Revista Eletrônica de Estratégia & Negócios

ISSN 1984-3372
DOI: 10.19177/reen.v14e2202153-82

SOCIAL INNOVATION AND SUSTAINABILITY IN THE FAMILY AGRO-INDUSTRIES

INOVAÇÃO SOCIAL E SUSTENTABILIDADE EM AGROINDÚSTRIAS FAMILIARES

INNOVACIÓN SOCIAL Y SOSTENIBILIDAD EN AGROINDUSTRIAS FAMILIARES

Tiago Zardin Patias
Doutor em Administração pela Universidade Federal de Santa Maria (UFSM)
Professor da UFSM no Departamento de Administração e Coordenador do Curso de Pós-Graduação em Agronegócios do Campus Palmeira das Missões

Bianca Bigolin Liszbinski
Doutoranda em Desenvolvimento Regional pela Universidade Regional do Noroeste do Estado do Rio Grande do Sul (UNIJUÍ)
Professora da UFSM no Departamento de Administração, Campus Palmeira das Missões

Clandia Maffini Gomes
Pós-Doutora em Administração pela Universidade de São Paulo (USP)
Professora do Programa de Pós-Graduação em Administração da UFSM

Maria Margarete Baccin Brizolla
Doutora em Ciências Contábeis e Administração pela Universidade de Blumenau (FURB)
Professora do Programa de Pós-Graduação em Desenvolvimento Regional da UNIJUÍ

Daniel Knebel Baggio
Doutor em Contabilidade e Finanças (Universidad de Zaragoza, Espanha).
Professor do Programa de Pós-Graduação em Desenvolvimento Regional da UNIJUÍ

Artigo recebido em 31/05/2020. Revisado por pares em 13/07/2020. Reformulado em 15/07/2020. Recomendado para publicação em 17/08/2020, por Ademar Dutra (Editor Científico). Publicado em 31/08/2020. Avaliado pelo Sistema *double blind review.*

ABSTRACT

The aim of this research is to analyze the relationship between the social innovation and the sustainability in the family agro-industries allocated to the Local Productive Arrangement of Agroindústria Familiar e Diversidade do Médio Alto Utuguai e Rio da Várzea located in Rio Grande do Sul – Brazil. The method of this paper is quantitative based on data collected in a questionnaire applied to the owners of agro-industries. The relationship between the dimensions of social innovation and sustainability provides positive results in economic, social and environmental aspects, identifying priority for the economic bias of sustainability in the analyzed sample.

Keywords: Social Innovation; Sustainability; Family Agro-industry; Sustainable Production; Local Productive Arrangement.

RESUMO

O objetivo deste estudo foi analisar a relação entre a inovação social e a sustentabilidade em agroindústrias familiares alocadas ao Arranjo Produtivo Local da Agroindústria Familiar e Diversidade do Médio Alto Uruguai e do Rio da Várzea localizado no Rio Grande do Sul – Brasil. Trata-se de uma pesquisa quantitativa instrumentalizada a partir de dados coletados com a aplicação de questionário junto aos proprietários das agroindústrias. Observou-se que a relação entre as dimensões inovação social e sustentabilidade proporciona resultados positivos nos aspectos econômicos, sociais e ambientais, identificando-se ainda, uma priorização para o viés econômico da sustentabilidade na amostra analisada.

Palavras-chave: Inovação social; Sustentabilidade; Agroindústria familiar; Produção sustentável. Arranjo Produtivo Local.

RESUMEN

El objetivo de este estudio fue analizar la relación entre la innovación social y la sostenibilidad en las agroindustrias familiares asignadas al Acuerdo Productivo Local de Agroindústria Familiar e Diversidade do Médio Alto Uruguai e do Rio da Várzea del Rio Grande do Sul – Brasil. Es una investigación cuantitativa instrumentada en datos recopilados mediante aplicación de un cuestionario con los propietarios de las agroindustrias. Se observó que la relación entre las dimensiones de innovación social y sostenibilidad proporciona resultados positivos en aspectos económicos, sociales y ambientales, identificando una prioridad para el sesgo económico de sostenibilidad en la muestra analizada.

Palabras clave: Innovación social; Sustentabilidad; Agronegocios familiares; Producción sostenible; Arreglo Productivo Local.

1 INTRODUCTION

For decades, the terminology of innovation has been the topic of discussions and studies in different approaches. Widespread, innovation focused on improvements, technological and management results (TIDD; BESSANT, 2013) took on a new facet, moving from the business and technological segment (BESSANT; TIDD, 2007) to the social (CLOUTIER, 2003; MULGAN *et al*., 2006; MURRAY; CAULIER-GRICE; MULGAN, 2010; GASPARIN *et al*., 2020).

According to Howaldt and Kopp (2012), social innovations acquire importance over technical innovations while they emphasize attention to current problems in society, such as the consequences of demographic evuruolution and climate effects. Thus, social innovation emerges as a response to the growing social, environmental and demographic challenges, which are often complex, multifaceted, involve a number of stakeholders and are, by their nature, difficult to resolve. These challenges are many and include the limitations of the modern welfare state and conventional market capitalism, the scarcity of resources and climate change, the aging population and the costs associated with healthcare, the impact of globalization and the impact of urbanization in large scale (WARNOCK, 2014).

