models' innovations to overcome hybridity related tensions

In relation to the value proposition, the higher price of more sustainable products is a tension pointed out in the literature. The twelve organizations studied generated business models in which the price of the more sustainable products/services offered was not above the average. In most cases, organizations offered lower prices, increased convenience to customers by delivering to their homes, or facilitating access by geolocation. Another feature is that most businesses involve multiple stakeholders as end customers. All of the analyzed cases developed a sustainability value fostering the sharing of intangible values beyond their products/services. They sell the idea of the customer being part of a community or movement that promotes social and environmental benefits. To achieve this point, all cases strongly promoted consumer education. The following detailed description of each case helps to understand better their

innovation in the value proposition. Table 2, at the end of the results section, provides the cross-case overview.

C1 focuses on tourists that are in the city or students of the local university. The company's idea is to support the entire operation in more sustainable actions. In this way, all furniture and items are recycled. For example, towels and blankets are bought as new from luxury hotels that have a periodic policy of purchasing and exchanging these materials. The operations are all carried out online, without using paper. They recycle and compost all of the waste generated. They offer a lower cost to customers. They also promote educational workshops and recycling activities related to sustainability to the community and hostel guests. This is the only case that does not offer convenience to customers.

C2 focuses on people that want to reuse or recycle for environmental, social, or financial reasons. The prices are cheaper for second-hand products. The convenience here is on the opposite side: People who deliver items to resell can leave the products at many collection points and, depending on the product, the company will withdraw it at their homes. They promote consumer education and try to build a community around the idea that second-hand purchase is a "cool" behavior, engaging customers, general citizens, media, and other stakeholders. In the past year, they saved 1500 tons of textiles, avoiding that they go to landfills.

C3 focuses on commercial kitchens with food waste, such as restaurants, hotels, schools, and other commercial kitchens. As they are pioneers in the country and region, it is not possible to compare their prices. They operate as an app that measures the causes of food waste. The use is very fast and intuitive to fit the kitchen's operations. Based on the identified causes, they promote employees' education in the best alternatives to reduce food waste. According to their reports, in the previous years, they prevented 217,920 kg of food from being wasted, and these companies saved around 500,000 Euros. Food waste reduction is associated with many environmental benefits. As they are part of many forums and discussions, they perform social work promoting a more critical perception in society about food waste.

C4 operates through an app with geolocation. The company offers solutions for surplus food in restaurants, supermarkets, or grocery stores. The target is customers concerned with environmental issues and/or people with economic restrictions, since the products are offered at a lower price. The offers are based on geo-localization. Customers can find places close to them using the company´s app. They receive a commission for each transaction. On average, every month, they save around 67,000 portions of food, which, if they were not sold, would go to waste. Suppliers save money and avoid food waste. The company also carries out many

educational campaigns for its consumers and the general community through news and social media. They sell the idea of a "community of food waste fighters".

C5 is very similar to C2. In fact, it is a replication of their business model by other people in a different country. The description of the company's value proposition is the same as C2.

C6 and C7 both focus on retail trying to deal with food waste and seeking to be a socially responsible company on one side, and with disadvantaged people on the other side. They work as mediators, collecting food that would be wasted mostly from retailers (but sometimes also from other supply chain agents and customers). They offer a solution to the waste that would have to be managed by these stakeholders, generating convenience for them, and delivering to organizations that deal with vulnerable people. C6 operates without charging any stakeholders for each transaction. C7 is planning to charge a small fee from retailers and from charity organizations who receive the food, as they understand they provide a service to both. In the last year, 7456 tons of food were redistributed by C6. The company is also part of an important roundtable discussion about food waste solutions at the industry and government level. In the last year, C7 provided solutions and assistance to around 23,000 people.

C8 is very similar to C4. It has the same business model, but operates in a different country. The company's business is also based on offering lower prices to consumers, associated with strong educational campaigns aimed at the community in general. They make a strong effort to promote their image as the leaders of a "community of food waste fighters". In total, based on their operations, it is possible to calculate that they provided a new market for 13 million meals, avoiding this amount of food waste.

Both C9 and C10 have the same business models and operate in the same country, each one in different regions, at a distance of around 1000 km. Both develop solutions to connect producers with non-standard compliance and surplus food with consumers through digital solutions. Their price is cheaper compared to regular markets because these products would be discarded. Both promote consumers' education and have many campaigns on social media. They spread a strong campaign that imperfect-looking foods are "perfection of nature" and that it is "cool" nowadays to buy these products. C9 also focuses on regular media, schools, and private companies. From the beginning of the company, the calculation is that they provided a second market for 600 tons of fruits and vegetables. This food would have been wasted. They also increase the income of producers, which is important to avoid rural exodus, especially in developing countries. As C10 is newer than C9 and operates in a smaller city, their impact is lower; they provided a second market for around 5 tons of food.

C11 has the same business model as C9 and C10; however, the focus is only on oranges. In addition, they focus, in addition to the final consumers, on restaurants, commercial kitchens, and companies in general, accompanied by a reduced-price proposal. The monthly estimation is that they can offer an average of 170 shades of orange to the second market. This reduces food waste and decreases the farmers' dependence solely on the industry.

C12 is very similar to C4 and C8, with the same business model, but operating in a different country. The app informs users through geolocation about deals in nearby restaurants, whose price reduction in some cases reaches up to 70%. They "saved" over 16,000 meals. They spread a strong campaign that imperfect-looking foods are "perfection of nature" and that it is "cool" nowadays to buy these products. Compared to other similar companies, a percentage of the profit with each transaction is donated to a charitable organization that works as a food bank, promoting food rescue and redistribution.

Concerning value creation/delivery, most of the companies promote partnerships with other stakeholders in their value chain as part of the main business strategy. Ethical issues and individual/corporate social responsibility are the main strategies used to promote it. All companies are highly internet-based in their operations, or at least for the promotion of their activities. Social media and engagement in sustainability discussion forums and practical activities are present in all cases. They also make efforts to be transparent with customers through reports or information in social media.

Specifically, C1 obtains clients through the internet, where they promote the company, especially using social media. They try to promote environmental issues and awareness of a more sustainable life through workshops, which are based on partnerships with other stakeholders from the city and often their guests. C2 tries to make their stores look like regular shops concerning the physical structure and decoration to attract not only people with financial needs, but also the general population focusing on environmental aspects. The shops are also located in central points of the cities. They believe it is a good strategy to create the interest for more people to recycle and reuse. They make strong public campaigns appealing to environmental aspects. They also use social media as a way to attract customers and bring information about sustainability as well as disclose data on the operation of the company. They have partnerships with marketing agencies who voluntarily make posters about recycling and the importance of the company. They also report activities annually to the stakeholders.

C3 makes personal visits to their potential clients to present their product/service, always providing successful examples. They make an effort to explain that their virtual consultancy provides not only environmental benefits, but also helps in business management

and cost reduction. The internet is also used to build brand reputation and to disseminate questions related to the importance of food waste. They explain that since their business model is new, it is necessary to make more efforts and spend more money with marketing campaigns to reach potential customers. They also make reports related to their activity, providing information about their environmental and economic impact.

C4 operations are entirely based on partnerships with retailers, restaurants, coffee shops, and other commercial kitchens. Initially, the acquisition of these customers occurred personally, visiting each possible partner (supplier) and addressing consumers on the street. After the dissemination of the business, the internet has become the main form of attracting new partners and customers, mainly through media reports and dissemination of information about their positive impact on environmental, social, and economic terms for many different stakeholders in the food supply chain. The company promotes educational campaigns on social media every day, disseminating information about economic, social, and environmental problems, as well as how consumers can help to solve some of these problems by using company services, but also in the related actions in their daily life activities. They also share customers' posts talking about the company, focusing heavily on environmental aspects and cost reduction outcomes more than the social aspects. They provide data related to their operation.

C5 operates in the same way as C2. The difference nowadays is that C5 has more than 70% of the team formed by employers that were previously considered as socially vulnerable, i.e., unemployed, alcohol addicts being treated, or criminals, for which they offer training and follow up the evolution in the professional trajectory.

C6 and C7 promote value creation and delivery in very similar ways. In fact, they practically do the same activities, but in different countries. There is a kind of informal partnership and exchange of information on the best management practices between them (C6 and C7). In addition, they participate in the same international support network. Communication is completely internet-based, using instant message applications and social media, both for communication and business promotion. Both seek to establish partnerships and to network with other stakeholders that carry on corporate social responsibility initiatives to make joint efforts. Recently, they started to share successful case stories to recruit new partners, together with the idea of promoting brand image as socially responsible, as well as tax deductions, which, in some situations, are provided by the government. In addition to conventional workers, they also rely on volunteers, but at a rate that does not compromise operations. These actions help to promote consumers' education. They also report activities annually to all stakeholders.

C8's value generation can be described as equal to that of C4. The only difference is that the company (C8) has a larger structure and operates in more countries. C9 and C10 follow the same lines as C4 and C8 with a view to be strongly internet-based, as regards the acquisition of customers initially and, later, the promotion of educational campaigns on the internet, social media, and regular media. All of them strongly participate in sustainability events and discussions. C9 and C10 also disclose sales volumes to customers, along with estimates of social and environmental impact. The difference is that both C9 and C10 have farmers as suppliers and business partners. In addition, C9 holds a partnership with other companies to share the same distribution system, promoting local trade and campaigning for oil collection at consumers' homes.

C11 is strongly internet-based but a bit more "closed" in terms of advertising as compared to the others. It acts a lot in the general media and social media, but rarely participates in events and engagement with other stakeholders. Ethical issues and individual/corporate social responsibility are the main strategies used to promote their business, and they make efforts to be transparent with their customers, mainly disclosing information in social media and annual reports.

C12 generates value exactly in the same way as C4 and C8, with the same business model. Compared to these two, it has the smallest organizational structure and it is the youngest company. The only difference is that its engagement in charitable activities is greater than in the other cases.

The main characteristic of value capture is that all organizations avoid hybrid tensions by integrating sustainability in business models, i.e., just by doing business, they fulfill their social/environmental and economic missions and, therefore, positively affect society. This means that promoting sustainability integrates the business strategy and corresponds to the product/service offered. As relevant information, all of the analyzed companies are operating with positive cash flow and with the initial investment paid. They are recognized as successful cases in their areas.

An additional finding is that some of these organizations started their activities with low financial resources available. They overcame this lack of financial resources by making use of creativity, internet-based solutions, manual/intellectual work, partnerships, and/or recycling. For example, C1 started its business with almost no financial resources. They asked the landlord to give them some months of exemption to pay the rent and used recycled furniture that they got by asking for donations or collecting from garbage depots. C2 also started with almost no financial resources. They also got three months of rent exemption from their landlord and

looked for volunteer workers. C4 started working from home. Their only additional cost was the website's fee. They explained that, for them, knowledge was the most important resource, since most of their operations could be made online. C7 was initially a punctual and voluntary action that evolved over the years. C8, C9, C10, C11, and C12 presented similar situations: All of them started with very low operating costs, largely based on technologies and digital platforms as the primary cost, and family/household organizational structure operations. As the businesses consolidated in the market, they began to have more formal and structured organizational structures.

It is very common in the discourse of these entrepreneurs that a creative idea that generates value for society does not necessarily need large financial resources in its initial phase. In the investigated cases, a more robust investment became necessary only after the operation was experiencing some level of success, and the business needed to gain scalability.

Table 2 presents a summary of the results related to business models' innovations to overcome hybridity-related tensions, showing that, in general, the cross-case analysis corroborated the same outcomes.

Table 2: cross-case results of business models' innovations to overcome hybridity related tensions

	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12
VALUE PROPOSITION												
offer lower prices	✓	✓	-	✓	✓	✓	✓	✓	✓	✓	✓	✓
convenience to customers	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
multiple stakeholders	✓	✓	-	✓	✓	✓	✓	✓	✓	✓	-	✓
foster the sharing of intangible values	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
consumer education	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
VALUE CREATION/DELIVERY												
partnerships with other stakeholders	✓	✓	-	✓	✓	✓	✓	✓	✓	✓	-	✓
ethical issues/ind./corp. social responsibility	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
highly internet-based	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
engagement in sustainability discussion	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-	✓
transparency	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
VALUE CAPTURE												
sustainability integrates the business strategy	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
financial balance	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Source: the authors

New/Unresolved tensions

While innovations in the business model can cope with many business-related tensions, especially by balancing positive environmental and social activities with good financial health, it was possible to identify some new/unresolved tensions. Most of these tensions relate to value creation/delivery and are not a challenge to the success of the business in relation to the three dimensions of sustainability. These emerging tensions can be embraced by future research, emphasizing that many of them are difficulties shared by regular businesses, and are not exclusive to SBMs. However, these questions emerge as new tensions and lack solutions.

C1 related a need to be more active in sustainable actions with their community and clients; however, the business's daily process requires too much time and effort in communicating with their customers. C2 relates that the destination of the clothes that are not sold is a problem, since the best solution they have is to donate them to another company that is distant. They understand that it is not a sustainable solution. C3 explains that, sometimes, it is still difficult to engage commercial kitchens in finding solutions to food waste, even when they can reduce operational costs, since many companies understand that such a problem is a "part of the business". C4 faces problems related to business model replication in other countries, which they understand is very expensive, and that it is difficult to maintain finances. This was the case most related to value capture. C5 reports problems related to the qualification of employees when they come from vulnerable situations, which takes up a lot of time and effort. C6 has its staff, but also relies on volunteer work, where they face difficulties in recruitment and long-term retention. C7 faces problems with transportation in small cities, further away from the main centers. In addition, there is a lack of regulation on options to deal with food waste or food surplus in good conditions to be consumed concerning donations. C8 faces difficulties in the issue of scalability, especially related to cultural differences between countries. C9 faces logistics problems related to distribution and food preservation, as it is based in a city of over 12 million people. C10 also faces logistical issues but related to the supply area. The majority of their suppliers are small farmers who have limited resources. As the business proposition is to maintain a fair trade, they try to find the best management model that promotes a balance between fair payment to the producer and profitability for the business. C11 faces the same problem as C10: Difficulty with distribution in large urban centers. C12 faces tensions about business growth in a structured manner, since they have good opportunities for expansion, but need an organizational structure to embrace these opportunities without jeopardizing the organization's finances.

Discussion

This study used the concept provided by Osterwalder, Pigneur and Tucci (2005), Osterwalder and Pigneur (2010), and Bocken *et al*. (2014) of analyzing categories to better understand how sustainability-oriented business models (Schaltegger, Hansen & Lüdeke-Freund, 2016), by incorporating a triple-bottom-line approach (Bocken *et al*., 2014), are able to innovate in order to overcome some of the complex tensions related to hybrid business models to influence the institutional environment and generate positive social impact.

The literature points out some tensions (Pache & Santos, 2013; Davies & Chambers, 2018), which this research made an effort to address. Concerning value proposition, the literature points out the higher price of more sustainable products as the biggest challenge. One way to overcome this is to develop niche markets (Davies & Chambers, 2018). The analyzed cases provide evidence that not every sustainable business model will necessarily have a higher priced product/service, since eleven of the twelve analyzed cases offer products/services that allow consumers to save money, as compared to traditional market channels. Ribeiro *et al*. (2018) had indicated that this may be a possibility, of which this research found empirical evidence. As proposed in previous literature (Bocken *et al*., 2014), we also found that all investigated cases develop consumer education activities and encourage the use of more sustainable products, such as greater longevity in use, recycling, or avoiding food wastage. They foster the sharing of intangible values (De Bernardi & Tirabeni, 2018). This finding is interesting because these companies bring the idea of community, creating an experience that goes beyond the simple act of consuming. They constantly reinforce the discourse that these consumers help to reduce the environmental impact of their consumption and support local businesses, avoid rural exodus, help to promote fairer commercialization, etc. This is constantly reinforced by these companies as if these consumers had an ethos that set them apart from others. Two other new findings in this paper are the development of greater convenience to consumers and organizations engaging multiple stakeholders in developing an emotional stake in relation to sustainable behaviors.

Concerning value creation/delivery, ethical issues and costs associated with middle men are some of the challenges that hybrid businesses face. As previously found by De Bernardi and Tirabeni (2018), Davies and Chambers (2018), and Ribeiro, Sobral and Peças (2018), the twelve cases studied have a strong technological approach, since they are highly internet-based in their operations and consumer education activities. Their internet-based operations, besides

sustaining an environmentally low-impact system of production and distribution (Franceschelli, Santoro & Candelo, 2018), also help to promote their brand reputation (Ribeiro, Sobral & Peças, 2018). These companies are also engaged in sustainability discussion seminars, as proposed by De Bernardi and Tirabeni (2018). Their participation in such activities, besides building brand image, also helps in promoting a good customer relationship, a relevant activity according to Gopalakrishnan and Matthews (2018). Transparency was also found as a way to promote a good customer relationship and brand reputation (Amit & Zott, 2001), which most of the companies make an effort to promote. Another novelty found in this study refers to the appeal for individuals and/or organizations to engage in the activities developed by the companies through an ethical discourse, especially arguing about an individual or corporate social/environmental responsibility. This is closely related to the idea of the community mentioned above. However, this engagement ultimately brings together producers, retailers, consumers, non-governmental organizations (NGOs), and other stakeholders in these discussion forums, like other businesses and civil society. It is as if these companies divided their activities into two large groups: The business itself and the movement for the environment and social issues. One is extremely dependent on the other.

The main characteristic of value capture is that all organizations avoid hybrid tensions in integrating sustainability into the business model. First, this means that by doing business, they fulfill their social/environmental and economic missions and, therefore, they have commercial stability and also positively impact society. Second, they have sustainability integrated into their strategy. The commercial stability of hybrid businesses is a prerequisite for achieving the goals related to sustainability (Hahn, Spieth & Ince, 2018), and resource scarcity is considered a big challenge (Moizer & Tracey, 2010). The cross-case analysis indicates that the main characteristics of the business models are that they link sustainable impact directly to commercial success.

Therefore, this research found that sustainable entrepreneurs innovate in business models to overcome hybridity-related tensions to achieve their environmental, financial, and social goals, in order to influence the institutional environment and generate positive social impact, combining three different elements:

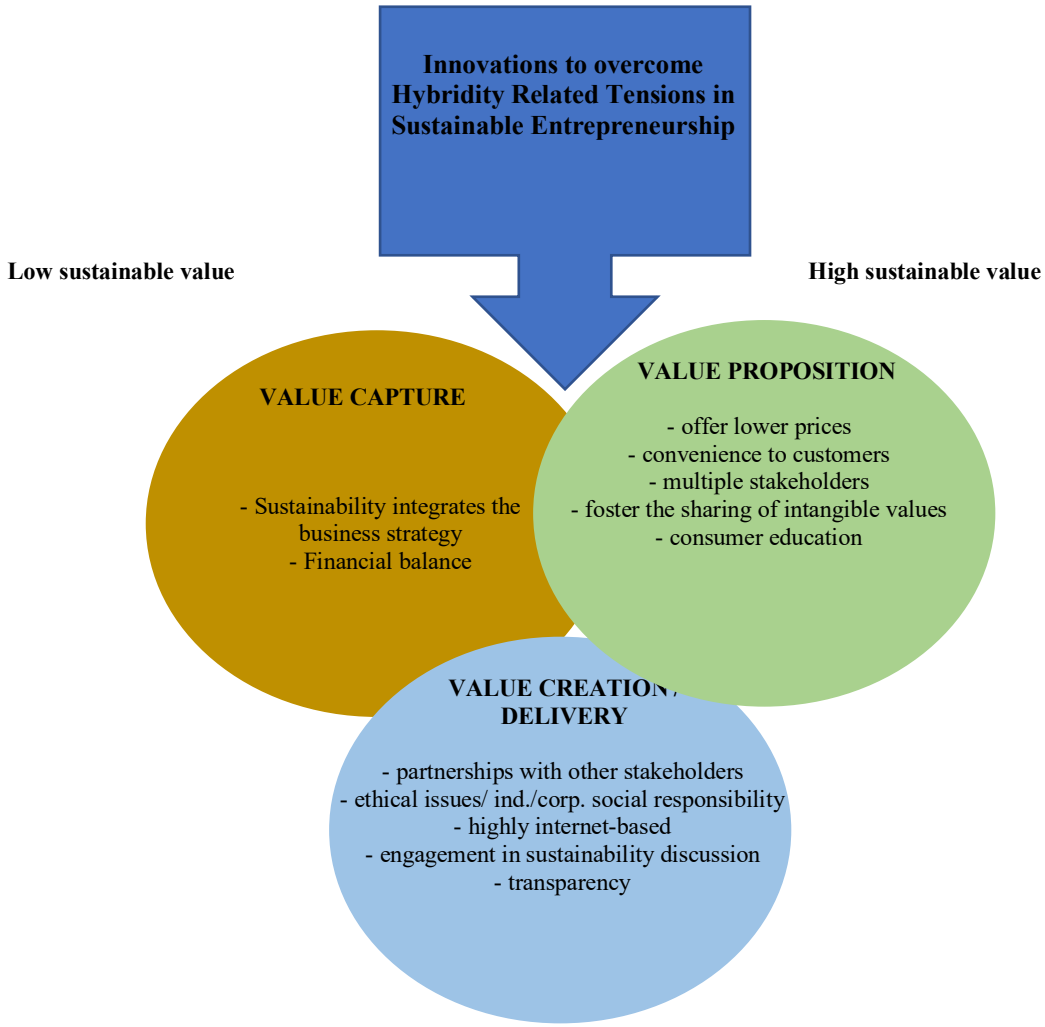
(1) Value proposition: Offer lower prices; convenience to customers; multiple stakeholders; foster the sharing of intangible values; and consumer education.

(2) Value creation/delivery: Partnerships with other stakeholders; ethical issues/ind./corp. social responsibility; highly internet-based; engagement in sustainability discussion; and transparency.

(3) Value capture: Sustainability integrated into the business strategy; and financial balance.

Figure 1 presents a scheme of how sustainable entrepreneurs innovate in business models to overcome hybridity-related tensions to achieve their environmental, financial, and social goals, as found in this study.

Figure 1 - Business models' innovations to overcome hybridity-related tensions in sustainable entrepreneurship



Source: the authors

They move from a business model focusing purely on profit, with low sustainable value, to a new business model with a high sustainable value, in which they can overcome many important hybridity-related tensions. By doing so, they are able to influence their institutional environment through the core elements of their business model. The following innovation mechanisms deserve special mention:

(a) Concerning value proposition, organizations engage multiple stakeholders in developing an emotional stake related to sustainable behaviors. They use the idea of community to promote it, fostering the sharing of intangible values. Associated with these actions, organizations offer more convenience in accessing these products or services, delivering at home or facilitating access by geolocation, prices/costs reduction for customers, and by promoting consumers' education.

(b) Concerning value creation/delivery, the companies promote partnerships with other stakeholders as part of the main business strategy. They run the business while promoting a social movement. One is dependent on the other. In their engagement in the sustainability discussion forums and practical activities, they put together consumers, suppliers, and also other agents outside their vertical supply chain. All companies are highly internet-based in their operations. Social media and transparency are also relevant to their operation.

(c) The main characteristic of value capture is that organizations integrate sustainability into their strategy in a way that just by doing business, they fulfill their social, environmental, and economic missions. Therefore, through innovation in business models, these organizations overcome hybrid-related tensions and achieve financial stability while they positively impact society.

While in the perspective of Osterwalder, Pigneur and Tucci (2005), Osterwalder and Pigneur (2010), and Bocken *et al*. (2014), the results indicate that there is a break in the frontiers related to innovation in the business model, it is also interesting to discuss the findings of this research based on the perspective provided by Gassmann, Frankenberger, and Csik (2014). They analyzed the most revolutionary business model innovations over the past decades to determine systematic patterns in these models. According to their approach, only 55 business models (BMs) are innovative; the others are considered as adaptations, recombinations, or imitations of these models. According to this view, the business models identified in this research would be framed as adaptations/recombinations of other existing models. Just as an example, it was possible to find some elements identified by Gassmann, Frankenberger, and Csik (2014) in the companies analyzed in this research: Aikido, Customer loyalty, E-commerce, Experience Selling—products appealing to the emotions, benefiting from specialized know-how, performance-based contracting—basing fees on results, and trash to cash. However, the same authors note that most of the novelties in business that have an increase in the likelihood of success are also adaptations or creative recombinations of the business models identified by them. These recombinations generate the innovation process indicated by Schumpeter (1961) in relation to product, process, organizational methods, and new market methods. The main

message is that entrepreneurs do not need to "invent the wheel"; they can learn from business models from other industries and make successful adaptations to their context.

Implications and Conclusions

The analyzed organizations are successful cases showing that social, environmental, and economic value can be mutually supportive. They answer calls from Davies and Chambers (2018), Hahn, Spieth and Ince (2018), and Schaltegger, Lüdeke-Freund and Hansen (2016) to better understand the peculiarities of business models concerning how companies successfully operate on commercial markets and achieve their social, ecological, and economic goals. The cases provided also answer the call to provide empirical evidence about what constitutes social business models and how they can be developed (Breuer *et al*., 2018), as well as management mechanisms, potential sustainability solutions, and the challenges faced (Davies & Chambers, 2018; Dentchev *et al*., 2018; Lüdeke-Freund *et al*., 2017; Margiono, Zolin & Chang, 2018).

Dentchev *et al*. (2018) propose that, for innovations to overcome the hybrid tensions, they should start by changing parts of their existing business models or developing completely new ones. In all twelve cases, the companies developed new business models by providing innovations in the core elements of business models. In this sense, the field analysis allowed us to find real cases in which the tensions identified in the literature can be overcome before the start of business operations through innovations in their business models.

Since the innovation mechanisms used by these SEs to overcome hybridity-related tensions are capable of influencing the institutional environment through the core elements of their business model, generating positive social impact, one implication resulting from this research that future studies can explore is: (a) To investigate how each of these innovations identified within value proposition, value creation/delivery, and value capture can be used to positively influence consumers' and other stakeholders' behaviors, and (b) to propose indicators of positive social impact generated by the agency of these entrepreneurs.

It should be noted that these innovations, while allowing a positive balance in favor of the environment and social issues and maintaining the financial stability of the business, also generate new tensions. These tensions do not directly threaten the survival of the business. Another point is that some of these difficulties faced, as is the case with C9 and C11, for example, are not specific tensions related to SBMs because regular businesses face the same types of difficulties; however, they also bring challenges and require attention that research could address.

The contribution to the literature was achieved by filling the gap pointed out by Breuer *et al*. (2018), Davies and Chambers (2018), and Hahn, Spieth and Ince (2018) by identifying business models' innovations in sustainable entrepreneurship, analyzing their characteristics, their mechanisms to overcome hybridity-related tensions, and providing empirical evidence about how business models can be used to create and capture multiple forms of value. Therefore, the findings of this investigation provide theoretical and empirical clarity on the interplay between hybridity and social business models.

Finally, as this is an exploratory investigation, the findings cannot be extrapolated to broader populations. Nonetheless, the 12 in-depth case studies exceed the minimum number of four cases proposed by Eisenhardt (1989). Therefore, one of the suggestions for future studies is to carry out surveys with a larger number of companies in different contexts. These suggestions also address the proposition that it is necessary to consider that sectorial differences partly influence the business model to be used (Gassmann, Frankenberger & Csik, 2014).

Another suggestion is to incorporate the new tensions that emerge from these innovations as categories of analysis in future studies. For example, a future research opportunity about value proposition could be related to how to better understand different customers' profiles in relation to sustainable products and services, as well as other stakeholders outside the vertical supply chain. This would help to promote more focused and efficient awareness campaigns, education, stakeholders' engagement, and communication. Concerning value creation/delivery, the new tensions that emerge and that can be researched relate to how to promote the balance between fair trade and operations management, training and qualification of people, and optimization of logistics systems. About value capture, it would be relevant to understand how to promote business growth in a structured manner, especially how to address scalability issues, i.e., understanding how to promote business model replication in relation to organizational structure issues, costs, and cultural differences.

References

The references used in this paper are at the end of the thesis, in the section "References"

4.3 Paper III

How sustainable entrepreneurs reduce food losses and waste in supply chains under different institutional environments and voids?

Abstract
This research sought to understand how sustainable entrepreneurs (SE) reduce food losses and waste (FLW) in supply chains located in countries with different institutional environments and voids. The first phase investigated 54 stakeholders. The second phase analysed six case studies in Brazil, Canada, Denmark, and Finland. The results show that SE promotes a more aligned and integrated supply chain when improving inter-organisational relationships between suppliers and buyers. SE promotes new offers and demands for food that would otherwise be wasted, thus changing consumer behaviour by way of educational awareness campaigns. Concerning positive social change, eight indicators have been identified: environmental, social, economic, consumer awareness and more positive behaviour, health and well-being, civic engagement, supply chain coordination, and institutional pressure. The differences between institutional and business environments in developing and developed countries might influence SE practices and their position in the supply chain. The study raises four propositions to be tested for further research approaches, public policies and actions to achieve the goals of the 2030 Agenda.

Keywords: coordination; food supply chain; food waste; inter-organisational relationships; sustainable entrepreneurship.

Introduction

Food and Agriculture Organization of the United Nations' latest report on global food security and nutrition (FAO, 2020) suggests that 9.7 percent of the world population (slightly less than 750 million people) was exposed to severe levels of food insecurity in 2019. Dramatically, the latest available global economic outlooks preliminary suggests that the COVID-19 pandemic may add between 83 and 132 million people to the total number of undernourished in the world in next year's depending on the economic growth scenario (losses ranging from 4.9 to 10 percentage points in global GDP growth) (FAO, 2020).

At the same time, it is estimated that 25-33% of all the food produced in the world is either lost or wasted (FAO, 2019; FAO, 2013; Gustavsson *et al*., 2011; Kummu *et al*., 2012). The prospects are that this situation will tend to worsen since the world's population will reach between 9.4 and 10.2 billion by 2050 (United Nations, 2017). This will require at least a 70% increase in food production (FAO, 2009). Food losses and waste has become a major global

issue that threatens sustainable food systems and generates negative impacts on economic, environmental, nutritional, and social terms (Thyberg & Tonjes, 2016).

Food loss and waste (FLW) can be defined as "a decrease in the quantity or quality of food in the food supply chain. Empirically it considers food loss as occurring along the food supply chain from harvest/slaughter/catch up to distribution, but not including the retail level. Food waste, on the other hand, occurs at the retail and consumption levels" (FAO, 2019, p. 14). This paper addresses both situations, and therefore it will adopt both terminologies in the FLW acronym. The causes of FLW are connected across food supply chains, from primary production to final consumption (Canali *et al*. 2017). There is a need to address the business-to-business aspects of how and why major inequalities in food distribution and the excessive levels of food waste that occur remain largely unaddressed. Mena *et al.* (2014) also raise that there is a lack of coordination in inter-organisational relationships that causes FLW. Consequently, research into FLW has become a priority issue for both academics and practitioners.

A new agenda recently pulled together all these efforts in the 2030 Agenda for Sustainable Development, which must be adopted by all UN member countries. The 2030 Agenda addresses areas of crucial importance to humanity and to the planet, such as ensuring sustainable production and consumption patterns. The United Nations Sustainable Development Goal Target 12.3 is: "by 2030, halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses" (UN General Assembly, 2015). Subject to reducing FLW by half, another one billion people could be adequately supplied with food, which is about one-eighth of the world's current population. Reducing FLW, therefore, is one of the most promising measures for improving food security in the coming decades (Kummu *et al.* 2012) and one of the significant goals in current research in the food supply chain management practices (Raak *et al.* 2017).

Many countries are already taking action to reduce FLW from a supply chain perspective, but the challenges ahead remain significant, and efforts involving the most diverse stakeholders in society need to be stepped up (FAO, 2019). The private sector, as the main driver of economic activity and an important source of creativity, innovation and entrepreneurship, should be engaged to achieve greater sustainability (Robinson, 2004) by proposing solutions to address FLW issues.

Empirically it is possible to identify the emergence of entrepreneurs introducing new business models which propose to address the problem of FLW and those combine characteristics of entrepreneurship in the food industry with a strong influence resulting from

the use of information and communication technology. They are defined in this paper as Sustainable Entrepreneurs (SE) since, in addition to profit, they aim to generate environmental and social benefits through their commercial activities. These entrepreneurs set up businesses that are expected to have a positive influence on consumer behaviour as well as an influence on other value chain activities such as retail, distribution and marketing.

Sustainable entrepreneurship is conceptualized as a type of entrepreneurship with an essential requirement: to address economic, social and ecological goals simultaneously - the triple bottom line approach (Cohen, Smith & Mitchell, 2008). It is expected that this will lead to solutions to problems not addressed by either the regular market or the public sector (Yitshaki & Kropp, 2016). According to the perspective provided by Agostini, Bitencourt and Vieira (2020), they address institutional voids, which can be considered as failures, caused mainly by the absence of the state and asymmetry in the market, intensified by society beliefs, rules and culture. Therefore, these ventures are increasingly lauded as catalysts for change in society by researchers, policymakers, practitioners and the media (Margiono, Zolin & Chang, 2018). This study focuses on SE, who use information and communication technology operating to reduce FLW in countries with distinguished institutional environment.

Information and communication technology are creating major opportunities for the food industry (Zhu *et al.* 2018) and are identified as highly relevant for the future sustainable supply chain management. Despite the popularity and importance of business based on technology, there is a lack of research in this area (Holland & Gutiérrez-Leefmans, 2018). As such, business are disruptive with the potential to revolutionise traditional sectors such as food (Moazed & Johnson, 2016) and investigating the relationship between food waste solutions, coordination mechanism and SE can bring valuable contributions to more sustainable food systems.

There is a lack of research into entrepreneurial actions and their potential impacts, especially for understanding how entrepreneurs can shape change for sustainable management (Grob & Benn, 2014), which organizational practices are successful, and the features and experiences that are transferable to contexts with institutional voids (Cheney, Cruz, Peredo, & Nazareno, 2014). There is also a need to better understand how and when these organizations address globally relevant problems and contribute towards systemic change (Dentoni, Bitzer & Schouten, 2018). There is growing academic and practical interest in how market-based organizations can drive positive social change, but management research into these phenomena remains fragmented (Stephan *et al.* 2016). Moreover, as the highest incidence of FLW in developing countries occurs in the initial stages of the supply chain, while in developed

countries it occurs in the later stages (Gustavsson *et al.* 2011), both face problems related to a lack of coordination and consumer behaviour (FAO, 2013; Parfitt *et al.* 2010) due to the existence of different institutional voids. It becomes relevant to empirically check whether SE responds by focusing on activities with the highest loss/waste in their environmental context.

Given the above, this research aims to investigate the following research question: How sustainable entrepreneurs reduce food losses and waste in supply chains located in countries with different institutional environments and voids? The issues raised seek to address the gaps in the literature and practice. One of the strengths of this paper is that it seeks to investigate these issues by analysing multiple case studies from countries with different institutional environments to raise propositions for further research.