In order of that, it can be seen the adhesion of companies to social innovation represents being on the same path as sustainable development. That is, suffering initial external pressure mainly by countless government entities and organized civil society that hold companies responsible for the processes of social and environmental degradation affecting the entire planet (BARBIERI *et al.*, 2010).

Overall, society is realizing the need to replace the old means and practices with others that translate the principles, objectives and guidelines of the new social transformation movement (AVELINO *et al*., 2014). Such movement foresees the preservation of the environment and solutions for the countless social challenges, requiring a new look at innovation, which is strongly committed to new technologies or community practices (NUNES *et al*. 2017), making it necessary that the same attention is paid to social issues, which will give meaning to social innovations (DIONISIO; VARGAS, 2020).

Considering this approach, it can be seen that the essence of social innovation is related to the assumptions of sustainability or sustainable development, a theme that has been discussed more commonly since the 1980s in the face of environmental and social problems that since the early 1960s were already beginning to be perceived as a crisis of global dimension (BARBIERI, 2007). The most widespread concept of sustainable development refers to the Brundtland Report that proclaims it to be the one that suppresses the needs of the present without compromising the ability of future generations to meet their needs (WORLD COMMISSION ON ENVIRONMENT AND DEVELOPMENT, 1987).

The initial concept stand for the evolution of discussions around the theme of sustainability, especially with refers to essential and interrelated dimensions - social, economic and environmental - considered as the pillars of sustainability (ELKINGTON, 1997). Gomes *et al.* (2014) corroborate this feeling when they state that sustainability is not only limited to environmental and social benefits but also helps to increase the economic value of organizations. Therefore, given the current context of the insertion of companies and society, it is impossible to discuss economic development in isolation and not to think together with the preservation of the environment and the benefits attributed to society.

Based on this contextualization, this study attempt to analyze the relation between social innovation and sustainability in family agro-industries allocated to the Local Productive Arrangement of Agroindústria Familiar e Diversidade do Médio Alto Uruguai e do Rio da Várzea located in the northern region of the State of Rio Grande do Sul (RS) – Brazil. This productive arrangement is the result of a collective of society with the induction of public power, which presents food production as its greatest potential (PATIAS *et al*., 2016). In general, this type of productive arrangement is recognized as an instrument for decentralized development, maintaining the roots of the place (VERDI *et al*., 2005) and promoting the economic and social autonomy of a part of society (COSTA; PATIAS; DE MARCO, 2014).

It should be highlighted that the joint discussion of the themes of social innovation and sustainability is developed in different contexts, both theoretically, following the example of Mehmood and Parra (2013) and Osburg (2013), and empirically with studies by Piccarozzi (2017) and Correia *et al.* (2018). However, a study aligning both themes within the scope of family agro-industries is different, a fact that justifies their contribution to fill this gap in the

literature. Based on this aspects, the next sections of this article theoretically and methodologically support the evidence identified in the research.

2 SOCIAL INNOVATION

According to the literature, social innovations are seen as differentiated solutions to human needs (MULGAN, 2006) and alternatives to solve social and environmental problems faced by humanity (MAURER; SILVA, 2014). Social innovation is recognized as an action led by social actors that aims to respond to an aspiration, meet specific needs or offer a solution, changing social relations or proposing new cultural orientations. Thus, in addition to responding to specific needs, social innovations are proposals that aim at social change as they imply a new vision or a new way of seeing, defining and solving problems (BOUCHARD, 2012).

The theme of social innovation has been discussed with attention since the middle of the 20th century. One of the first books on the subject was published in 1967, when it came to social innovation as a solution to social problems, in particular 'marginals', such as the unemployed, the elderly, the poor and criminals (FAIRWEATHER, 1967). But it was from the 2000s that scientific production on the subject intensified, indicating the constitution as a field of research and being considered as a critical type of innovation (POL; VILLE, 2009).

In terms of consolidating the social innovation theme, it has to mention the study by Cloutier (2003) that classify the studies on this theme into three levels of analysis: the individual, the environment (territory), and the company. At the first level, social innovation is considered to be a device that will make it possible to produce lasting changes in the individual to develop it and with power over the course of his own life, with the person being the center of the process. At the level of the environment (territory), the objective is development with a view to improving the quality of life and social transformation, attacking or preventing the social problems that plague certain territory. The level of the company involves two perspectives: a) the instrumental one, which deals with the reorganization of work as a determinant of the capacity to innovate and generate knowledge, with a view to discussing the employees' well-being; b) non-instrumental, which considers new forms of work organization as a social innovation, because they can improve the quality of life at work. Finally, the study identifies four major dimensions of analysis, namely: 1) the object itself, its

nature; 2) the creation and implementation process; 3) the fate of the changes; 4) and the results obtained.

The social innovation is usually stimulated by a concern for people and the communities, rather of commercial gain, being able to be described as the development of new concepts, strategies and tools that support groups in achieving the goal of improving the welfare of a society (DAWSON; DANIEL, 2010). Accordingly of this concept, it aims to produce social change with lasting and relevant results for society to face challenges, making a valuable contribution to the dimensions of health, education, safety and quality of life. Furthermore, a social innovation aims to modify social relations and existing rules between stakeholders, because it seeks to involve citizens in decision-making processes and management of social issues, referring to the idea of active participation and collaboration in process (BOUCHARD, 2012; PICCAROZZI, 2017).