Theoretical background

The causes of FLW in medium/high-income countries mainly relate to the lack of coordination between different agents in the supply chain. Bio Intelligence Service (2010), FAO (2013), Gustavsson *et al*. (2011), Kummu *et al.* (2012) and Parfitt *et al.* (2010) provide some examples of the general causes of FLW worldwide: difficulty in predicting the number of buyers/customers; a failure to meet the quality standards set by retailers; rigorous quality standards for the weight, size, shape and appearance of fresh produce; difficulties in anticipating demand, resulting in overstocking; a lack of coordination between retailers, distributors, wholesalers and manufacturers across the supply chain; consumer demands with regard to weight, size, shape and the appearance of food products; food cooked, prepared or served in excessive quantities; impulse buying (buying items they had not intended to); poor pre-purchase planning; and a lack of awareness, among other matters.

Since most of the problems are related to institutional factors and lack of coordination in the supply chain, these are two relevant topics for any discussion that relates to reducing FLW. Both topics are discussed to introduce the role of SE and, along with FLW, constitute the main analysis categories that will be summarized in a table at the end of this section.

Institutions and institutional voids

The Institutional Theory highlighted sociological aspects and introduced variables as value sharing, legitimacy, and isomorphism in organizational studies. Institutionalism stressed the requirements to consider the activities of social structures, people and their group manifestations, the interposition of the relationship between social configurations, and

behaviours of individuals (Dimaggio, 1988). Based on that, institutions are constraints created to structure social, political, and economic interactions. In this analysis, institutions that operate with lower transaction costs generate greater performances. North's economic perspective (1990) bases the understanding of the Institutional Theory, which is a valid instrument to business studies because of its ability to comprise different elements - social, cultural and legal - into one analysis. From this point of view, this theory is suitable for this study since it aims at understanding the interferences, the characteristics, and the elements of an institutional context in the way that companies deal with situations on institutional voids.

Three pillars that structure the institutional environment. First, the regulatory institutional pillar; second, the normative institutional pillar; and third, the cultural-cognitive institutional pillar. The normative institutional pillar covers the principles and values which determine the types of behaviours considered appropriate to social characters' opinion. Firms and persons are assessed by a society based on standards and values. This pillar, therefore, can be represented by local culture, comprising values, norms, and beliefs related to specific people behaviour. Due to its similar characteristics, there is not much clarity in the differentiation between the normative and the cultural-cognitive pillar (Scott, 2001). In the cultural-cognitive pillar, people distinguish what is or is not true, as much as they have the capability to do it or not. In the normative pillar, on the other hand, individuals discern whether they should or should not do something (Eden & Miller, 2004). Being able to boost or discourage certain behaviours, the regulatory institutional pillar involves the rules and regulations established legally or, in some cases, validated by public opinion.

Based on these pillars, from the perception of another theoretical institution stream, neo-institutionalism, organizations are rewarded for their legitimacy and survival capabilities, all based on the consent of the coercive and mimetic institutional pressures. In this circumstance, values, symbolic representations, strategies, and structures originate isomorphism (Dimaggio & Powell, 1983). DiMaggio and Powell (1983), in a seminal study, presented some relevant reasons for isomorphism: coercive (explicit imposition of organizational models, political and legal [regulatory] influences), mimetic (uncertain behaviour that drives businesses to imitate a model considered successful) and normative (influences of a standardized and categorized model of education to business professionals).

Isomorphism is the constraining process that forces one organization to resemble others facing the same environmental pressure (DiMaggio & Powell, 1983). Institutional isomorphic change occurs by three types of mechanisms: coercive, mimetic and normative pressures (DiMaggio & Powell, 1983). Coercive pressures result from dominance through the force and

requests for other participants to join an association, which can arise through government rules and laws or between suppliers and customer actions. Regarding normative pressures, they directly influence business decision-making and are originated from cultural components of where the operating environment standards developed. When it comes to mimetic pressures, these arise from the companies' aspirations to be similar to other successful organizations and environmental legitimacy, mimicking its structures, results, and practices. More than addressing an efficient pursuing behaviour, the Institutional Theory finds regulatory, social and cultural aspects that have effects on the survival and legitimacy of firms (Bruton, Ahlstrom & Li, 2010; DiMaggio & Powell, 1983).

This theory leads to the assessment that for a good functioning of the market, institutions must be effective in normative, cognitive and regulative aspects. North (1990), from an economic perspective, states that economies are determined according to their institutions' performance. The absence of institutions, rules and regulations are harmful gaps for the thriving function of an economy. Likewise, efficient institutions are the ones that can answer for the troubles of measuring and enforcing at the lowest transaction cost (North, 1990).

If one of these structures has not been satisfied, then institutional voids emerge. The expression "institutional voids" has become more popular after a sequence of works of Khanna in the 2000s, in which the authors researched business groups in emerging markets. The seminal study of Khanna and Palepu (2000), in an economic prospection, revealed that organizations can overcome the barriers created by the non-existence of institutions that support the internal market development. Although extremely important to the progress of the theme, Khanna and Palepu (2000) do not provide an explicit conceptualization for institutional voids. Similarly, several other researchers are vague who use institutional voids as a background for studying other subjects, such as emerging markets or business groups (Schrammel, 2013). One definition of the institutional void is caused by Mair and Marti (2009): it is the absence of institutions that support markets in contexts that are already rich in other institutional arrangements. The definition adopted in this research is coined by Agostini, Bitencourt and Vieira (2020): institutional voids are failures, caused mainly by the absence of the state and asymmetry in the market, intensified by society beliefs, rules and culture. They intensify social inequalities because of the absence, weakness or nonfulfillment of the role that is expected of the institutions (Agostini, Bitencourt & Vieira, 2020).

Institutional voids occur where there is a lack of specialized intermediaries that a certain company usually trusts. When this deficiency is materialized, crucial strategic choices are harder to be made, affecting the industry's assessment, positioning, and sustainability (Khanna,

2002). Chakrabarty (2009), also through an economic insight, states that institutional voids consist of the nonexistence of institutions installations, rules, and regulations that are essential for the functioning of an economy. Explaining some of the consequences of this phenomenon, the author indicates that national culture has a stronger influence in institutional voids contexts.

Institutional voids can be found in all kinds of markets. Both developing and developed countries might experience the phenomenon; however, they are more intensely observed in emerging economies. Economic, social, environmental, cultural and regulatory characteristics of these markets facilitate the absence or weakness of productive institutions to the businesses and society itself. Mair, Marti and Ventresca (2012) argue that institutional voids are the absence of institutions that assist markets in circumstances where other substantially institutional compositions exist. Economists point out the inhibition to the well-functioning market and the consequent growth of transaction costs that the institutional voids produce (North, 1990, Khanna & Palepu, 2000).

Sustainable entrepreneurship, as Mair and Marti (2009) propose, analyse the consequences of institutional voids to market participation, social structures, and opportunities for SE. Furthermore, the authors state that, based on these different views, the institutional voids research is detailed in three broad fields: the voids that prevent the functioning of market (economists), the gaps that obstruct the market development (political scientists) and, finally, the disruptions that block the market participation. The supply chain is affected by the institutional environment where they are embedded, and this will be discussed below.

Supply Chain and Coordination Mechanisms

Governance is the term used by Williamson (1985) to characterise the set of institutional arrangements within which the transaction is organized in supply chains. Transaction Costs Economics (TCE) functions help to compare the different co-ordination forms, choosing the most efficient in terms of reducing transaction costs. As there are other definitions of governance such as the GVC approach (Gereffi *et al.*, 2005), it is used the term coordination to characterize inter-organisational relationships in the supply chain.

According to TCE, a formal contract, used as a transactional mechanism, is the main tool used to ensure a transaction, avoiding opportunism. TCE framework is traditionally characterised by a dichotomy between co-ordination through the market (made up of isolated small firms communicating through price signals) and, at the other extreme, vertical integration (exemplified by the large, vertically corporations). Formal mechanisms are described as contracts and written rules to control opportunism and to coordinate expectations and

behaviours of partners (Poppo & Zenger, 2002). Formal mechanisms are theoretically supported by main assumptions from transactions costs economics such as opportunism, bounded rationality and other behavioural incentives to the use of contracts (Williamson, 1985). Between these two extremes, there are several forms that are known as hybrid forms. Supply chain literature has been focusing mostly on interfirm relationships as well as vertical and fragmented chains. It developed looking at the coordination of the hybrid forms (such as long-term relationships, alliances, joint ventures and so on). A collaborative relationship between buyer and supplier can reduce the costs involved in the transaction and become a source of competitive advantage. However, relationships are not purely collaborative or opportunistic, the reason TCE is often used in conjunction with other approaches.

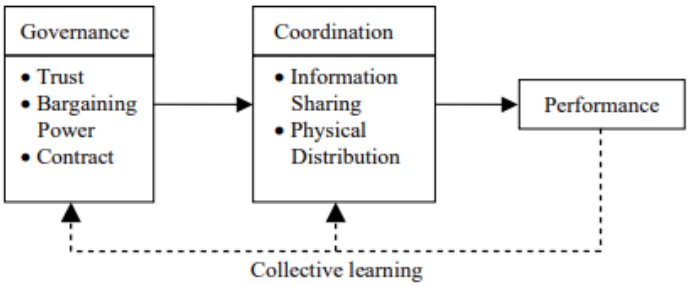
Informal mechanisms are based on approaches such as the Relational View (RV), which can be considered an extension of Resource-Based View (RBV). Under both approaches, companies are considered a set of resources that are crucial for the formulation of strategies. While the RBV focuses on the internal resources of the company in contrast to the RV`s focus on the idiosyncratic relationships between organizations as an important source of competitive advantage (Dyer & Singh, 1998). The value generated by the relationship between the companies cannot be gained individually but are the result of the agents' combined resources. The development of relationships, alliances with suppliers who have or will generate key capabilities are essential in the competitive landscape. The RV may complement the TCE for its possibility of using relational resources such as a trust for value creation and competitive advantage in inter-organizational relations.

It pays attention to the existence of intangible assets and focuses on the roles of social interactions and socially rooted relationships in economic operations, implying long-term contracts based on personal relationships and social norms such as trust and mutual commitment (Cheung, Myers & Mentzer, 2010). Researchers advocate opposing views on the complementary (Dyer, Singh, & Hesterly, 2018; Poppo & Zenger, 2002) or substitutive (Lumineau and Henderson, 2012) nature of formal and informal governance mechanisms. However, it is still how to move from one type to another or which would be more efficient in specific contexts.

Most supply chain coordination studies focus on buyer-supplier (dyadic) relationships, as described by Chen and Paulraj (2004). Empirically, however, size asymmetries and geographical distance might lead to supply agents not communicating with each other. It can lead to coordination problems that expand to the extended supply chain.

Ghosh and Fedorowicz (2008) propose a supply chain coordination and governance framework, which is presented in Figure 1:

Figure 1 - Framework for supply chain coordination



Source: Ghosh & Fedorowicz (2008)

This framework was chosen as it proposes a distinction between both concepts, coordination and governance, but both are complementary. In this sense, this framework starts from the understanding that coordination focuses on both information and material flows, which is reflected in supply chain performance. In order to succeed in their coordination efforts, supply chains need to align common governance mechanisms to manage the flow of the information and materials that support the processes and structure in relationships between organizations. The most relevant enablers that aid inter-organizational coordination and information sharing are trusts, bargaining power and contracts, a mix of formal and informal mechanisms. The outcome of coordination is performance. The outcome of coordination and performance leads to feedback or collective learning in the supply chain (Ghosh & Fedorowicz, 2008). As most literature in supply chain management uses coordination and governance with similar meanings based on Williamson (1985) Transaction Cost Economics (TCE), distinguishing the meanings and exploring the complementarity of both concepts can add to this area of research.

Bargaining power relates to the relative size of the partners, control over resources, control over processes, and the share of the firm in terms of total value added (Ghosh & Fedorowicz, 2008). Timmermans *et al*. (2014) found that depending on market or purchasing power, position and coordination capacity, some agents in the food supply chain may suffer less from food loss and waste and impose the costs of inefficiency on less well-positioned agents. Halloran *et al.* (2014) found that due to their bargaining power, food retailers strongly influence other actors in the food supply chain, which may further affect the generation of food waste, which mostly affects farmers. Devin and Richards (2016) propose access to alternative

markets to increase the bargaining power of growers by giving them more channels by which to distribute their products and, in turn, lower their levels of food waste.

Performance is related to measuring how well an initiative process or system is functioning (Ghosh & Fedorowicz, 2008). Supply chain performance can be measured according to three main groups: resources, output and flexibility. Resources involve inventory levels, personnel requirements, equipment utilization, energy usage and general costs (such as manufacturing cost, distribution costs, inventory, etc.). The output is related to customer responsiveness, product quality and the quantity of final products produced. Flexibility is related to volume, delivery, mix and new product flexibility, such as promoting reductions in the number of lost sales and the ability to respond to and accommodate new products, new markets, or new competitors (Beamon, 1999). It is expected that improving the efficiency and performance of the whole supply chain can significantly reduce FLW (Kaipia, Dukovska-Popovska & Loikkanen, 2013).

Ghosh and Fedorowicz (2008) argue that successful supply chain coordination relies on the existence of good communication-enhancing governance mechanisms that can be linked to performance and process improvements. It is knowledge of the role of governance mechanisms that will enable supply chain agents to realign inter-firm relationships and contribute to supply chain performance.

Positive Social Change

Positive social change can be defined as the process of transforming patterns of thought, behaviour, social relationships, institutions, and social structure to generate beneficial outcomes for individuals, organizations, communities, and/or society (Stephan *et al.* 2016). When analysing impacts as a process, it is possible to assess how different organizational practices affect society at different stages of development. In this sense, four broad domains can be identified: (a) environment: e.g. increased energy conservation, recycling and responsible consumption; (b) social and economic inclusion: e.g. empowered marginalized groups and improved educational attainment; (c) health and well-being: e.g. increased preventive and reduced health risk behaviours; and (d) civic engagement: e.g. increased community volunteering, charity and responsible investing (Stephan *et al.* 2016).

This change may include the reconceptualization of ideas and practices and their renaming and redefinition (Baker, Storbacka & Brodie, 2019). Value shaping is another output of positive social change. It is the process whereby value is created and shared within the system

of activities that constitutes the marketspace (Fry, Previte & Brennan, 2017). Communicating with and educating people, motivating incentives and exerting normative or coercive pressure may result in individuals engaging in more positive behaviour. The reasons for this behaviour may range from the construction of new meanings or knowledge, financial rewards and image recognition, social and/or normative pressures (Stephan *et al.* 2016).

Regarding social and/or normative pressures, the Institutional Theory provides some insights into how positive social change can occur. Institutional Theory considers different types of pressure (economic, social and political) and the effects of these pressures on management practices and/or human behaviour (Zeng *et al.* 2017). According to DiMaggio and Powell (1983) coercive, mimetic and normative pressures ca be identified. Coercive pressure stems mainly from political influence. It is the result of pressure from institutions, laws, public policies programmes and regulations. Mimetic pressure corresponds to the process whereby organizations imitate the practices, services and processes of their competitors – either well-established or first movers. Normative pressure is associated with professional practices within sectors. It may relate to formal education. It may also relate, however, to the growth and elaboration of professional networks (DiMaggio & Powell, 1983). Institutional beliefs, rules and roles become encoded in the structure of educational or professional organizations (Scott, 1987). With regard to institutional pressures, exposure to sustainable management, coupled with corporate social responsibility and ethical cultural orientations, have a positive influence on the level of normative isomorphic pressure for undertaking sustainability initiatives or practices (Horak, Arya, & Ismail, 2018). The media may exert important pressure since it can shape the norms of acceptable and legitimized practices (Bansal, 2005)

Financial outputs can also relate to positive social change. Typically, this refers to cash resources but may also include stocks, bonds, receivables, promissory notes, and other assets that can be converted into cash. Individuals or community members can be empowered by commercial ventures that generate revenues and transfer some of that pecuniary wealth to the community in which they are active. It can also concentrate on creating economic self-sufficiency (Lumpkin, Bacq & Pidduck, 2018).

Training, providing social learning, encouragement, and personal experiences may also result in individuals engaging in more positive behaviours as they develop new skills and confidence. Establishing empowering opportunity structures, such as influence possibilities, enabling access to resources, building social capital, and rearranging the environment, may result in better access to the information, resources, and environmental restructuring decisions that facilitate change (Stephan *et al.* 2016). Reducing poverty and increasing social justice are

also relevant outputs for positive social change (Biggs, 2008) that can be analysed. Raising awareness also leads to positive social change.

In this study, the role of SE is reported on FLW reduction, prevention and filling institutional voids as an improvement in supply chain performance to result in an intangible outcome, such as positive change. The participation of SE might influence a change of practices and increase awareness from other supply chain' members and consumers. At some level literature recognizes the relevance of stakeholders that are able to induce positive change on both the consumer and supplier side. Specifically, when analysing previous literature on food waste reduction, some of the actions that can be taken by retailers require significant changes in the food supply chain. As a result, these actions can reduce food waste in suppliers, in logistical procedures and with consumers, offer transparency, empower consumers and provide social benefits, like a healthier diet (Young et al, 2016). Actions at the retail level can also lead to positive changes in behaviours relating to food waste at home, such as planning meals, making lists, buying the right amounts and helping people use what they buy (Quested et al. 2013).

The role of SE in food supply chains, which are just as capable as supermarkets of bringing about positive social change, should also be investigated if there is the aim to halve FLW by 2030 since as many stakeholders as possible need to be involved in these efforts. Digital technologies have nowadays a significant impact on how new business ventures are imagined and created. The arising technology paradigm is leveraging the potential of collaboration and collective intelligence to design and launch more robust and sustainable entrepreneurial initiatives (Gianluca et al. 2020).