In order of these characteristics, social innovation can be seen from two angles: as a process or as a product or service. As a process, the focus is on the form, stages, actors, context, the need for resilience, social capital, empowerment, among other elements. As for a product or service, the focus is on results, transformations, change objectives, and impact. Although the two forms of analysis, one is a consequence of the other because there is no product or service without the minimum of the precedent process (PATIAS *et al.*, 2016).

One of the main feature of this theme is the crescent in the academic environment, identifying several aspects, stages and models of analysis of this theme in the literature, such as Cloutier (2003), Mulgan *et al*. (2006), Tardif and Harrisson (2005), Rollin and Vicent (2007), Buckland and Murillo (2013), Cunha and Benneworth (2013), Haxeltine *et al*. (2013), Avelino *et al*. (2014), Maurer and Silva (2014), Gasparin *et al*. (2020) among others. It is evident how over the years, the discussions on the topic have focused on explaining the dynamics of the social innovation process and the conditions under which social innovations develop, are sustained, and subsequently bring about social and behavioral change of society and economy (MEHMOOD, 2016; DIONISIO; VARGAS, 2020).

As the contextualization and recognition of the characteristics have presented, it is assumed by the social innovation initiatives can help to understand and materialize actions to

seek the promotion of sustainability, whether from localities or organizations. Moreover, the debate on sustainability can contribute greatly to this understanding, which is what is proposed in the next section.

3 SUSTAINABILITY AND THE RELATIONSHIP WITH SOCIAL INNOVATION

The concept of sustainability has evolved with the time, being approached from different theoretical basis in different fields of knowledge, figuring over the past few years as one of the central topics in scientific debates. Since the initial discussions about sustainability attributed to the Brundtland Report (1987), as already mentioned, the Triple Bottom Line theory emerged by identifying essential and interrelated dimensions for sustainability is revealed as relevant, which are recognized as social, economic and social pillars (ELKINGTON, 1997).

There are several factors that make up each of the pillars of sustainability, which interact with each other. Among the factors that propel the social aspect of sustainability are the support of cultural and social values, protection to health, access to education, solidarity in different instances, security and equal rights. In terms of the search for the environmental topic of sustainability, initiatives protecting the environment, responsible use of renewable resources, reducing the use of non-renewable resources, reducing environmental risks and protecting biodiversity are some of the initiatives implemented. As for the economic aspect of sustainability, this is the result of the observation of reducing costs, generating jobs and income, promoting innovations, improving social and human capital, in addition to considering future generations when planning their economic gains (HANSMANN; MIEG; FRISCHKNECHT, 2012).

In result of that, sustainability would be achieved when there was economic growth, when this economic growth met the growing assets of individuals and when natural resources were preserved in the development processes and the environment recognized as protected from daily activities (HAY; MIMURA, 2006; NASCIMENTO, 2012). In this sense, Kaivo-oja *et al.* (2013) reinforce that the positive results would be achieved when the pillars of sustainability were properly applied, that is, that natural resources are conserved, with the economy growing and socio-cultural factors leading to the well-being of all.

Although, sustainability would be achieved when there was economic growth, when this economic growth met the growing needs of individuals and when natural resources were preserved in the development processes and the environment recognized as protected from daily activities (HAY; MIMURA, 2006; NASCIMENTO, 2012). In this sense, Kaivo-oja *et al.* (2013) reinforce that the positive results would be achieved when the pillars of sustainability were properly applied, that is, that natural resources are conserved, with the economy growing and socio-cultural factors leading to the well-being of all.

Despite the considerations on how to achieve sustainability, from the perspective of business strategy, the implementation of management models focused on this paradigm is still considered a challenge. Although the entities recognize the critical importance of sustainability, most of them do not engage in this form of management, mainly due to the vague understanding of sustainable fundamentals and uncertainty regarding the return on investments required (NAWAZ; KOÇ, 2018). What emerges from this situation is that sustainability is an omnipresent phenomenon, in other words, underlying the structure and performance of organizations (ABOELMAGED, 2018).

In the case of a relationship between sustainability and social innovation, it is knowledgeable the discussion on these themes is a recent subject in the literature, although it recognizes the two concepts identified (PICCAROZZI, 2017; OMOBHUDE; CHEN, 2019). According to Correia *et al.* (2018), a perspective of social innovation for sustainability could assist especially in overcoming the disconnection between economic growth and social well-being, because, as actions and practices focused on sustainability can be enhanced through the development of social innovations (MEHMOOD; PARRA, 2013).

In other words, Pisano, Lange and Berger (2015) were emphatic when they stated the social innovations can be configured as alternative responses to the multiple environmental, social and economic crises faced by world society. In this sense, the development of social innovations could be considered essential for the strengthening of local spaces and less favored social segments, inserting them in the process of economic, social and environmental development.

In the business context, the generation of social innovation is considered a key to attaining sustainability, in addition of that, companies embraces corporate sustainability when driving social innovation will be the leaders in the coming decades (OSBURG, 2013). Reinforcing this perspective, Piccarozzi (2017) explains the companies are willing to implement social innovation, naturally will be oriented to achieve sustainability as a whole or at least on one of its pillars.

In view of the above, it becomes relevant to investigate the relationships established between social innovation initiatives and how this reflects in promoting the sustainability of organizations. Considering the object of this study – family agro-industries – it is understood the contribution is to advance contribution in the comphesion of the relationship between these themes from the evidence in a different and complex field, given its structure, daily practices and presented social and economic relations.

4 METHODOLOGICAL PROCEDURES

This study aims to analyze the relationship between social innovation and sustainability in family agro-industries allocated to the Local Productive Arrangement of Agroindústria Familiar e Diversidade do Médio Alto Uruguai e do Rio da Várzea located in the northern region of the State of Rio Grande do Sul – Brazil. To do the research, initially a description of the evidence of these two themes is made for this object of study, then, an analysis of the relationship between both. Thus, the research is initially characterized as being descriptive, considering its approach, registration and interpretation of a certain phenomenon (CRESWELL; POTH, 2016).

The evidence for the study was collected through a structured questionnaire, a survey, described “as obtaining data or information about characteristics, actions or opinions of a certain group of people, indicated as representative of a target population, using an instrument research, usually a questionnaire” (FREITAS *et al.*, 2000, p. 105). The questionnaire followed what was indicated in the literature – suggesting being valeted and pre-tested, and the conceptual basis used for the construction of this instrument is shown in Chart 1 and the variables for each of these constructs are specified in Tables 2 to 5 of the study results section.

The respondents were 49 owners of family agro-industries in the region covered by the Local Productive Arrangement (APL) of Agroindústria Familiar e Diversidade do Médio Alto Uruguai e do Rio da Várzea, thus dealing with a "non-probabilistic", "unrestricted" sample and "For convenience" (COOPER; SCHINDLER, 2016, p. 362). The choice criteria by the owners of agro-industries were participated in regional and municipal fairs, which facilitated access and decreased the operational costs of the research.

Chart 1 – Conceptual basis of the research

Social Innovation Dimensions	**Sustainability Dimensions**
Process Relationship Planning Governance Resul	Economics Socials Enviromental
Source: de Cloutier (2003), Mulgan *et al.* (2006), Tardif e Harrisson (2005), Rollin and Vicent (2007), Buckland and Murillo (2013), Cunha and Benneworth (2013), Haxeltine *et al*. (2013), Avelino *et al*. (2014), Maurer e Silva (2014).	Fontes: Elkington (1997); Hansmann, Mieg e Frischknecht (2012); Nascimento (2012); Kaivo-oja *et al*. (2013).

Sources: Research Data.

The aforementioned local productive arrangement of family agro-industries is located in the north of the State of Rio Grande do Sul and is characterized by covering a region with numerous small family agro-industries that process and commercialize different products related to the productive chains of milk, meat, cane, fruits , gourd, grape and wine, precious stones, metallurgy and grains. The creation of this APL had a fundamental participation of the public power through investments, which together with the efforts of several local actors, sought the construction of an alternative to solve local social problems, such as, for example, the economic support of rural families and its small agro-industries, social inclusion, job creation, income and improvements in the living conditions of this part of society.

Still in reference to the study design, regarding its approach, it is characterized as being quantitative and survey. According to Creswell and Poth (2016), this type of research provides a quantitative or numerical description of trends, attitudes or opinions of a given sample.

From the data collection, these were tabulated and later analyzed using the Statistical Package for the Social Sciences (SPSS) software. As a way to evaluate the results, descriptive statistics were used to analyze the specific issues of the themes of social innovation and

sustainability. In addition, we sought to correlate the dimensions of social innovation with the dimensions of sustainability, according to the theoretical constructs presented in Chart 1.

The correlation analysis followed the criteria proposed by Pestana and Gageiro (2003). Thus, an analysis of the normality of the distribution was initially performed using the non-parametric test of adherence to normality Kolmogorov-Smirnov (KS) with the correction of Lilliefors, with the significance level of the test being less than 0.05, thus rejecting the hypothesis that the distribution is normal. Thus, *Spearman's* coefficient was used to verify the association between variables. The evidence identified from the structure of this research is presented and discussed in the following section.

5 ANALYSIS AND DISCUSSIONS OF THE EVIDENCES

5.1 THE SOCIAL INNOVATION IN THE FAMILY AGRO-INDUSTRIES

For the description of the characteristics of social innovation in the context of family agro-industries, a score of relevance was made for each indicator, with weights referring to their positions, ranging from one (1) to five (5), as described in Table 1. These weights were defined based on the questionnaire structure, which was based on a five-point scale and served as a basis for measuring the sample's perception for each social innovation indicator.

Table 1 – Weights attributed to the respondents' perception

Acceptable Results	**Importance Attributed**
Strongly disagree	1
Partially disagree	2
Indifferent	3
Partially agree	4
Strongly agree	5

Source: Elaborated by the authors.

With the definition of the weights of each indicator, each of them was measured, as shown in Table 2. In general, family agro-industries indicate an average adherence of 3.927 (considering the scale of 1 to 5) for the questions of social innovation, representing an average agreement of 78.54% for all indicators.

The variable stands out the most in terms of agreement (75.5% of the sample) which refers to the search for the development of products improving people's quality of life, translating as a result of the activities of agro-industries. This evidence is reinforced by the

characteristics of the sample in always seeking new ways of doing their activities and by aiming at the change in the society inserted, either though the development of new products or by the predisposition to adapt to the changes that appear on the next day or in the middle of the day they are inserted.