As Kouwenhoven, Reddy Nalla and Lossonczy von Losoncz (2012) suggest, inefficiencies in food supply chains can be eliminated by creating sustainable businesses aimed at reducing FLW. To do so, it is necessary to understand how different countries with different institutional voids are affecting FLW and how these entrepreneurs can help address them. Therefore, the purpose of this study is to investigate how SE reduce FLW in the supply chain within different institutional environments and voids.

Methods

The case study was the research method chosen for the investigation. This method is indicated in situations when "how" or "why" questions are asked, when the researcher has little or no control over behavioural events, and when the focus of the study is a contemporary

phenomenon. Multiple-case studies were used, in which the same case study covers multiple cases, along with a single set of “cross-case” conclusions (Yin, 2017). The choice of the case study method is justified by the possibility of raising propositions by empirical data collected through field observation (Seuring, 2008). This kind of research aims to provide new insights for theory elaboration according to Ketokivi and Choi (2014), who propose that this process can involve the combination of different theories/concepts. Theory elaboration uses an analysis of theory and context simultaneously through abduction as scientific reasoning. This research was carried out in two phases, based on primary data collection, through observation visits and interviews, as well as on secondary data.

Data Collection

The first phase investigated stakeholders that are usually part of a vertical supply chain, such as producers, processing and distribution facilities, retailers and restaurants, as well as other stakeholders in the food sector, such as public agencies, cooperatives, trade unions, NGOs, food entrepreneurs and food banks. The objective of this first phase was to understand the difficulties related to coordination mechanisms that are faced in food supply chains with regard to FLW.

Phase 1 was carried out in a single country, Brazil. This choice was made because it is one of the largest food producers in the world. While it is responsible for the mass scale production and export of commodities such as coffee, soybeans, and beef, representing 22% of its GDP in 2015, it also faces significant challenges in its internal food distribution mechanisms. Managing fresh food supply in large cities like Sao Paulo (the largest financial and economic centre in the country and South America) is no easy task. It involves aspects related to large distances, perishability and supply chain coordination. When the result is unsatisfactory, prices can rise, and food availability may be compromised.

The data collection process followed the case study protocol proposed by Yin (2017) in relation to case selection criteria, the approach to organizations, preparing for data collection, conducting interviews and observation. A pilot study was prepared, with data collection tools being analysed by fellow researchers. After validation of the data collection instrument, observation visits were made to all of these stakeholders. Even in the context of "other stakeholders", the observation was very useful for data collection. For example, in the case of CEAGESP (São Paulo General Depot & Warehouse Company), it was possible to observe empirically the operation and the supply chain transactions of Latin America’s largest wholesaler of fruit and vegetables.

A total of 54 interviews were carried out between August 2017 and September 2018. The used questionnaire relates to the production and commercial processes, the causes of FLW related to these processes, the relationships with the main clients in terms of collaboration, and formal and informal coordination mechanisms - elements presented in Figure 1. For example, Appendix-1 (Interview Guide - Phase 1) presents the interview guide used with food producers. Each stakeholder had a questionnaire adapted to fit its particular position in the chain or the food sector, but in general, the questions followed the same line of reasoning. The definition of the interviewed professionals was determined according to the position occupied. The same criterion was applied for each different group of stakeholders: in the case of producers, main producers were interviewed, i.e., the owners of the farms; at processing and distribution, retailers, and in NGOs the general managers were chosen; in restaurants and food entrepreneurs, owners were interviewed; and at public agencies, cooperatives, trade unions, and food banks the interviews were carried out with Operations Managers.

Table 1 summarizes the data collection process during Phase 1:

Table 1 – Stakeholders interviewed and visited in Phase 1

Vertical Supply Chain Stakeholders			
Stakeholders	Interviews	Position	Observation on site
Producers	15	Horticultural producers	Yes
Processing and distribution	03	General managers	Yes
Retailers	03	General managers	Yes
Restaurants	06	Owners	Yes
Other Stakeholders			
Stakeholders	Interviews		
Public agencies	10	Operations managers	Yes
Cooperatives	08	Operations managers	Yes
Trade unions	01	Operations managers	Yes
NGOs	04	General managers	Yes
Food entrepreneurs	02	Owners	Yes
Food Banks	02	Operations managers	Yes
Total	**54**		

Source: the authors

In order to expand this analysis to include experiences from developed countries, the second phase was based on primary and secondary data collection from six case studies into sustainable entrepreneurs in four different countries (Brazil, Canada, Denmark, and Finland). The choice of countries was based on the OECD Social Expenditure Database of 2019 (OECD, 2019), which was developed to serve the growing need for indicators of social policy. Denmark

and Finland invest more than a quarter of their GDP in public social support and occupy leading positions in the ranking. Canada also invests a significant amount but does not appear in the top positions. Brazil is not in the ranking. The sample sought to incorporate different country characteristics in relation to their investment in social expenditure, which includes many of the issues addressed by the UN Sustainable Development Goals related to sustainability. It analysed many worldwide and Brazilian databases on entrepreneurship, technology and clean technology businesses, social and sustainable entrepreneurship, and the circular economy, as well as websites and news related to these issues. Examples of these are The Food Waste Innovator Database, produced by ReFED (2018), Nordic/Baltic Tech Start-up Databases and Maps - Silicon Vikings (2019), the Global FoodTech Map (2019), and the FOODTECH Movement (2018). After extensive searches on the internet and in entrepreneur databases the authors of this study identified two different business models as being predominant: developing countries focus more on entrepreneurship that links consumers to the initial stages of the supply chain; and developed countries focus more on entrepreneurship that links the retail trade to consumers. Although the first model is found in developed countries, it is not predominant. One of the reasons may be related to the climatic, cultural and economic characteristics of the countries investigated, but the study did not focus on analysing the reasons that led to this difference.

The first objective of this phase was to understand if SE overcomes difficulties related to coordination mechanisms found in the first phase of the study and, if so, to investigate how they have been overcome in countries with different institutional environments and voids. The second objective of this phase was to understand the possible positive social changes SE generate throughout the supply chain, consumers and society.

The data collection process in this phase also followed the case study protocol proposed by Yin (2017) and the pilot study, which was analysed by fellow researchers. Businesses were visited and interviews were conducted with each entrepreneur between September 2017 and June 2019. Each entrepreneur was asked 25 questions. The questionnaire that was applied was the same in terms of relationships with the main clients, i.e., formal and informal governance mechanisms. Questions about the commercial process and the FLW related to these processes were the same as in the previous phase. Questions were also included that related to the origin of the business, its operational process, its impact (positive social change) and the mechanisms used to produce this impact. The questionnaire is presented in Appendix-2 (interview guide – phase 2 – entrepreneurs).

Secondary data were also collected from scientific papers (P), news (N), and websites (W). The analysis of social media posts included any post or "story" (a temporary post available for 24 hours) made by the entrepreneur, consumers or individuals in general that contained the name of the company. Instagram was the social network analysed. Finally, some consumers were interviewed in two cases (C1 and C2). The questionnaire is presented in Appendix 3 (interview guide – phase 2 – consumers). None of the entrepreneurs allowed access to a customer database, so information about any potential customers who could be interviewed was obtained through social media posts. Each consumer was asked ten questions about their interaction with the product/service/company and if this interaction had a positive and/or negative impact on new knowledge or on behaviour.

Table 2 summarizes the data collection process during Phase 2:

Table 2 – Data collection Phase 2

Case	Country	Description	Obs. on site	Interview length	Secondary Data	Social media posts	Interview with consumers
C1	Finland	Sustainable Entrepreneurship promoting digital business to connect sellers with food surplus with consumers, resulting in cheaper food.	Yes	1h02min	3 P + 7 N + 5 W	3473	21
C2	Denmark	Sustainable Entrepreneurship promoting digital business to connect sellers with food surplus with consumers, resulting in cheaper food.	Yes	1h8min	2 P + 14 N + 5 W	4167	18
C3	Brazil	Sustainable Entrepreneurship promoting digital business that sells monthly food boxes by subscription to consumers at a lower price. These products would be discarded by producers for being non-compliant with standards, or because there is no market for them.	Yes	2h47min	1 P + 10 N + 3 W	1434	0
C4	Brazil	Sustainable Entrepreneurship promoting digital business that sells monthly food boxes by subscription to consumers at a lower price. These products would be discarded by producers for being non-compliant with standards, or because there is no market for them.	Yes	47 min	2 N + 4 W	630	0
C5	Brazil	Marketplace for the delivery of fruit, including fruit that is non-compliant with standards and surplus food from one producer. They focus on consumers or companies seeking convenience by receiving food at home/workplace.	Yes	1h48min	6 N + 3 W	1017	0
C6	Canada	Sustainable Entrepreneurship promoting digital business to connect sellers with food surplus with consumers, resulting in cheaper food.	Yes	23 min	5 N + 2 W	590	0

Source: the authors

Data Analysis

All interviews were taped, transcribed, and analysed along with the field notes and photographs taken during the visits. The data taken from social media posts and secondary data were individually and personally analysed, while the information derived from images or texts was catalogued virtually. All the collected data were analysed by way of content analysis, with the support of NVivo 11 software.

Table 3 shows the analysis categories:

Table 3 – Categories of analysis, elements and supporting literature

Category	Elements	Literature
Food LW	Causes Impacts	Bio Intelligence Service (2010), Canali *et al*. (2017), FAO (2019), FAO (2013), Gustavsson *et al*. (2011), Kummu *et al*. (2012), Parfitt *et al*. (2010), Quested *et al*. (2013), Thyberg and Tonjes (2016).
Institutions and Institutional Voids	Regulatory institutional pillar Normative institutional pillar Cultural-cognitive institutional pillar	Bruton, Ahlstrom and Li (2010), Chakrabarty (2009), Dimaggio (1988), Dimaggio and Powell (1983), Eden and Miller (2004), Horak, Arya and Ismail (2018), Khanna (2002), Khanna and Palepu (2000), Mair and Marti (2009). Mair, Marti and Ventresca (2012), North (1990), Scott (2001), Schrammel (2013), Zeng *et al*. 2017
Coordination Mechanisms	Governance (trust, bargaining power, contract) Coordination (information sharing, physical distribution) Performance (resource, output and flexibility)	Beamon (1999), Devin and Richards (2016), Dukovska-Popovska and Loikkanen (2013), Ghosh and Fedorowicz (2008), Giannakis *et al*. (2012), Gulati and Singh (1998), Halloran *et al*. (2014), Lumineau and Henderson (2012), Pilbeam *et al*. (2012), Timmermans *et al*. (2014)
Positive Social Change	Environmental aspects Social and economic inclusion Health and well-being Civic engagement Reconceptualization of ideas and practices Institutional pressures	Baker, Storbacka and Brodie (2019), Bansal (2005), Biggs (2008), DiMaggio and Powell (1983), Fry, Previte and Brennan (2017), Horak, Arya and Ismail (2018), Kouwenhoven, Reddy Nalla and Lossonczy von Losoncz (2012), Lumpkin, Bacq and Pidduck (2018), Scott (987), Stephan *et al*. (2016), Zeng *et al*. (2017)

Source: the authors

Findings

The results are presented according to the phases of the research. Phase-1 identifies the three main coordination problems that have an impact on FLW. These three different coordination problems were mainly identified as a pattern in data collection and analysis within the different groups of stakeholders. Phase-2 presents the results on how SE overcomes

difficulties related to the coordination mechanisms found in the first phase of the study under different institutional environments and voids and the associated positive social changes generated.

Coordination Problems related to FLW

Phase-1 identified that many producers and retailers face commercial problems in relation to products having a nonstandard appearance, whether due to their shape or size. These products are rejected by final consumers. It is a chain reaction since it leads to retailers also rejecting these products from producers. One of the interviewed retailers explained that: "FLW is a very important issue in the food chain that's related to consumer awareness. It has an impact on fruit and vegetables, but also on meat, and some of the cold cuts and dairy products too. The appearance of the product counts a lot at the time of selling. People buy on by appearance and not because of nutritional quality."

According to the representative interviewed from CEAGESP (São Paulo General Depot & Warehouse Company), Latin America's largest wholesaler of fruit and vegetables, quality standards are the main issue impacting FLW throughout the whole supply chain. Once product has been rejected by retailers, it is often returned to producers and ends up being disposed of. A relevant governance problem relates to the reduced bargaining power of producers compared to all other agents in the supply chain. In most cases, the costs of FLW are borne by the producers alone. For this reason, farmers often throw away non-standard produce after the harvest, although it has the same nutritional value as produce that fits the standard defined by the market as being ideal.

This problem affects both large and small producers, regardless of whether there is a lot of mechanisation or little mechanisation. In such cases, food waste varies according to the producer, the region in which this producer markets its products, the product, and the time of year. Producers that participated in this study are unable to quantify the problem, but it is estimated that it affects up to 20% of the production. They report that it is a common problem they face and that it has a significant impact on the amount of food thrown away. The vast majority of producers believed that FLW is a problem inherent in the food selling process and cannot be reduced. During the observation visits, it was possible to observe more than 200 boxes of potatoes in just one of the producers being rejected by retailers because they did not meet their appearance standards. The producer did not know what to do with this product and explained that it would probably be discarded.

A second problem identified, and one that affects mainly small producers relates to the lack of marketing channels. These producers usually have manual and low-volume production and sell their food to supply chain intermediaries, food street fairs, distribution centres, chefs, or even direct to consumers. They have no planning activities for their production process, nor are they connected with other links in the supply chain for estimating demand. As a consequence, they generate surplus amounts of products in addition to there being a large concentration of the same product in the same region, which ends up being thrown away.

A third problem was identified as affecting restaurants. They always have food waste at the end of the day since it is impossible for them to estimate and produce food according to the exact demand of the consumers. One of the interviewees explains that "this is a very delicate issue for us. We need to have food available for consumers, and the use of the food that is leftover at the end of the day is almost zero." This food cannot be donated because of food safety and/or regulatory reasons and it ends up being thrown away. As a result of this disposal of food, there is a loss of financial resources and invested labour.

The food supply chain coordination problems found in Brazil help to shed light on the specific problems that may also be faced in other developing countries. As Handayati, Simatupang and Perdana (2015) suggest, research into coordination-related issues in an agricultural supply chain is in the early stages of development. Despite this, the literature has more data available for developed countries, which seems to have similar causes, as indicated in studies by Gustavsson et al. (2011). For example, one of the problems faced by developed countries with regard to coordination includes farmer-buyer sales agreements resulting in quantities of farm crops being wasted, as is the case with quality standards, when food items are rejected because their shape or appearance is not perfect (Gustavsson et al., 2011). In the context of the European Union, the following issues were also identified: costs or risks being unfairly shifted from one party to the other; the use of quality assessment for rejecting produce; and a failure to draw up or share accurate demand forecasts with producers, potentially resulting in overproduction and waste (REFRESH, 2020). Based on this, it is possible to understand that many of the coordination problems in the food supply chain related to FLW are common to contexts found in both developed and developing countries.

How sustainable entrepreneurs overcome difficulties related to coordination mechanisms

The results of Phase-2 indicated that SE adopts different business models for overcoming difficulties related to coordination mechanisms according to the supply chain and business environment where they operate under different institutional-environments and voids.

The cases in a developing country provide solutions for the initial stages of the supply chain, specifically linking final consumers with the processing industry and/or producers that have no market demand for their produce because of a lack of planning or because their produce would be rejected due to its appearance in terms of shape or size. The focus of these businesses is only on selling this type of produce. They act as intermediaries between farmers/processing industry and consumers, offering a signature delivery service of food boxes. The business is organized like a purchasing club. Consumers pay less than they would if they bought through traditional channels, but they cannot choose the items of produce they receive in their box. Whenever the stakeholders that supply these entrepreneurs identify produce that might lead to FLW, they try to send it to retailers and deliver it directly because they know there will be demand for it. Such cases result in a short supply chain.

This type of business arises through the dissemination of communication and information technologies in small businesses, since all transactions take place online, from customer's association, coordination of the food products to be received and delivered, and any forms of communication. For the interviewed owners, in addition, to be the basis for the existence of the business, technology is essential for agile management of their processes and operation at minimal costs.

Coordination is through the use of informal mechanisms, comprising mainly self-regulation and informal social ties. The command structure focuses on SE with less standardisation, high levels of communication, a large exchange of information, and strong social ties in terms of trust and commitment. There is no formal specification on the appearance of the produce, just an informal agreement. The only produce not accepted is any that is visibly damaged, as it would spoil before reaching the customer. An appearance that is not in line with market standards, however, is accepted, or even required by these businesses, since promoting such produce as part of their marketing strategy.

There is also a simultaneous process of transfer of knowledge to the producer since most of them believe that FLW is a problem inherent in the production process. The entrepreneur in C3 says that many producers need to be trained in this sense to know that there are alternatives for reducing FLW:

> After we started showing this project [to producers] they said: “That’s it. That’s the produce we consume here at home, it’s just as good as the rest”. That’s when they began to see... but there’s still that thinking of “but it’s always been like that. The supermarkets never bought, no one has ever bought this produce from us. Will it really sell? Isn’t this bad publicity for my business?” There are even times we try and talk to them. “There’s going to be a report, someone wants to talk to you”. And they say “but am I going to talk about the bad produce from here?” But it’s not a problem, it’s normal produce, and when they started to see that they have a market for it, the relationship really began to improve. But at the beginning everyone was asking: “but are you going to be able to sell it anyway? Do we have a market for it?”

The institutional and business environment and voids is an external driver that needs to be considered in relation to consumers. The discussion about FLW is just beginning to emerge in the developing country analysed. There is a strong void both in the regulatory, normative and cultural-cognitive institutional pillar. There is no regulation about it or governmental actions, and the country generally has a weak institutional environment with respect to FLW. According to the entrepreneurs that were interviewed, consumers do not know what FLW means and what its negative impact is. They also lack awareness of non-standard food products. For these entrepreneurs to enter the market strict criteria of education was needed, which comprised investment in efforts to produce a “social movement” by way of social and traditional media campaigns, street fairs, food-related events and giving talks at universities, companies and in other events. In most cases, however, they are only able to reach consumers with higher education and higher incomes, according to C3, C4 and C5 interviews. Lower-income consumers started to buy from these businesses because of the lower price but gave up because of the appearance of the food they received.

The cases in the developed countries are analysed to provide solutions for the latter stages of the supply chain. They are start-ups/apps that connect customers in real-time to tech-savvy retailers, such as bakeries, coffee shops and fast-food outlets to sell surplus food at a discount, instead of throwing it out at the end of the day or when its shelf life expires. This type of business also arises through the dissemination of communication and information technologies, especially apps on smartphones. Here also all transactions take place online, in the App, from customer's association to the management of associated retailers. Even consumer education occurs through this channel.

Coordination occurs using more formal mechanisms and digitally via the app, with contracts and high levels of communication and exchanges of information. There is a command structure that focuses on retailers since they decide on the produce to be sold, when and at what price. Entrepreneurs receive a commission on each sale. The business models of these entrepreneurs lead to bigger supply chains, since there is an extra stakeholder involved.

The institutional environment regarding regulatory, normative and cultural-cognitive institutional pillar is more developed. Since entrepreneurs in these countries report that when they started the business, there was already a lot of discussion about FLW in the institutional context both at the government level and in the civil society level. And that consumers already had some knowledge of the problem, which made entering the market easier. They made use of publicity on social media and the internet but did not need to maintain a strong "social movement" that was parallel to the business. According to interviewees C1, C2 and C6, the income and education profiles of their customers are diverse since all entrepreneurs reported that university students and low-income people (as in the case of some elderly people), also constitute their customer database. One of the interviewed consumers commented about income profile: "[…] and also because I spend less money on these groceries and feel better about reducing my expenses. That's because I'm a student who hasn't got a lot of money right now, but I try and eat a healthy and varied diet."

Aspects that are common to both cases are that entrepreneurs (located in both developing and developed countries) are opening new markets for produce/services that otherwise would be wasted by reducing prices for consumers and increasing income for producers or retailers (depending on the situation). They are also focusing on heavily communicating information about food waste and promoting consumer awareness, both of which initiatives are essential to the success of the business.

Table-4, located at the end of this section, shows a comparison between the types of SE from developed and developing countries that were found in this study.

Positive social change generated by sustainable entrepreneurs addressing food losses and waste reduction

The results of Phase-2 found the following indicators of positive social change generated by SE who address FLW reduction:

(a) Environment: the biggest indicator of a positive environmental impact is the reduction in FLW, which has a direct impact on greenhouse gas emissions, energy conservation, the use of natural resources and water. All the cases that were investigated propose business models that generate profit by reducing FLW. Quantifying how much food they save is part of their business development process. For example, C3 calculates that it has so far avoided 1000 tons of fruit and vegetables being wasted over a period of 36 months. This saved food comes mainly from the production and processing stages of the supply chain. Onn the other hand, C2

calculates that 32.4million meals were saved over the same period of 36 months. C1 saves an average of 109,500 meal portions every month. This retrieved food comes mainly from the latter stages of the food supply chain, so the environmental impact on retrieved resources is overwhelming. These results are widely disseminated in the traditional written media and on television.

(b) Social: labour-saving is a direct impact resulting from the reduction in FLW. When food is produced and thrown away, labour is wasted by either the producers, distributors or retailers. The jobs created by these entrepreneurs is also a relevant social indicator since they help contribute to the social inclusion of local communities by educating producers about the alternatives that exist for reducing FLW, entrepreneurs in developing countries are building local capacity.

(c) Economic: job creation is reflected in a higher income for the people working directly or indirectly for this business; there is increased income in developing countries for producers, which in the case of smaller farmers is important since it helps avoid rural exodus; in the case of developed countries, economic strengthening is expected to have a positive impact, especially on small retailers, such as bakeries and coffee shops, thereby stimulating the local economy; and in both developing and developed countries, lower prices for consumers are important, as this improves access to food.

(d) Consumer awareness and more positive behaviour: this impact appeared in all the interviews with consumers. They report a reconceptualization of their ideas because of the news they read or see in the traditional media about the actions of these entrepreneurs, the lectures these entrepreneurs give in schools, universities, companies and at a wide variety of events, public relations, email marketing, posts in the social media, and from friends who share their consumption experiences verbally, or on social networks about these ventures. Greater awareness of food waste is reflected in the more positive habits of food-shopping, food preparation and storage. As an example,

> I think C2 is raising awareness about how big the food waste problem is. In addition to using the app to buy food I think I now also try to waste less in my daily life since I've been using the app. Since I run a restaurant and I used to work in a supermarket. I've always wanted to find a way of reducing waste.

> Due to the influence of C3, I started to discover alarming data about good condition food being wasted. I'd no idea it was such a high percentage, as well as the amount of water used in production. Over time, I started using everything I have at home before it was thrown away. I also choose food that would hardly ever be chosen at fairs, and produce that looks different. They influenced me a lot by posting content every week and suggesting recipes that use 'imperfect' produce.

But it is also possible that, to some extent, this benefit of greater awareness and more conscious consumption extends to society in general. In addition to the interviews, this appears quite clearly in the analysis of social media posts where consumers share their positive consumption experiences, praise entrepreneurs and report how they have changed their consumption habits. As well as providing news about these businesses, these posts reach massive amount of audience.

(e) Health and well-being: the increase in the consumption of fruits and vegetables and is commonly reported, by consumers in interviews and on social media posts. This is particularly prevalent in developing countries, where entrepreneurs focus on delivering boxes containing fruit and vegetables. Consumers in these countries report that as they cannot choose the food they receive in the box. So they end up receiving produce they would not normally buy. In addition to boxes of food, recipes are usually provided, which consumers start reproducing at home. Starting to cook and eat at home, especially at night, is something else that is commonly reported. Although increased convenience did not appear in the interviews with consumers, this would seem to be another benefit. In developing countries, consumers receive boxes of food at home, while in developed countries, they are able to access the nearest place for collecting food boxes using geolocation.

(f) Civic engagement: social media posts indicate that the customers of these sustainable entrepreneurs become engaged in the FLW reduction "cause" or "movement"since they post messages about the FLW problem. Specifically, in the case of developing countries, they post information to raise awareness of the nutritional value of non-standard appearance food, and in the case of developed countries, they share photos of meals made from produce that would otherwise be discarded and how they understand that this has a positive impact on society.

(g) Supply chain coordination: as explained above, these SE can overcome difficulties related to coordination mechanisms in the food supply chain and reduce the food waste of different stakeholders. They work as a "bridge" or "matchmaker" between suppliers and buyers, thus avoiding food wasted in the supply chain. However, as explained by entrepreneur C6, supply chain coordination is also a challenge for these businesses: "One of the major challenges we faced was balancing supply and demand. So because our app is for pickup, only the restaurants had to be conveniently located near our users, and so we had to make sure that we built up a density of restaurants on the supply side and marketed them very locally so it would be convenient for users to go to a restaurant".

(h) Institutional pressures: finally, these entrepreneurs exert a certain level of normative and mimetic pressure. In the case of the developing country, it was possible to verify that after

several media reports about the success of one of these entrepreneurs, a large retailer located in the same city as C3 started to adopt a day for selling non-standard produce and arranging educational activities with its consumers, which is a mimetic isomorphism. Although these entrepreneurs discuss the need for solutions for FLW, it identified no direct relationship between their actions and the passing of FLW laws or regulations. It also identified a degree of mimetic isomorphism in cases since some of the organizations that were investigated imitate the practices, services and processes of their competitors they perceive as being successful. For example, C4 was inspired by C3. C3, in turn, was quite inspired by similar businesses abroad. C6 also took a lot of inspiration from C1 and C2 when building its business model.

One of the mechanisms by which these entrepreneurs seek to promote consumer awareness to lead to more positive behaviour is through normative institutional pressures. That could be observed in all cases. For their business to succeed in the market, these entrepreneurs shape consumer values related to food consumption, i.e., they provide new meanings and new knowledge that help in a new conceptualization of consumer ideas and practices. In addition to the financial reward, normative pressure uses social media campaigns and talks in companies and schools with the message that those who support companies that aim to reduce FLW have a "better" reputation than other individuals, in the sense that they are more sustainable and adapted to the new standards that are expected in today's society. They promote the idea that they do not sell a product or a service but rather a lifestyle. They are strongly supported by the media, which publicize their activities at no cost, and they are also able to exert these same institutional pressures.

The main similarities and differences when comparing external drivers, such as institutional and business environment related to how SE can reduce FLW and generate positive social change, is summarized in Table 4. These external drivers might influence the role and position of SE in the supply chain.

Table 4 - Main similarities and differences found on how SE can reduce FLW and generate positive social change

	Weak institutions and business environment with respect to FLW - developing country	**Strong institutions and business environment with respect to FLW - developed country**
Mechanisms	Informal mechanisms - trust, commitment, influencing knowledge-sharing routines and collaboration among the actors (Resource-based view or Relational view).	Formal mechanisms - high level of communication and large exchange of information, structured ties and communication systems (Transaction Cost Economics)
Bargaining power	Transfer bargaining power to sustainable entrepreneurs with fewer rules regarding the standard of produce	Maintain bargaining power with retailers

Supply chain extension	Shorten the size of the supply chain (products do not go to retailers)	Increase the size of the supply chain
Consumers	In relation to consumers, access to the market is more restricted; the niche which is willing to buy these products is also restricted to people with more income and a higher level of education.	The institutional environment is also reflected in an easy entry into the market, and in the expansion of the profile of consumers who buy from these entrepreneurs, thus also expanding the reach for people with lower incomes.
Communication about food waste	Both communicate strongly (essential for the success of the business)	Both communicate strongly (essential for the success of the business)
Performance	Both are responsible for improvements in the final amount of produce available (output) and improvements in the ability to respond to and accommodate new products and / or new markets (flexibility)	Both are responsible for improvements in the final amount of produce available (output) and improvements in the ability to respond to and accommodate new products and / or new markets (flexibility)
Performance related to positive social change	Both produce almost the same impact in terms of economic outcomes, consumer awareness, more positive behaviour, civic engagement, and institutional pressures (specifically mimetic isomorphism and normative pressures). However, there are some differences between different institutional contexts related to performance in some elements of the environmental, social, health and well-being indicators, supply chain coordination, and institutional pressures (specifically normative isomorphism). Specifically, in terms of social impact, entrepreneurs in developing countries provide more education for producers. This is necessary since it is a discussion that is not part of the sector. This is also reflected in health and well-being indicators, since these solutions lead to an increase in the consumption of fruit and vegetables and a more diversified diet, since these consumers cannot choose the food products they receive, but have greater incentives and more education in the form of recipes.	Both produce almost the same impact in terms of economic outcomes, consumer awareness, more positive behaviour, civic engagement, and institutional pressures (specifically mimetic isomorphism and normative pressures). However, there are some differences between different institutional contexts related to performance in some elements of the environmental, social, health and well-being indicators, supply chain coordination, and institutional pressures (specifically normative isomorphism). These entrepreneurs have a greater environmental and social impact (labour saving) since they provide solutions for latter stages of the supply chain.

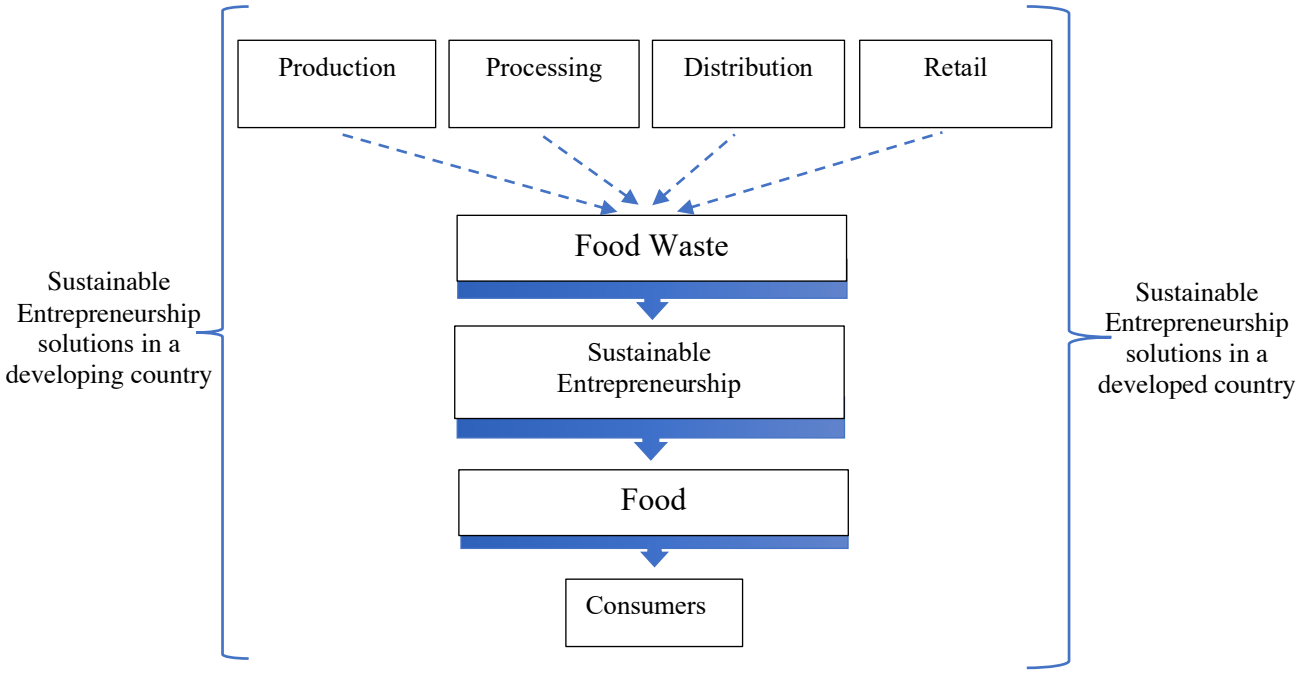
Source: the authors

Discussion

Findings from the cross-case analysis indicate that sustainable entrepreneurship is suitable for addressing sustainability. SE contribute to FLW solutions by improving supply chain coordination through inter-organisational relationships. Figure 2 presents a summarized

schema showing a relationship between the coordination problems of FLW that were identified in Phase 1 and how SE might overcome these difficulties in Phase 2:

Figure 2 – Sustainable entrepreneurship as a promoter of coordination mechanisms for reducing FLW in developing and developed countries



Source: the authors

Figure-2 is a symbolic vertical representation of a generic food supply chain. Each value chain activity can be associated with the causes of food loss or waste. The results from Phase 2 suggest that SEs promote new offers, encourage demand for food that would otherwise be wasted, and change consumer behaviour through awareness-raising campaigns. In doing so, they act as a kind of "bridge" or "matchmaker" between suppliers and buyers, thereby avoiding food being wasted in the supply chain.

These inter-organisational relationships are only possible because they make information and communication technology the basis on which the business operates. Technology is the basis through which SE reduces food waste from supply chains, creates revenue from waste, manages the business operation, find new customers, educates consumers, enhances brand image and promotes positive social change. This means that the eight indicators of positive social change identified (environment, social, economic, consumer awareness and

more positive behaviour, health and well-being, civic engagement, supply chain coordination, and institutional pressures) exist as a result of information and communication technology applied to a business that has a bias towards sustainability.

The cases in a developing country provide solutions for the initial stages of the supply chain, specifically linking final consumers with the processing industry and/or producers, using informal mechanisms as coordination, comprising mainly self-regulation and informal social ties. As they operate in a weak institutional environment with respect to FLW, facing strong voids in their institutional environment regarding regulatory, normative and cultural-cognitive institutional pillar for these entrepreneurs to enter the market, a very strong process of education was needed. The cases in the developed countries provide solutions for the latter stages of the supply chain, connecting customers to retailers, such as bakeries, coffee shops and fast-food outlets, using more formal mechanisms, with contracts and high levels of communication and exchanges of information. As they operate in a stronger institutional environment regarding regulatory, normative and cultural-cognitive institutional pillar with respect to FLW, entering the market was easier for these SE.

A relevant finding of this study is that the business models are in line with the reports in the literature, as indicated by Gustavsson *et al*. (2011), that the highest incidence of FLW in developing countries is in the initial stages of the supply chain, while in developed countries it is in the latter stages of the supply chain, although both face problems resulting from consumer behaviour and a lack of coordination, as suggested by Parfitt *et al.* (2010) and FAO (2013). The results of this research relate to the fact that all countries have different institutional voids according to their level of development.

It is important to emphasize that institutional and business environments and voids might influence the chosen differences in the solutions adopted by entrepreneurs to issues of coordination. SE in developing countries relies on informal governance mechanisms for coordination. As Giannakis *et al.* (2012) state, they rely more on more informal ties, trust, commitment, a large exchange of information and collaboration from inter-organisational relationships using a resource-based or relational view. Institutional voids related to the absence of regulations regarding FLW issues call for the need for greater collaboration, as there are no formal control mechanisms available for the supply chain stakeholders. Bargaining power moves from retailers to SE, but in a different relationship that focuses more on collaboration and acceptance of the product and less on rules regarding produce standards; in addition to opening a new market for non-standard produce, this is the main reason leading to a reduction in FLW. This is in line with the proposal of Devin and Richards (2016) to encourage alternative

markets, including increasing the bargaining power of producers. They also work on knowledge transfer to a producer that deals with alternatives for reducing waste generation. Consumer access to the market is more restricted, and the niche that is willing to buy this product is restricted to people with a better income and higher level of education.