Table 2 – Description of the social innovation indicators

Social Innovation Variables	Agreement Level Disagree Strongly ⇔ Agree Strongly					Medium
	1 n (%)	2 n (%)	3 n (%)	4 n (%)	5 n (%)	
Has good relationship with other agro-industries in the region	2 4.1	2 4.1	6 12.2	8 16.3	31 63.3	4.306
Always look for new forms to do activities	1 2	0 0	4 8.2	18 36.7	26 53.1	4.388
Care about society problems (unemployment, pollution, violence, etc.)	1 2	2 4.1	6 12.2	12 25.5	28 57.1	4.306
Search for change in the society	1 2	0 0	4 8.2	23 46.9	21 42.9	4.286
Search to develop products that improve people's quality of life	0 0	0 0	1 2	11 22.4	37 75.5	4.735
Depends on the support of local, state and federal government for your success	10 20.4	6 12.3	10 20.4	12 24.5	11 22.4	3.163
Consider important the support of Universities / College	3 6.1	1 2	9 18.4	13 26.5	23 46.9	4.061
Considers it essential to support unions and associations	3 6.1	1 2	7 14.3	16 32.7	22 44.9	4.082
Depends on the relationship with other agro-industries for success	11 22.4	8 16.3	14 28.6	11 22.4	5 10.3	2.816
Cooperates with other agro-industries	9 18.4	5 10.2	11 22.4	16 32.7	8 16.3	3.184
Overall, agro-industry is committed to internal (its agro-industry) and external (society) change	1 2	4 8.2	8 16.3	23 46.9	13 26.5	3.878

Source: Research Data.

In opposition to, the variable with the lowest overall level of agreement is that agro-industries understand they do not depend on the relationship with their peers for their own success (2.816, on a scale of 1 to 5). Likewise, the variable that dealt with cooperation on other agro-industries obtained a median index, besides, there is no agreement on this indicator. These data demonstrate the difficulty in understanding the good performance of each agro-industry does not occur in isolation, but can be influenced by the relationship with other agro-industries and also with other actors in the productive arrangement of which they are part, as provided by Cloutier (2003) considers coalition and diversity of actors as fundamental to the success of social innovation.

Although this last result, it was identified 63.3% of the sample fully agrees with the good level of relationship with the other agro-industries in the region. In a context of social innovation, this result assumes there is a relationship between actors guided by the construction and strengthening of trust over time, it is evident the authenticity with Maurer and Silva (2014) when they stated the social innovation needs synergy between the actors for their success. However, 8.2% of the sample affirms they do not agree with the existence of a good relationship with the other agro-industries, a situation which indicates the prevalence of individualism to the detriment of the collective, this collective being one of the main guidelines for social innovation.

It was also noticed when asked if they depended on the support of the local, state and federal public authorities for their success, the answers were dispersed, manifesting there is no consensus in this regard. It is perceptible how the productive arrangement of which the agro-industries of this study are part started from a process fostered by a public policy, however, this polarization in relation to the public power may reflect the current national context, an evidence directly affects public policies that end up not having the necessary support from the population and thus not providing the expected results.

The variables considered for the support of universities, unions, or associations to be important for the development of the activities of agro-industries showed an approximate agreement of 81% by the sample. This statement reinforces the bond existed between companies and local institutions and organs that assist them daily in the development of activities, in addition to being strategic determinants in the governance of this productive arrangement through the planning and execution of joint actions between different actors, seeking to foster regional development.

Still in terms of characteristics of social innovation, it was demonstrated in the sample, an understanding they are committed to change, whether internal or external, to face the challenges imposed, being drivers of changes in the processes of agro-industries. In terms of concern with the social problems in their surroundings, an average of 4.306 (on a scale of 1 to 5) was identified, which indicates the concern of the agro-industries to issues, for example, unemployment, pollution and violence.

It was observed that the characteristics of social innovation propose a different analysis, as previously highlighted. As a follow-up to the research, the next section exposes the sustainable characteristics of family agro-industries.

5.2 SUSTAINABILITY IN FAMILY AGRO-INDUSTRIES

To describe the characteristics of the three pillars of sustainability from the perception of the sample of family agro-industries, the possible responses and their respective weights were taken into account as already explained in Table 1. Thus, an agreement average was reached for each sustainability variable, which later served as the basis for calculating the overall percentage of understanding of the respective variable.

Table 3 presents the evidence regarding the variables of the environmental dimension of sustainability in family agro-industries. This environmental bias refers to production and consumption based on guaranteeing the preservation of ecosystems, involving, for example, the protection of water, air, land and biodiversity (ELKINGTON, 1997; HANSMANN, MIEG; FRISCHKNECHT, 2012). On average, the sample's environmental perception was measured at 74.67% agreement.

In environmental terms, the result identified in the water reuse variable stands out. This item had the lowest average among environmental issues, reaching only 38%. This result demonstrates that even though most agro-industries claim to control the use of water in their activities (72%), there are few cases adopting strategies for reusing the water used, an evidence where can aggravate drought situations, for example.