Regarding performance (Ghosh & Fedorowicz, 2008), the main benefit concerns the increase in the final quantity of produce available (output, according to the classification of Beamon, 1999) and improvements in the ability to respond to and accommodate new products and/or new markets (flexibility, according to the classification of Beamon, 1999). Ghosh and Fedorowicz (2008) argue that successful supply chain coordination relies on the existence of good communication-enhancing governance mechanisms that can be linked to performance and process improvements. Knowledge of the role of governance mechanisms will enable supply chain agents to: realign, interfirm relationships, and contribute to supply chain performance. By improving the efficiency and performance of the whole supply chain, these entrepreneurs significantly reduce FLW (as suggested by Kaipia, Dukovska-Popovska & Loikkanen, 2013).

With respect to FLW in developed countries, SE relies on formal governance mechanisms, with high levels of communication and a large exchange of information. As Gulati and Singh (1998) and Pilbeam *et al.* (2012) suggests that by adopting such a structure more formalized sustainable entrepreneurship will rely on structured ties and communication systems that are aligned with transaction cost economics. It makes more sense in an environment with less institutional voids, especially concerning the regulatory pillar. Bargaining power continues with retailers, as was previously found by Halloran *et al.* (2014). There is no need to educate retailers regarding alternatives for reducing waste generation since this is a discussion that is institutionalized in their context, even if there are still actions that can be done. The institutional environment is also reflected in easier entry to the market and expansion of the profile of consumers who buy from these entrepreneurs, thus expanding the reach to include people with low incomes also. This improvement in communication enhancement, as Ghosh and Fedorowicz (2008) proposes, may be related to process and performance improvements. With regard to performance, there is no difference in terms of the results of FLW when compared to weaker institutional contexts, since both results in improvements in the final amount of produce available (output) and improvements in the ability to respond to and accommodate new products and/or new markets (flexibility), which is reflected in a reduction in FLW.

The findings of the cross-case analysis also indicate that SE generates positive social change when they address food waste reduction, reflecting a scenario in which entrepreneurship is changing the rules of the food sector by disrupting existing practices and creating new

institutions, standards, beliefs and behaviours for addressing the problems of food waste. The following positive change indicators were identified: (a) environmental, (b) social, (c) economic, (d) consumer awareness and more positive behaviour, (e) health and well-being, (f) civic engagement, (g) supply chain coordination, and (h) institutional pressure. Some of these indicators were previously suggested in the literature (Stephan *et al*., 2016; Baker, Storbacka and Brodie, 2019; Fry, Previte & Brennan, 2017; Biggs, 2008).

There are, however, differences between developing and developed countries in their performance in some elements related to environmental, social, health and well-being indicators, supply chain coordination, and institutional pressures (specifically mimetic isomorphism and normative pressures) as they face different institutional environments and voids. Supply chain coordination was explained at the beginning of the discussion. Since the predominant FLW reduction business model in developed countries focuses on the relationship between retailers and consumers, the food that would be lost and is recovered generate greater positive environmental and social impacts in terms of greenhouse gas emissions, energy conservation, the use of natural resources and water, and labour savings because the food has already undergone a series of processes and/or stages. Specifically, in terms of social impact, entrepreneurs in developing countries provide more education for producers; this is necessary since it is a matter that is not normally considered an integral part of the industry in a developing country context. This is also reflected in health and well-being indicators, since the solutions that are suggested lead to an increase in the consumption of fruit and vegetables and a more varied diet; these consumers are unable to choose the food they receive, but at the same time they are encouraged to eat more healthily, and they acquire new knowledge when they receive the weekly recipes.

Finally, the positive social change performance of these entrepreneurs is practically the same in terms of impacts related to economic indicators, consumer awareness, positive behaviour, civic engagement, and institutional pressures. Although it was identified that there are no coercive institutional pressures from SE, it is expected that, insofar as it is possible to expand mimetic and normative pressures, accompanied by a change in behaviour on the part of some consumers and supply chains, suppliers, industry and society will pressure the government into introducing laws and regulations aimed at reducing FLW. It is also expected that if these practices are adopted by major players, the supply chain itself will initiate some form of coercive pressure on suppliers and other stakeholders.

Conclusions

This research aimed to investigate how sustainable entrepreneurs can reduce food loss and waste in supply chains located in countries with different institutional environments and voids. As a theoretical contribution, this study illustrates the interface between SE that addresses the food waste problem and suggests solutions, and supply chain coordination, performance improvement and the indicators of positive social change.

The results show that institutional environment might influence the role of SE and how it positions between suppliers and buyers, thereby avoiding food being lost and wasted along the supply chain. SE promotes new offers and demands for food that would be wasted and it changes consumer behaviour by way of educational awareness-raising campaigns. Based on these exploratory case study, it is possible to raise proposition to be tested in further research. The first proposition is that SE in developing countries relies on informal governance mechanisms for improve supply chain coordination due to regulatory institutional voids (focusing on informal ties, trust, commitment, a great exchange of information and collaboration between actors using a resource-based view or a relational view). The second proposition is that SE in developed countries relies on formal governance mechanisms for its coordination, with large levels of communication and a great exchange of information (focusing on structured ties and communication systems), which are aligned with Transaction Cost Economics. These differences in use of governance mechanisms and supply chain coordination should be largely studied in further research. It also brings implications for policymakers to consider while providing incentives for entrepreneurial actions. About positive social change, eight indicators have been identified and described: environmental, social, economic, consumer awareness and more positive behaviour, health and well-being, civic engagement, supply chain coordination, and institutional pressures.

In addition, raises proposition 3, on developed countries, in which there are lower institutional voids in relation to discussions about FLW is well developed, the solutions connect retailers and consumers. Proposition 4 says that, on developing countries in which the institutional environment in relation to discussions of FLW is weaker, the solutions connect producers and consumers. This is reflected in the business model used for supply chain coordination activities, specifically the coordination mechanisms, bargaining power, supply chain size, consumers profile, and performance related to positive social change. These are two suggestions for future studies. The private sector is important in both contexts, but in developing countries the producer has less access to technology, education, etc. so the function of SE is to

promote social inclusion. In developed countries, SE has a role that focuses more on the marketplace/distribution to reduce environmental impact.

These findings need to be taken into account by academics when carrying out research and/or when proposing theoretical models and frameworks related to supply chain coordination, and the performance and indicators of positive social change. Likewise, these results are relevant to discussions about national and industrial strategies aimed at reducing FLW to achieve the goals of Agenda 2030. The level of development of the country and its institutional and business environment differences need to be considered when defining the actions. Single solutions should not be proposed, since they may have a positive result in a more developed context and different outcome in other institutional environments. There are only ten years left to reach the goals of Agenda 2030, implying that if developing countries are to achieve the goals within this deadline, specific institutional voids will have to be fulfilled.

Finally, this research considers data from 54 different stakeholders from supply chains located in Brazil, and six case studies about sustainable entrepreneurs in four different countries. Future studies could explore different stakeholders and more contexts and conduct longitudinal studies, for example, by returning to these entrepreneurs in a few years.

References

The references used in this paper are at the end of the thesis, in the section "References"

Appendix-I

INTERVIEW GUIDE – PHASE 1 (example of the interview guide with producers)

INTERVIEW GUIDE – PRODUCERS

1) Can you give your name and say how long you have been performing this function as a producer?
2) Can you describe how the entire production process operation works?
3) What percentage of what is produced is lost on the rural property? What are the related causes?
4) In what process and with which produce in the production process do you have the greatest number of produce losses?
5) How is the produce stored before distribution?
6) What percentage of food is lost during storage? What are the main causes? Which are the main products wasted?

7) Can you describe how the distribution/transportation process works?
8) Who is responsible for the transport?
9) To whom is the produce distributed? Can you describe how your relationship with this stakeholder works?
10) Is your relationship with this stakeholder formalized in any way, or is it informal? Can you explain in detail how the communication, negotiation, decision, and conflict resolution process works between you?
11) What percentage of food loss do you have during the distribution/transportation process? What are the main causes? Which are the main products wasted?
12) Can you describe how the commercial operation works?
13) To whom are the products sold? Can you describe how your relationship with this stakeholder works?
14) Is your relationship with this stakeholder formalized in any way, or is it informal? Can you explain in detail how the communication, negotiation, decision, and conflict resolution process works between you?
15) What percentage of food loss do you have during the commercial process? What are the main causes? Which are the main products wasted?
16) Which other stakeholders in the supply chain do you have a relationship with the addition to those you have already mentioned? How does this relationship work?
17) Which other stakeholders in the food sector do you have relationship with, in addition to the ones you have already mentioned? How does this relationship work?
18) Do you have any training or qualifications in food loss and waste? Can you comment on this?

Appendix-II
INTERVIEW GUIDE – PHASE 2

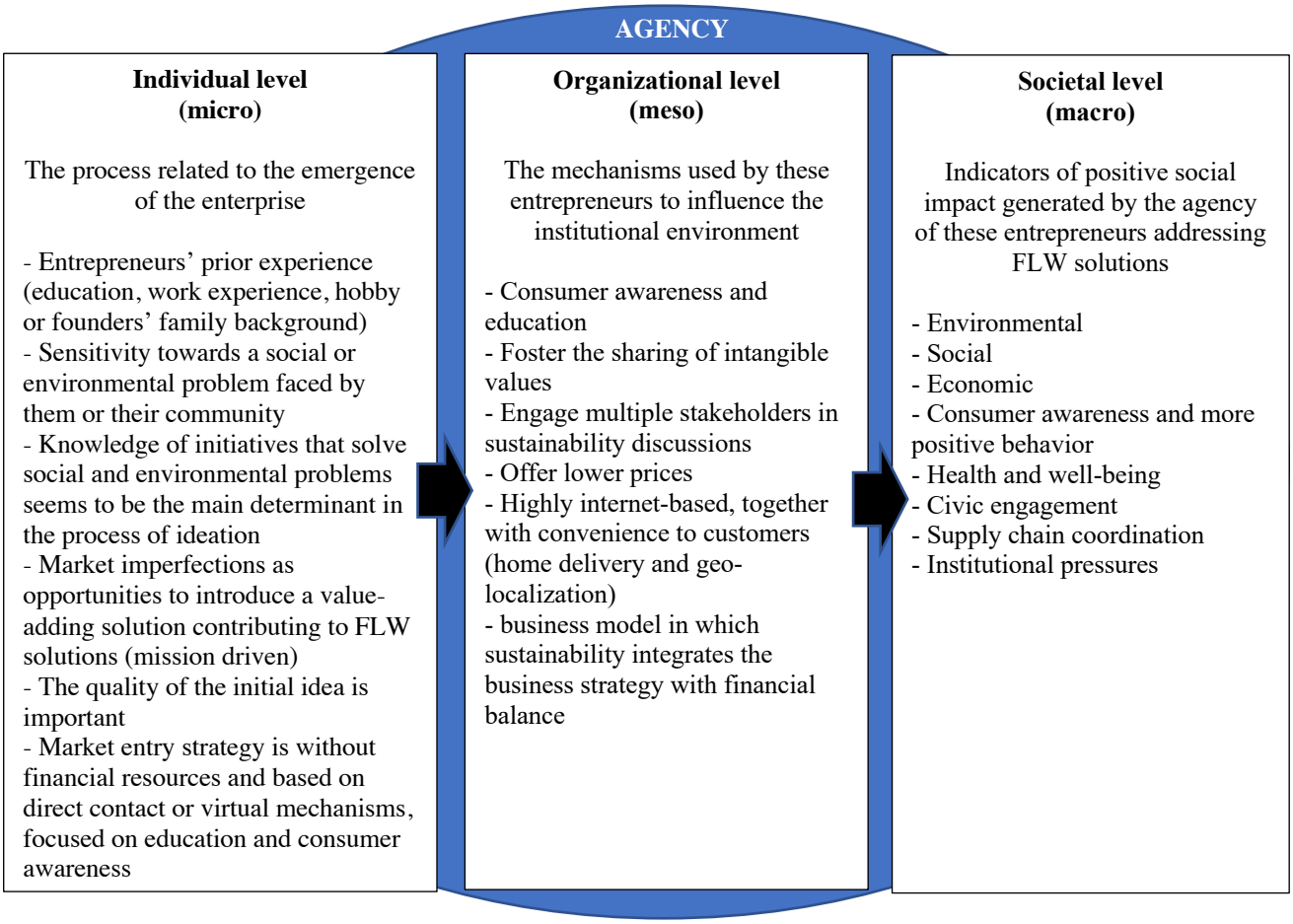
Interview Guide – Entrepreneurs: It is available in the Appendix-II of this thesis

Interview Guide – Consumers: It is available in the Appendix-II of this thesis

5 THESIS CONTRIBUTION

The emergence of entrepreneurs dealing with FLW solutions has no explanation by Institutional Theory. This thesis is aimed to provided answers to how first mover´s entrepreneurs exercise their agency and produce a positive social impact in the context of FLW solutions. In other words, it aimed to provide knowledge related to the questions about how the embedded agency is possible. Based on the results of the papers, the proposed thesis is that sustainable entrepreneurs exercise their agency and produce positive social impact through some process in three levels, which are interconnected and subsequent: (1) individual level (micro): entrepreneurial process - the process related to the emergence of the enterprise; (2) organizational level (meso): the mechanisms used by these entrepreneurs to influence the institutional environment; (3) societal level (macro): indicators of positive social impact generated by the agency of these entrepreneurs addressing FLW solutions. Each of these three levels of the agency is affected by the institutional environment. The following framework exposed in Figure 3 presents the process in these three levels in the agency in institutional entrepreneurship.

Figure 3 – Process in three levels in the agency in institutional entrepreneurship



Source: the author

At the individual (micro) level a series of mechanisms that occur prior to the process of the entrepreneur generating the idea of the business is relevant to help answering the embedded agency paradox. The entrepreneurial process helps to shed light on the motivations and the whole agency process. The entrepreneurial process in sustainable entrepreneurship is analyzed and better detailed in the paper-I. It begins with the idea generation and finishes when it is possible to measure the impact of the business in terms of the environmental, financial and social aspects of sustainability. It provides an answer to both SO-1 (to identify and describe the operation of first movers' entrepreneurs addressing FLW solutions) and SO-2 (to understand the process related to the emergence of the enterprise)

Regarding idea generation, the motivation to start the ventures, in all the analysed cases, related to prior experiences, such as education, work experience, hobby or founders' family background. Prior experience seems to relate to this sensitivity towards a social or environmental problem faced by community. While facing the problem related to sustainability, generally, it was identified that entrepreneurs' knowledge of initiatives that propose to solve social and environmental problems was the main determinant in the process of ideation, added to experiences and skills in the area, as well as in education or professional life. Previous experience in entrepreneurship was less relevant.

The entrepreneurs perceived market imperfections as opportunities to promote sustainable entrepreneurship to introduce a value-adding solution into the marketplace contributing to ecological and/or social problems. These market imperfections are the Institutional voids. In this process, all the entrepreneurs showed to be driven by goal setting and consider opportunities that have sufficient potential for positive social/environmental impact more attractive. In this sense, their motivations are mission driven, designed to improve society's well-being. The findings indicate that their motivations combine sustainability-oriented goals with a profit goal.

The quality of the initial idea is important, once little changes occur in business configuration through the entire entrepreneurial process. Almost none of these entrepreneurs neither tested the product/service previously nor made a business plan. Even so, these entrepreneurs do not always seem to realize the potential impact of the business on society during the generation of the idea. This is most evident in the analysis of the integration of the sustainability tripod at the moment when entrepreneurs are in the opportunity development phase: despite the entrepreneur focus is on only one dimension (usually environmental) and at the end of the entrepreneur's process, it possible to identify the production of social impact,

even if it was not the initial focus. The social dimension occurs as an impact of the idea and the business operation.

Their market entry strategy is based on direct contact or virtual mechanisms to reach possible customers, very focused on education and consumer awareness, based on informal disclosure to customers (in most cases "word of mouth"), partnerships with other stakeholders, and the strong use of social media. Most of the cases started without financial resources, using the entrepreneur´s knowledge, virtual services, social networks, and residential structure. It is only in the expansion phase, in which they seek more scalability, and financial resources.

According to the findings in the paper I, entrepreneurs are facing opportunities to exerts their agency and to develop win-win business models through sustainable entrepreneurship. For it, they need to be aware of problems in their communities, visit places and different stakeholders and talk to people. When identifying problems, it is first interesting to check whether solutions to similar problems have not been developed elsewhere and to try to adapt to the local context before trying to develop something new. The results found identified that no significant financial resources are required to promote the venture launch. More robust investments are only required for expansion if the developed solution has the potential to scale in the market. In this sense, scalability is a word that needs to be in entrepreneurs mind when developing sustainable solutions.

Besides, a finding of the thesis refers to the role that isomorphism plays in the agency of these entrepreneurs. Especially, in relation to copy or being inspired by other entrepreneurs that have been successful in other contexts (either international or national).

Based on the findings of paper I and thinking about triggers in the institutional environment that can take the individual's agency to act as institutional entrepreneurs, universities, government, entities and other stakeholders interested in sustainable development could make efforts to promote: a) Educational experiences in the sustainability area more aligned with the problems of local communities, i.e., promote normative isomorphism; b) Stronger dissemination of successful business cases related to sustainability in other countries and contexts, i.e., promote mimetic isomorphism; c) More integration between universities and businesses so that not only students could be impacted, but also people in these businesses could have access to new solutions and ideas. One of the possibilities is through project-based learning or practice-based learning, which also includes reflection processes. Perhaps these mechanisms can give individuals the necessary experience and enable them to better recognize entrepreneurial solutions to social or environmental problems that they may come across in their trajectories.

At the organizational (meso) level, there are the mechanisms used by institutional entrepreneurs to influence the institutional environment. It is analyzed and better detailed in paper II. This is a subsequent process and dependent on the outputs of the micro-level. It also varies according to the institutional context. It provides the answer to both SO 1 (to identify and describe the operation of first movers' entrepreneurs addressing FLW solutions) and SO 3 (to analyze the mechanisms used by these entrepreneurs to influence the institutional environment).

The promotion of the business of these entrepreneurs depends strongly on a change in the behaviour of the consumer so that they adhere to the new type of consumption. They run the business while promoting a social movement. One is dependent on the other. At this instant they exercise their agency seeking to influence people, and in general, the institutional environment in which they are inserted. For this to happen, they need to develop, along with the business, a very incisive consumer awareness and education for the FLW problem. They use various mechanisms, from campaigns on social media, regular media activities, schools, private companies and even face-to-face meetings in which they disseminate knowledge, face to face with consumers. They disseminate information about economic, social, and environmental problems related to FLW, as well as how consumers can help to solve some of these problems by using the company´s services and related actions in their daily life activities. The message they send is that they are part of a social movement that aims to reduce FLW, with the intention of providing something that goes beyond the consumption relationship. They foster the sharing of intangible values beyond their products/services and promote the idea of ethical consumption, and a community around food. They constantly reinforce the discourse that these consumers help to reduce the environmental impact of their consumption and support local businesses, avoid rural exodus, help to promote fairer commercialization, etc. This is constantly reinforced by these companies as if these consumers had an ethos that set them apart from others.

Moreover, they strongly encourage consumers to share photos and videos of the company's products and services on social media to "raise awareness" of these consumers' network of relationships. It is possible to identify because the companies repost these communications. It is a form of advertising for the business, but it also disseminates knowledge about FLW and encourages people to adopt a different pattern of behavior inspired by friends.

They also make partnerships with other stakeholders in their value chain as part of the main business strategy. Ethical issues and individual/corporate social responsibility are the

main strategies used to promote it. They participate in sustainability events, discussions forums, visiting companies, schools, partnering with other entrepreneurs in their supply chain. In their engagement in sustainability discussion forums and practical activities, they put together consumers, suppliers, and also other agents outside their vertical supply chain. In many of these activities, the focus is not on FLW but sustainability in general. It is for the first time, the people learned about FLW issues. FLW is not on the agenda, but sustainability is, and a halfway point. When they make such actions, they promote some normative institutional pressure.

Institutional entrepreneurs investigated also provide evidence that not every sustainable business model will necessarily have a higher priced product/service. It is possible to offer products/services that allow consumers to save money, comparing to traditional market channels. A reduced price can play an important role in influencing the consumption of this type of products and services.

However, at the same time that they need to change the institutional environment. It seems that they make use of trends that are in force in this same environment since they are highly internet-based and also meet a general tendency to offer convenience to customers concerning home delivery and geo-localization. So, they are at the same time influencing and being influenced by this institutional environment.

As these entrepreneurs have a business model in which sustainability integrates the business strategy, they have financial balance, and they also exert influence in new entrepreneurial activities and/or competitors.

At the societal (macro) level, there is the positive social change generated by the agency of these entrepreneurs. It is analysed and better detailed in paper III. It provides answer to both SO 1 (to identify and describe the operation of first movers' entrepreneurs addressing FLW solutions) and SO 4 (to propose indicators of positive social impact generated by the agency of these entrepreneurs addressing FLW solutions).

SEs promote new offers, encourage demand for food that would otherwise be wasted, and change consumer behaviour through awareness-raising campaigns. In doing so, they act as a kind of "bridge" or "matchmaker" between suppliers and buyers, thereby avoiding food being wasted in the supply chain.

In relation to their operation, there are differences between institutional contexts from developing and developed countries, not the target of a deep investigation in this thesis, which seems to influence SE practices, its position in the supply chain and some degree the intensity of their impacts. The cases in a developing country provide solutions for the initial stages of the supply chain, specifically linking final consumers with the processing industry and/or

producers, using informal mechanisms as coordination, comprising mainly self-regulation and informal social ties. As they operate in a weak institutional environment with respect to FLW, facing strong voids in their institutional environment regarding regulatory, normative and cultural-cognitive institutional pillar, for these entrepreneurs to enter the market a very strong process of education was needed, a need that always accompanies the operation of the business. There was also a need to educate other supply chain members, i.e., mainly producers. In other hand, the cases in the developed countries provide solutions for the latter stages of the supply chain, connecting customers to retailers, such as bakeries, coffee shops and fast-food outlets, using more formal mechanisms, with contracts and high levels of communication and exchanges of information. As they operate in a stronger institutional environment regarding regulatory, normative and cultural-cognitive institutional pillar with respect to FLW, entering and the operation in the market is easier for these SE in terms of legitimation. There is no need to strong educate retailers regarding alternatives for reducing waste generation, since this is a discussion that is institutionalized in their context, even if there are still actions that are done.

With regard to performance, there is no difference in terms of the results of FLW when compared to weaker institutional contexts, since both results in improvements in the final amount of produce available (output) and improvements in the ability to respond to and accommodate new products and/or new markets (flexibility), which is reflected in a reduction in FLW.

SE generate positive social change when they address FLW reduction, reflecting a scenario in which entrepreneurship is changing the rules of the food sector by disrupting existing practices and creating new institutions, standards, beliefs and behaviours for addressing the problems of FLW. Eight indicators have been identified with regard to positive social change: environmental, social, economic, consumer awareness and more positive behaviour, health and well-being, civic engagement, supply chain coordination, and institutional pressure.

The environmental impact is directly related to FLW reduction/prevention, i.e., more food available. It has a direct impact on greenhouse gas emissions, energy conservation, the use of natural resources and water. It directly contributes to achieving the SDG 12 proposed by the UN General Assembly (2015), halves per capita global FLW along supply chains, and indirectly, according to the proposition of FAO (2009), it also contributes to SDGs 2, 13, 14, and 15. Since the predominant FLW reduction business model in developed countries focuses on the relationship between retailers and consumers, the food that would be lost and is recovered generate greater positive environmental and social impacts in terms of greenhouse gas

emissions, energy conservation, the use of natural resources and water, and labour savings because the food has already undergone a series of processes and/or stages.

The second indicator of positive social change generated by these entrepreneurs is social. It is related to labour-saving from producers, distributors and/or retailers as a direct impact of FLW reduction. The jobs created by these entrepreneurs is also a relevant social indicator since they help contribute to the social inclusion of local communities; by educating producers about the alternatives that exist for reducing FLW, entrepreneurs in developing countries are building local capacity.

Economic is the third indicator. These entrepreneurs provide job creation, but there is also increased income in developing countries for producers, which in the case of smaller farmers is important since it helps avoid rural exodus; in the case of developed countries, economic strengthening is expected to have a positive impact, especially on small retailers, such as bakeries and coffee shops, thereby stimulating the local economy; and in both developing and developed countries, lower prices for consumers are important as it promotes access to food.

The fourth indicator is consumer awareness and more positive behaviour. There is a reconceptualization of consumer´s ideas and beliefs as a result of the news they read or see in the traditional media about the actions of these entrepreneurs, the lectures these entrepreneurs give in schools, universities, companies and at a wide variety of events, public relations, email marketing, posts in the social media, and from friends who share their consumption experiences verbally, or on social networks about these ventures. Greater awareness of food waste issues is reflected in the more positive habits of food shopping, food preparation and storage. But it is also possible that, to some extent, this benefit of greater awareness and more conscious consumption extends to society in general, that is reached by news in the media and by friends' posts on social networks, even if they are not customers of these businesses.

Health and well-being are the next indicators. It is related to the increase in the consumption of fruit and vegetables and a more varied diet by consumers, as well as starting to cook and eat at home. This is particularly prevalent in developing countries, where entrepreneurs focus on delivering boxes containing fruit and vegetables. The sixth indicator is civic engagement since customers of these sustainable entrepreneurs become engaged in the FLW reduction “cause” or “movement”.

Supply chain coordination: SE is able to overcome difficulties related to coordination mechanisms in the food supply chain and reduce the FLW of different stakeholders. They work as a “bridge” or “matchmaker” between suppliers and buyers, thus avoiding FLW through the

supply chain. SE promote a more aligned and integrated supply chain when improving inter-organisational relationships between suppliers and buyers. SE promote new offers and demands for food that would otherwise be wasted, thus changing consumer behaviour by way of educational awareness campaigns.

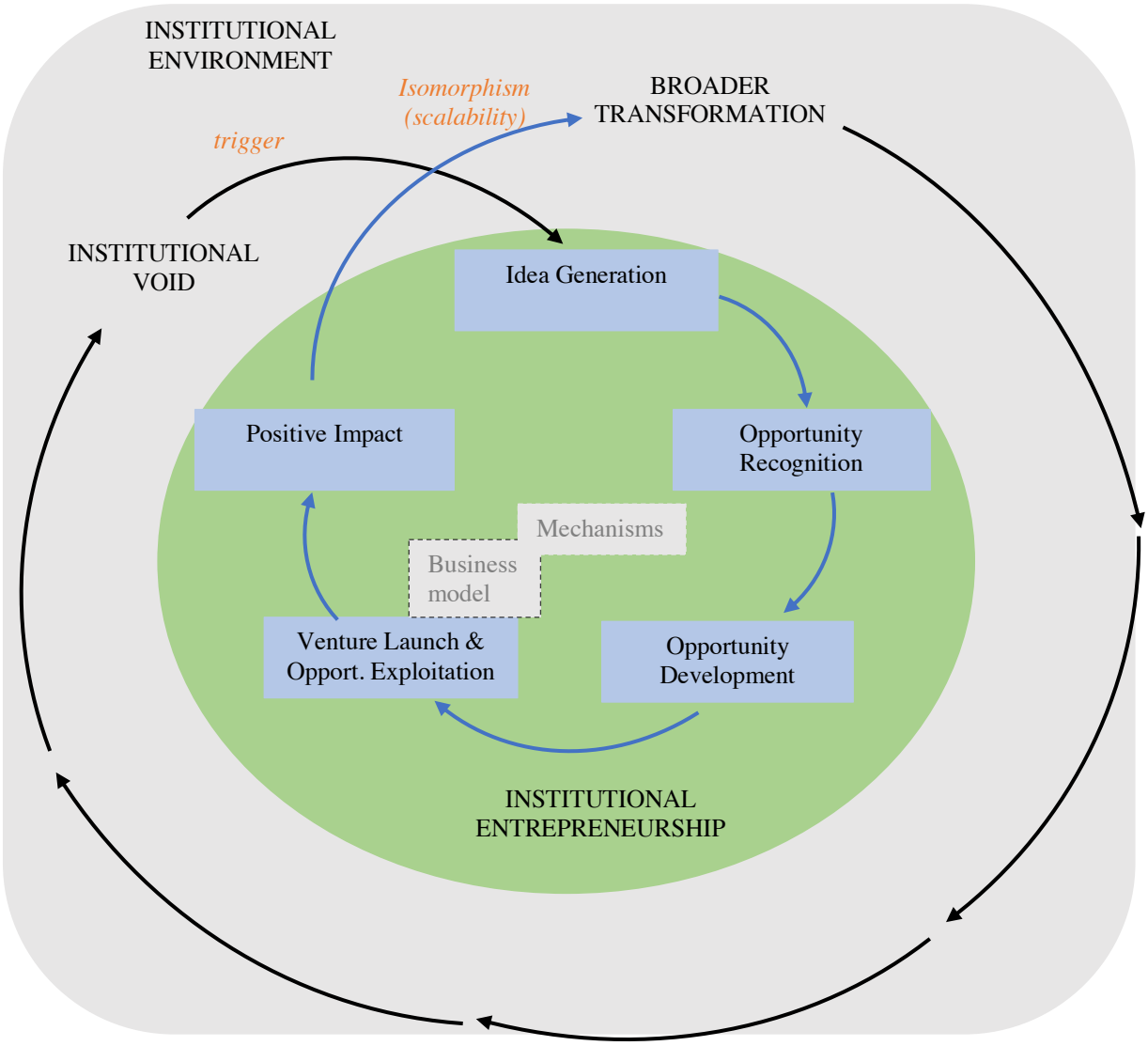
The eighth indicator of positive social change generated by these entrepreneurs is the promotion of institutional pressures since they exert a certain level of normative, and mimetic pressure. These businesses need a change in consumer behaviour towards the consumption of food that would be rejected by the regular market, by using mechanisms to exert consumer education, providing a new meaning and new knowledge to help coining a new conceptualization of consumer ideas and practices. However, they go further when they incentivize their consumers to exert normative pressures with their friends by sharing (these consumers) posts on social media about food waste and their new consumption practices under the idea of a "food waste fighter". Mimetic isomorphism occurs when retail incorporating SE practices in relation to food waste by selling non-standard produce and arranging educational activities with its consumers. This educational activity with consumers generates some degree of normative pressure. Mimetic isomorphism is also seen in the business of some SEs, as they are inspired by similar businesses in other contexts. Since all these SE are also strongly supported by the media, which publicize the FLW problem and possible solutions proposed by them, there is also some normative pressures made indirectly by these businesses.

However, there are no coercive institutional pressures from SE. It is expected that, insofar as it is possible to expand mimetic and normative pressures, accompanied by a larger change in behaviour on the part of some consumers and supply chain stakeholders (scale the impact of SE), society start to pressurize the government into introducing laws and regulations aimed at reducing FLW. It is also expected that if these practices are adopted by major players, the supply chain itself will initiate some form of coercive pressure on suppliers and other stakeholders.

These three processes in the individual level (entrepreneurial process), organizational level (the mechanisms used by these entrepreneurs to influence the institutional environment) and the societal level (indicators of positive social impact generated by the agency of these entrepreneurs addressing FLW solutions) together provide answers to the research question about how first mover´s entrepreneurs exercise their agency and produce a positive social impact in the context of FLW solutions. This contributes to shedding some light on the paradox

of embedded agency, i.e., the ongoing debate in the Institutional Theory about the agency *vs*. structure. However, this relationship seems to be more complex. Figure 4 summarizes a schema indicating the relationship between the institutional environment and the three elements proposed for the agency in institutional entrepreneurship:

Figure 4 - Agency and positive institutional change through sustainable entrepreneurship



First, there is the institutional environment, constituted by social, cultural and legal factors. There is a predominant logic related to some issue (FLW, for example) that follows a flow. This logic is related to mimetic, coercive and normative isomorphism in organizations. However, the institutional environment in any social system has its institutional voids. These voids change according to the context, even if they concern the same topic.

The institutional void alone does not generate any change. It is necessary a "potential entrepreneur", a regular citizen, not necessarily with any experience in entrepreneurship, but

with a pre-history in some issue related to sustainability in his/her personal life, which can be, for example, education, work experience, hobby or family background. It is in the encounter between this void and the individual / "potential entrepreneur" (at the micro-level of analysis) that the trigger for change arises. In this process comes the idea (idea generation) with the solution for this void. Therefore, opportunities are dependent on the social, political and institutional environment of the entrepreneur.

The idea generation process itself seems to be restricted by the institutional context in which this individual (future entrepreneur) and the void are inserted. For example, in the case of FLW, SE in developing countries promoted business models with solutions more aligned with the initial stages of the supply chain, and SE in developed countries promoted business models with solutions more aligned with the latter stages of the supply chain, attending voids already identified in the literature in these contexts, as it was identified in paper III.

It is at this moment that the institutional environment again restricts the action of this entrepreneur. Because they seek solutions in other contexts, including business models working at the same time (this is a very important element of the agency at the micro-level), as identified in Paper I, but they decide to reproduce (mimetic isomorphism) business models that are inserted in environments similar to their context.

The SE appears throughout the stages of the entrepreneur's process (opportunity recognition, opportunity development) and is complete when it starts to sell its service/product - in the Venture Launch and Opportunity Exploitation phase. It is at this stage that institutional entrepreneurs act through the business model (meso level) and put into practice mechanisms to influence the institutional environment. This is essential for the survival (legitimation) of this business.

The action of the SE generates a positive impact that extends to various spheres of society (macrolevel). Their positive social change is very relevant in the context in which these businesses operate. However, it needs to be broader to solve the institutional void. For the agency of these SE to promote a broader positive social change, this must be escalated. One way to scale this impact is through isomorphism – especially mimetic and normative. It is probably only after the escalation that the institutional void can be solved. As a result, coercive pressures would emerge in the environment, which was non-existent or deficient in the previous phases. The agency of these entrepreneurs goes to the solution of the void, because it affects the processes of isomorphism. For this reason, the measurement of the impact is a relevant process in the agency of institutional entrepreneurs and the discussion of the embedded agency. The agency is then context-dependent, but it also changes the context. And by changing the

context, it may be generating a new void. That open windows of opportunity for new individuals to become change agents.

This thesis advances theoretically by providing knowledge about the key factor and process related to the agency versus structure ongoing debate in the framework of Institutional Theory (the paradox of embedded agency). The need to fill this gap was highlighted initially by Battilana and D'Aunno (2009), Holm (1995), Kondra and Hinings (1998), Tracey, Phillips and Jarvis (2011), Seo and Creed (2002), and Zietsma and Lawrence (2010), and more recently by Colombero, Duymedjian and Boutinot (2021), De Lange (2019), Heiskanen, Kivimaa and Lovio (2019), Lok and Willmott (2019), and Zapata and Zapata Campos (2019). All these authors consider the paradox of embedded agency as an unsolved problem in Institutional Theory.