Table 3 – Description of the environmental pillar of sustainability

Environmental Variables	**Medium of Agreement**	**% Overall**
Control of the amount of water consumed in activities	3.6	72
Knowledge of laws and regulations arising from environmental infractions	4.0	80
Control of the amount of electricity consumed	3.6	72
Reuse of water	1.9	38
Reuse of residues	3.1	62
Participation in courses, seminars and lectures on environmental preservation	3.6	72
Attention and prevention of environmental accidents	3.9	78
Attention to any toxic residue generated	4.0	80
Soil care	4.2	84
Preservation of springs and forests	4.5	90
Proper disposal of generated waste	4.4	88

Environmental Variables	**Medium of Agreement**	**% Overall**
More attention with the environment than with the economic and social	4.0	80

Source: Data Research.

The variable for the preservation of springs and forests was the one emerging positively in the environmental dimension, with 90% of agro-industries concerning about this. It is conspicuous how this variable implies the issue of the legal requirement imposed by Law 12.561/2012 which deals with the Environmental Rural Register, mandatory for all rural properties, forming a strategic database for the control, monitoring and combating deforestation of forests and other forms of native vegetation in Brazil.

When it comes to the economic pillar of sustainability, this is related to the fact of the profit of organizations comes from responsible management of resources, respecting the other dimensions of sustainability (NASCIMENTO, 2012). Table 4 shows the perception of the investigated sample, considering that among the variables analyzed, an average of 76% was reached for the economic sustainability of family agro-industries.

Table 4 – Description of the economic pillar of sustainability

Economics Variables	**Medium of Agreement**	**% Overall**
Satisfaction with the level of product sales	4.0	80
Satisfaction with profitability	3.9	78
Concern about the level of indebtedness	3.2	64
Acceptable return on capital invested	3.9	78
Control of income and expenses	4.1	82
More attention with the economic than with the environmental and social	3.8	76

Source: Data Research.

Among the economic analysis, the variable presented with the lowest indicator was the concern of the owners of family agro-industries in terms of indebtedness, with 64%. Despite the result, the indebtedness issue is one of the elements with main focus by family agro-industries, considering factors such as the high interest rates practiced and the current Brazilian economic instability, which can make the business unfeasible and compromise family income.

In contrast, a large part of the sample claims to control income and expenses, which is important for any enterprise. Likewise, 80% say they are satisfied with the level of sale of their

products, which means the guarantee of continuity of activities, the possibility of expansion and better living conditions for the whole family.

Regarding the social pillar of sustainability, among the variables demonstrated in Table 5, an overall average of 72.75% of agreement was identified among the studied sample. In view of this level, it can be observed the social issue as the lowest overall level of agreement, considering the other pillars of sustainability already presented. According to Kaivo-oja *et al.* (2013), the social bias of sustainability provides for attention to socio-cultural factors, deriving the lead to the welfare of all, translating into the search for the protection of basic rights, such as health, education, security and equality (HANSMANN; MIEG; FRISCHKNECHT, 2012).

Table 5 – Description of the social pillar of sustainability

Social Variables	Medium of Agreement	% Overall
Encouraging participation in events in the local community	3.8	76
Active participation in some local social entity	3.8	76
Insertion in the administration of a local group	3.3	66
Encouraging participation in community work groups	3.2	64
High level of stress in relation to work	2.7	54
Concern about accidents at work	4.1	82
Attention to the quality of personal and family life	4.6	92
More attention with the social than with the economic and environmental	3.6	72

Source: Data Research.

It can be observed the variable relates attention to the quality of personal and family life is one of the main characteristics in terms of agreement (92%). Another issue to be highlighted is that only 54% of respondents identify themselves with a high level of stress in relation to work, which is positive and reflects the possibility of carrying out their activities satisfied and enjoying life with more quality.

As for the evidence demonstrated for the three pillars of sustainability, it was seen the family of agro-industries, demonstrated in the sample, have a greater attention to environmental aspects. Justifying, 80% of the respondents said they directed more attention to the environment, than to economic and social factors; 76% believe the economic issues are more relevant than environmental and social ones; and 72% say they pay more attention to social issues than to environmental and economic ones. This greater attention to environmental issues may be related to the fact they are governed by legislation and are

mandatory, as is the case with knowledge of environmental infractions and the preservation of forests and springs

Considering these aspects about sustainability, it can be inferred there is a partial balance between the three pillars – environmental, economic and social – among the analyzed agro-industries. It has to be enhanced, how the economic dimension is above the others, and may be the result of the conventional economic view that prevails in society, and thus, it is no different with family agro-industries. From the results found for sustainability, we sought to relate them to the evidence of social innovation, which is described below.

5.3 RELATION BETWEEN SOCIAL INNOVATION AND SUSTAINABILITY IN FAMILY AGRO-INDUSTRIES

The association between social innovation and sustainability was based on the analysis of the correlation between the indicators of the independent (social innovation) and dependent (sustainability) variables, considering the instrument (questionnaire) applied together to the family agro-industries in the sample of this study. For this association, the mean of each of the constructs was considered, using the Spearman correlation coefficient to determine the relationship between the variables studied. The use of this method test was adopted because it is indicated for non-normal distributions (PESTANA; GAGEIRO, 2003), as is the case in this study.

Chart 2, 3 and 4 show the levels of significance of the observed bivariate correlation coefficients. In order to analyze the strength of the correlation, we took what Pestana and Gageiro (2003) establish, specifically, less than 0.2: very low association; 0.2 to 0.39: low; 0.4 to 0.69: moderate; 0.7 to 0.89: high; 0.9 to 1.0: very high.