More specifically, this thesis also fills the gap in the literature related to how opportunities for institutional entrepreneurship are created, recognized and/or enacted, which was indicated by Dentoni *et al*. (2018), Ko and Liu (2020), Lusch (2017), and Mair and Marti (2009), among other authors indicated in paper-I. It analyzed the mechanisms used by these entrepreneurs to influence the institutional environment, a necessity indicated by Cheney *et al*. (2014), Dentoni *et al*. (2018), Grob and Benn (2014), and Stephan *et al*. (2016), among other authors indicated in paper-II. And the thesis also provided answer related to how these organizations address globally relevant problems and contribute to systemic change, a gap indicated by Dentoni, Bitzer and Schouten (2018), Heiskanen, Kivimaa and Lovio (2019), Kilelu *et al*. (2013), Stephan *et al*. (2016), and Zapata and Zapata Campos (2019), among other authors indicated in paper-III.

Despite the evident gap in the literature, this is not the first investigation looking to shed some light on the paradox of embedded agency. Other scholars had already carried out investigations before that brought some answers to this paradox. The findings of this thesis corroborate some of these studies, bring different results compared to others and some novelties.

For example, Webb, Khoury and Hitt (2019) provided initial insights related to the importance of institutional voids in formal and informal institutions in relation to the embedded agency. This thesis found that institutional voids are fundamental to influence entrepreneurial behavior that disrupts or challenge the practices established in the market. Battilana *et al*. (2009) proposed that there are two enabling conditions for institutional entrepreneurship. The first one

is the field characteristics. It relates to the existing conditions where the institutional entrepreneur is embedded and expects to influence. We found similar results, as can be seen in Figure 4. The second one is the actors' social position, which they found to be related to a formal and high-status position, i.e., a legitimate identity. The results of this thesis provide no evidence in the same direction. On the contrary, the actors at the beginning of the agency do not have any prominent position, whether it is related to some high-status position or a good financial condition. These entrepreneurs emerge in the field as "powerless agents", and it is along their trajectory that they build a legitimate identity - both in relation to their social position and in relation to their business.

Ko and Liu (2020) found that institutional entrepreneurship involves three domains of institutional work: engaging commercial revenue strategies, creating a professionalized organizational form, and legitimating the social-commercial business model. The thesis identified the presence of these domains; however, they are only a small portion of all the processes involved in the agency. The domains (which were understood here as the process at three different levels) start very before the entrepreneur engages in commercial strategies, and these processes goes beyond the legitimacy of the business.

In this sense, the thesis is much closer to the proposition of the levels of institutional work proposed by Tracey, Phillips and Jarvis (2011): micro, meso and macro. However, while they identified a total of six processes within these levels, this thesis found that the agency is much more complex and with more processes, as listed in Figures 3. And yet, only the processes at the three levels do not explain alone the paradox of embedded agency. As mentioned in the explanation of Figure 4, it is in the encounter between the institutional void and a "potential entrepreneur" that the trigger for change arises. But for this trigger to happen, a series of mechanisms at the individual (micro) level also need to occur with this "potential entrepreneur". And the agency does not end at the micro-level, it goes through two more processes (meso and macro), all interconnected and subsequent. And the need for scalability also needs to be added to this equation. Moreover, successful responses to institutional challenges should be rooted both in institutional opportunities and institutional voids. Therefore, in comparison with previous studies, this thesis also advances in identifying the embedded agency as a much more complex phenomenon. The framework with the process in the three levels in the agency (Figure 3) and the schema indicating the relationship between institutional environment and the three elements proposed for the agency in institutional entrepreneurship (Figure 4) summarizes the complexity of the embedded agency and the theoretical contribution of this thesis.

6 FINAL REMARKS

The emergence of entrepreneurs dealing with FLW solutions has no explanation by Institutional Theory, an important gap this thesis aimed to shed light on. In general, this thesis contributes to the advancement of Institutional Theory in relation to agency versus structure ongoing debate (embedded agency paradox) when investigating how first mover´s entrepreneurs exercise their agency and produce a positive social impact in the context of FLW solutions. The thesis contributions appear visually outlined in the framework with the process in the three levels of agency and the schema indicating the relationship between institutional environment and the three elements proposed for the agency in institutional entrepreneurship. It also contributes to understanding: the sustainable entrepreneurial process, the mechanisms used by these entrepreneurs to influence the institutional environment and by proposing indicators of positive social impact generated by the agency of these entrepreneurs addressing FLW solutions.

Specifically, Paper-I also contributes to fill the gap about the knowledge in the field of sustainable entrepreneurship by creating a more wholesome picture about the sustainable entrepreneurial process; paper-II also contributes to filling the gap in the literature by identifying business models' innovations in sustainable entrepreneurship, analysing their characteristics, their mechanisms to overcome hybridity-related tensions, and providing empirical evidence about how business models can be used to create and capture multiple forms of value; and paper-III illustrates the interface between SE that addresses the food waste problem and suggests solutions, and supply chain coordination, performance improvement and the indicators of positive social change.

This thesis has some useful implications for potential entrepreneurs and/or managers who wish to pursue a business that disrupts or challenge the practices established in the market. First, it was identified process in three levels that enable them to incorporate sustainability goals within commercial activities. These processes on each level offer an overview of the key events and practices that are needed to focus on attentively. More specifically, they need to seek to know the real problems faced by the communities in which they live and reflect on those problems that most arouse their sensitivity, especially observing their previous life, whether in education, work, hobby or family background. When observing it, they should be aware of what can be considered as a market imperfection (institutional void). One way to do this is to research successful businesses in other contexts that have solved problems similar to the one that caught the attention of these future entrepreneurs.

At the meso level, entrepreneurs and/or managers need to be aware of the price strategy of the product/service offered - it needs to be competitive, offering convenience to consumers and a strategy for entering the market that is not complex nor expensive in the beginning. They must be aware of the strengths within the institutional environment in which they are inserted (for example, great dissemination of technology in business). They need to note that businesses that "swim in the opposite direction" – thinking about the example of the water stream of a river provided in the introduction of the thesis - need both strong consumer awareness and education and mechanisms that promote institutional pressure. Examples of mechanisms that can be used are the foster the sharing of intangible values and engagement of multiple stakeholders in sustainability discussions. Other ways can be developed. Naturally, they need to carefully promote a good balance of the hybrid tensions they face, i.e., the business needs to be profitable and reach the third process (macro level) - have a positive social impact in society.

A social implication of this thesis is to bring a new alternative to answering the recent call from the United Nations 2030 Agenda for Sustainable Development, especially in relation to the goal 12 (FLW), but also in relation to goals 2, 6, 13, 14, 15 and many other SDGs which are directly or indirectly related to the FLW reduction. Public policymakers and other stakeholders engaged in reaching the SDG must be aware of the entrepreneurship and the private sector potential as agents of change to a more sustainable world. Their agency reflects positive impacts in various spheres, whether environmental, social, economic, consumer awareness and more positive behaviour, health and well-being, civic engagement, supply chain coordination (which impacts on actions of other stakeholders) and finally institutional pressures. This type of initiative can be promoted/encouraged by governments (policies to encourage sustainable entrepreneurship related to SDG, for example) or investors interested in sustainability. The government should also be attentive to possibilities to scale the impact of the agency of these institutional entrepreneurs when observing the changes that they encourage and include those that are pertinent for the country in the form of coercive institutional pressures - through laws, public policies programs and regulations, for example.

This thesis also advances the knowledge regarding the strategy to encourage future entrepreneurs linked to the SDGs, which serves the government, academia, NGOs and the most diverse stakeholders related to sustainability. The incentive of these institutional entrepreneurs should take into account some of the findings in relation to the individual level of agency, especially the importance of prior experience, the sensitivity towards a social or environmental problem in the community, and the knowledge of similar initiatives that solve social and environmental problems. The agency of institutional entrepreneurs, besides help answer the

theoretical gap in relation to the embedded agency, paradox shows that there is hope for a more sustainable future.

Despite exploring a relevant number of cases, in different countries and institutional contexts, this study has some limitations. One limitation relates to the fact that, as an exploratory investigation, findings cannot be extrapolated to broader populations. Another limitation relates to the fact that just one sector was analyzed. This limits the conclusions that one can draw across different sectors. Future studies can use large quantitative surveys to test the findings of this thesis in different countries and sectors to further establish generalizability.

The theoretical and methodological choices of this thesis also have their limitations. First, Institutional Theory is weak in analyzing the internal dynamics of organizational change. Therefore, this theory lens is silent on why some organizations adopt radical change, whereas others do not, despite experiencing the same institutional pressures. Nevertheless, Institutional Theory contains insights and suggestions that, when elaborated, provide a model of change that links organizational context and intra-organizational dynamics (Greenwood & Hinings, 1996). Another weakness is that building theory from cases may result in narrow and idiosyncratic theory. Case study theory building is a bottom-up approach, such that the specifics of data produce the generalizations of theory. The risks are that the theory describes a very idiosyncratic phenomenon or that the theorist is unable to raise the level of generality of the theory (Eisenhardt, 1989).

Finally, the results of this thesis generate some opportunities for future research. The first is to empirically test the proposed schema indicating the relationship between institutional environment and the three elements proposed for the agency in institutional entrepreneurship. They could be tested in other contexts, with other objects of study and with other sectors. The sample could also be extended and evaluated quantitatively.

Another opportunity for future research is related to the triggers in the institutional environment that can enable an individual's agency. It identified the importance of pre-history in some issue related to sustainability. Future studies could investigate which educational experiences could help to enable agency in association with institutional voids. The form and timing of the legitimacy of the business were not the target of this research but are important issues at the entrepreneurs' agency. This is also an objective of the entrepreneurs and a necessary element for the success of the business. Researchers could address these questions. In addition, future research can explore barriers and challenges faced by institutional entrepreneurs who

seek to develop institutional work related to sustainability, as well as propositions to solving relative problems.

The positive social change impacts were measured qualitatively with the proposition of generating indicators. Further studies could deepen this analysis and verify the impacts, quantitatively, especially with regard to the quantification of food waste or the amount rescued or prevented from being lost or wasted. This is an evident need in many countries. Also, the development of a metric scale for institutional entrepreneurship considering the different types of institutional work would bring opportunities for carrying out relevant quantitative research. Regarding the impact scaling, finding which mechanisms would be able to generate more normative and mimetic isomorphism. Finally, Isomorphism is just one of the possibilities for scaling the actions and impact of entrepreneurs. Future research could identify other possibilities for scaling the positive social impact generated by the agency of these entrepreneurs.

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APPENDIX I: CASE STUDY PROTOCOL

Research Objective

To understand how first mover´s entrepreneurs exercise their agency and produce a positive social impact in the context of FLW solutions. To address the main research goal, specific objectives were defined:

Cases Selection Criteria

1. To be a sustainable entrepreneur addressing food waste prevention/reduction;
2. To be available for interviews and, if possible, local observations.

Approach to Organizations

Once the organization follows the criteria for selecting cases, proceed with the contact in order to rekindle the invitation to participate. The invitation will involve the initial sending of the electronic message when the researcher already has previous access to the electronic address of the responsible organization. If the researcher does not have this information, check other forms of contact through social media or a personal contact network for intermediation.

In the email contact, describe the research objectives and why the organization was chosen as a potential candidate to participate in the research. Also, clarify that the company's participation involves interviewing the company's owner(s) and/or manager(s) and eventual assignment of relevant documents to the research.

Wait a week for a reply. If there is no response, try resending the primary email three more times, as well as try phone contact. If there is no answer, give up the specific case and leave for other pre-identified cases.

Preparation for Data Collection

Once the representatives of the organizations have agreed to participate in the research from the initial contact, proceed with the interview scheduling with the representative(s) of the organization. Prior to the interview, make a survey and start the reading of secondary materials regarding the organization, including academic studies, reports and videos made by third parties, as well as documents made available by the organization in its electronic address and in social networks. This is fundamental to have prior knowledge of the company and, subsequently, to be used as a source of complementary evidence on the case.

Conduct of Interview and Observation

Prioritize interviews in-person to allow observation of the organization's activities. When it is not possible, conduct interviews in other ways, such as a video conference or telephone.

During the visit to the organization, ask to observe the main activities and any others that may be relevant to the research. As for the interviews, start by explaining the research objectives and thanking the participation. Present and read the consent protocol to the interviewee regarding the organization's participation in the research, in which it must indicate that the company's name is under confidentiality. Inform that immediately after the interview ends, the researcher will send the consent protocol by email and request that the representative of the organization returns it signed by email or with an "ok" in the main message.

Before starting the questions, request permission to record the interview, stating that the researcher and eventually his advisor are the only ones that would have access to the data contained therein and that the procedure is important to ensure the accuracy of the information transmitted by the interviewees and to facilitate data analysis.

During the interview, use the semi-structured script previously developed, based on the literature and the validation of experts to conduct the conversation, however, without being stuck to its content.

When finishing the questions, inform that within some time the researcher would resume contact to resolve any doubts that remain from the interviews and to validate the description of the case made by the researcher, based on the information transmitted. Finally, ask the interviewee to indicate other key informants of the organization who would be able to contribute to the research, as well as the assignment of eventual documents and materials having the same purpose. Thank interviewee's participation.

Validation of Information

After writing the cases, send the information and case description to the responsible, central contact of each organization, asking if there are any suggestions for improvement, complementary information or punctual corrections to be made, emphasizing that the change in the structure of the case writing is not on the agenda.

Return results to participants

After the thesis defence, send the final version of the thesis to the participants, in addition to any work resulting from it, thanking the participation again.

APPENDIX II: INTERVIEW GUIDE

INTERVIEW GUIDE – ENTREPRENEURS AND CONSUMERS

INTERVIEW GUIDE – ENTREPRENEURS

SO1: To identify and describe the operation of first movers' entrepreneurs addressing FLW solutions

1) Can you say your name, your position in the company and for how long you perform this function?

2) Can you describe how the entire operation of the organization works, in relation to products and/or services, from the inputs receiving to the final delivery to the consumer?

3) Who is your target audience? Can you comment on the customer profile and the current number of customers for each product and/or service segment?

4) Who are your suppliers? Can you comment a little on how many suppliers do you have? And about the type of agreement do you have regarding products/services that may or may not be part of what is offered to customers? How is the price determined?

5) What is the legal structure of the organization?

6) Can you comment about the most relevant aspects of the organization's history since its foundation that influenced the success or threatened the survival of the company?

7) How did you plan for resources (manpower, technology systems, equipment etc.) during the start-up phase of your business?

8) How have you planned for the expansion of your business in terms of new services, new locations etc.?

SO2: To understand the process related to the emergence of the enterprise

9) What were your main motivations to start this business?

10) Can you describe how did the process of generating ideas for the business occur? a) What were all the business options you thought to do? b) How did you get to these options?

11) How was the process of choosing the most suitable idea for the business? a) Which reasons led you to discard other options? b) Which reasons led you to choose this business as the best option?

12) Can you comment about your educational, professional or personal background regarding sustainability and/or food waste?

13) Are there any food waste reduction business models that inspired you during the process of ideation or business planning? Can you describe the business? Which aspects were important?
14) After you decided to work with food waste, which relevant processes did you carry from the decision process to the business opening?
15) How was the business strategy insertion in the market? Specifically, how did you proceed to have your firsts customers?

SO3: To analyze the mechanisms used by these entrepreneurs to influence the institutional environment
17) Does the company interact with these agents regarding the food waste question? Can you explain how the interaction occurs? a) producers; b) processing industry; c) distributors; d) retail; e) restaurants; f) final consumers; g) food banks; h) government; i) social movements / NGOs; j) media; k) universities; l) other agents?
18) Do you run workshops, events or awareness campaigns related to food waste issues? Can you describe them in terms of people involved, activities performed and results? (ask for documents)
19) Do you participate (or have participated) in any formal or informal activity/network related to food waste reduction organized by third parties? Can you describe them in terms of people involved, activities performed and results? (ask for documents)

SO4: To propose indicators of positive social impact generated by the agency of these entrepreneurs addressing FLW solutions.
20) Are there any pieces of evidences of a decrease in food waste due to your organization activities? Please, provide examples. How do you measure it? (ask for documents)
21) If your company has a positive impact on any of these aspects could you describe it and how do you measure it? a) environment; b) social and/or economic inclusion; c); health and well-being; d) civic engagement; e) food sector practices; f) local community; g) other?
22) Did your actions reflect on any measurable changes in: a) the food sector practices; b) regulation; c) competitors; d) consumer behavior; e) media communication? Could you describe it? (ask for documents)
23) Are you aware of other organizations that have been inspired by your organization´s work to build their business?

24) Do you produce campaigns, folders, publications or reports? a) Can you describe them? b) To whom do you deliver? (ask for documents)
25) Have you done any research with your consumers? Did you have any feedback? (ask for documents)

INTERVIEW GUIDE – CONSUMERS

1) What product/service do you buy from company X?
2) Since when do you buy this product/service?
3) Why did you decide to buy this product/service?
4) Do you understand that your interaction with the product/service/company has some positive impact on your life? If so, what are the impacts? And how are they generated?
5) Do you understand that the product/service/company generates some positive impact on society? If so, what are the impacts? And how are they generated? And why is this important?
6) As a result of using this product/service and your interaction with the company, did you acquire any new knowledge? If yes, what is the new knowledge? How was it acquired?
7) As a result of using this product/service and your interaction with the company, did you acquire any new behavior? If yes, what is the behavior? How did the product/service/company influence?
8) Do you realize any negative points arising from this product/service /company to society that could be modified? Which are they?
9) In which country are you?
10) Are there any comments you would like to make?