In reference to the correlation between social innovation indicators and environmental sustainability indicators, there were 26 significant associations (at 0.005 * and 0.001 **) out of the possible 132. Those associations with more significance were:

- search for new ways of carrying out activities with knowledge of the laws and regulations resulting from environmental infractions and attention and prevention of environmental accidents;

- concern with social problems in the surroundings (unemployment, pollution, violence) with care for the soil, preservation of springs and forests and attention to the environment much more than the economic and social;

Chart 2 – Correlation between social innovation and environmental indicators

	Environmental Indicators											
Social Innovation	Control of the amount of water consumed in activities	Knowledge of laws and regulations arising from environmental infractions	Control of the amount of electricity consumed	Reuse water	Reuse Residues	Participation in updates on preserving the environment	Concern with the environmental accidents	Attention to toxic waste generated	Soil Care	Preservation of springs and forests	Disposal of generated waste	Attention to the environment, more than economic and social
Good level of relationship with the other agro-industries	0.380	0.237	0.252	0.538	0.439	0.459	0.623	0.637	0.344	0.402	0.323	0.378
Search for new forms to do the activities	0.624	0.003**	0.193	0.096	0.334	0.059	0.011*	0.553	0.108	0.922	0.370	0.494
Care about society's problems	0.122	0.755	0.624	0.592	0.435	0.307	0.084	0.201	0.011*	0.001**	0.365	0.047*
Search for change in the society	0.078	0.907	0.331	0.448	0.099	0.767	0.521	0.081	0.964	0.627	0.843	0.446
Develop products for people's quality of life	0.093	0.181	0.162	0.371	0.829	0.684	0.153	0.992	0.262	0.953	0.176	0.364
Depends on the support of the public authority for success	0.017	0.016*	0.963	0.528	0.696	0.038*	0.074	0.133	0.816	0.266	0.864	0.841
Importance of the support of the Universities/College	0.042*	0.758	0.011*	0.213	0.006**	0.027*	0.003**	0.063	0.010*	0.061	0.063	0.001**
Importance of support from the syndicate and associations	0.104	0.911	0.050	0.156	0.021*	0.890	0.001**	0.001**	0.000**	0.158	0.618	0.020*
Dependence on the relationship with other agro-industries	0.377	0.391	0.776	0.214	0.428	0.539	0.575	0.469	0.817	0.883	0.069	0.127
Cooperates with other agro-industries	0.414	0.216	0.259	0.016*	0.145	0.005**	0.239	0.416	0.365	0.844	0.669	0.094
Commitment to internal and external change	0.125	0.106	0.095	0.186	0.777	0.026*	0.061	0.101	0.019*	0.053	0.001**	0.025*

* POSITIVE correlation significant, considering P = 0.05. ** POSITIVE correlation significant, considering P = 0.01. Source: Data Research.

- dependence on the support of local, state or federal public authorities for their success with controlling the amount of water consumed in the activities, knowledge of the laws and regulations resulting from environmental infractions and participation in courses, seminars and lectures on environmental preservation;

- cooperation with other agro-industries with water reuse and participation in courses, seminars and lectures on environmental preservation;

- importance of support from universities and colleges with control of the amount of water consumed in activities, control of the amount of electricity consumed, reuse of waste, participation in courses, seminars and lectures on preserving the environment, care and prevention of environmental accidents, care with the soil and more attention to the environment than the economic and social;

- importance of support from unions and associations with waste reuse, attention and prevention of environmental accidents, attention to any toxic waste generated, care for the soil and attention to the environment much more than the economic and social;

- agro-industry is committed to internal (its agro-industry) and external (society) change with participation in courses, seminars and lectures on environmental preservation, care for the soil, proper disposal of generated waste and attention to the environment much more than the economic and social.

Regarding the correlations between social innovation and the environmental aspects of sustainability, it is possible to highlight some of them due to the greater frequency of relationships. The first of these is the support of universities and colleges obtained with a direct correlation with seven environmental variables. This correlation reinforces the postulate by Rollin and Vicent (2007) when they point to the university as a great partner in the processes of experimenting with social innovations, in addition, the community is understood as a recipient of the scientific and technological knowledge created in universities.

Another variable of social innovation is the five correlations with environmental variables was the support of unions and associations. This type of organization is highlighted in the social innovation process and its good correlation with environmental variables can

enhance its role in this context, as already pointed out by Tardif and Harrisson (2005) and Maurer and Silva (2014) as important social actors in the process of social innovation, especially for changes.

In terms of the correlation between social innovation indicators and economic sustainability indicators, there were 11 significant associations out of 66 possible. Chart 3 shows significant associations, followed by their explanation.

Chart 3 – Correlation between social innovation and economic indicators

	Economic Indicators					
Social Innovation	Satisfaction with the level of product sales	Satisfaction with profitability	Concern about the level of indebtedness	Acceptable return on capital invested	Control of income and expenses	Attention to the economic, more than environmental and social
Good level of relationship with the other agro-industries	0.025*	0.071	0.583	0.135	0.021*	0.988
Search for new forms to do the activities	0.083	0.038*	0.993	0.038*	0.123	0.426
Care about society's problems	0.571	0.672	0.995	0.584	0.010**	0.086
Search for change in the society	0.298	0.716	0.385	0.256	0.003**	0.942
Develop products for people's quality of life	0.226	0.562	0.855	0.180	0.429	0.551
Depends on the support of the public authority for success	0.291	0.462	0.720	0.210	0.455	0.968
Importance of the support of the Universities/College	0.118	0.110	0.446	0.759	0.069	0.267
Importance of support from the syndicate and associations	0.026*	0.056	0.004**	0.887	0.178	0.416
Dependence on the relationship with other agro-industries	0.199	0.766	0.941	0.762	0.802	0.148
Cooperates with other agro-industries	0.018*	0.109	0.563	0.580	0.010*	0.370
Commitment to internal and external change	0159	0.035*	0.834	0.595	0.051	0.666

* POSITIVE correlation significant, considering P = 0.05. ** POSITIVE correlation significant, considering P = 0.01.
Source: Research Data.

- level of relationship with other agro-industries in the region with satisfaction with the level of product sales and control of revenues and expenses;

- search for new ways of doing activities with satisfaction with profitability and acceptable return on the capital invested;

- concern about social problems in the surroundings (unemployment, pollution, violence) with control of income and expenses;

- seeks change in the society in which it operates with control of revenues and expenses;

- importance of support from unions and associations with satisfaction with the level of sale of products and concern with the level of indebtedness;

- cooperation with other agro-industries with satisfaction with the level of product sales and control of income and expenses;

- agro-industry is committed to internal (its agroindustry) and external (society) change with satisfaction with profitability.

In these correlations, what is most evident is the correlation of the economic construct with its variable dealing with the control of income and expenses. This variable was correlated with four variables of social innovation, indicating the importance of what is central to any project, action or enterprise, which means, financial control.

This result corroborates with what was exposed by Murray, Caulier-Grice and Mulgan (2010), who stated the maintenance of a business as an indication of social innovation, there must be the improvement of ideas and the identification of income streams to ensure sustainability long-term financial position of the company, social enterprise or charity will take innovation forward. In this same line Buckland and Murillo (2013) and Omobhude and Chen (2019) deal with management efficiency and effectiveness to ensure financial viability.

In reference to the correlation between social innovation indicators and social sustainability indicators, there were 20 significant associations out of 88 possible, according to the data in Chart 4. The associations with more significance were:

Chart 4 – Correlation between social innovation and social indicators

	Social Indicators							
Social Innovation	Encouraging participation in events in the local community	Active participation in some local social entity	Insertion in the administration of a local group	Encouraging participation in community work groups	High level of stress in relation to work	Concern about accidents at work	Concern to the quality of personal and family life	Attention to the social, more than economic and environmental
Good level of relationship with the other agro-industries	0.720	0.483	0.762	0.905	0.848	0.876	0.071	0.858
Search for new forms to the activities	0.033*	0.312	0.733	0.037*	0.167	0.090	0.003**	0.258
Care about society's problems	0.397	0.060	0.797	0.843	0.525	0.363	0.007**	0.058
Search for change in the society	0.717	0.572	0.895	0.132	0.805	0.273	0.657	0.512
Develop products for people's quality of life	0.868	0.464	0.353	0.229	0.107	0.755	0.003**	0.642
Depends on the support of the public authority for success	0.119	0.207	0.839	0.202	0.865	0.944	0.360	0.786
Importance of the support of the Universities/ College.	0.017*	0.030*	0.600	0.009**	0.071	0.005**	0.002**	0.000**
Importance of support from the syndicate and associations	0.032*	0.228	0.124	0.924	0.120	0.087	0.232	0.121
Dependence on the relationship with other agro-industries	0.722	0.311	0.492	0.918	0.183	0.027*	0.682	0.841
Cooperates with other agro-industries	0.023*	0.139	0.013*	0.024*	0.845	0.433	0.410	0.796
Commitment to internal and external change	0.009**	0.141	0.315	0.207	0.085	0.035*	0.032*	0.015*

* POSITIVE correlation significant, considering P = 0.05. ** POSITIVE correlation significant, considering P = 0.01. Source: Data Research.

- search for new ways of doing activities with incentives to participate in events in the local community, incentives to participate in community efforts and attention to the quality of personal and family life;

- concern with social problems in the surroundings (unemployment, pollution, violence) with attention to the quality of personal and family life;

- importance of support from universities and colleges with incentive to participate in events in the local community, active participation in some local social entity, incentive to participate in community work groups, concern about accidents at work, concern to the quality of personal and family life and attention with the social much more than the economic and environmental;

- search for the development of products inducing to improve people's quality of life with care to personal and family quality of life;

- importance of support from unions and associations with incentives to participate in events in the local community;

- dependence on the relationship with the other agro-industries for their success with concern about accidents at work;

- cooperation with other agro-industries with incentives for participation in events in the local community, insertion in the administration of a local group and incentives for participation in community efforts;

- agro-industry is committed to internal (agro-industry) and external (society) change, with incentives to participate in events in the local community, concern about accidents at work, concern to the quality of personal and family life and attention to the very social more than the economic and environmental.

The correlations between the variables of the social innovation construct and the variables of the social construct of sustainability allow to highlight the ones with the highest frequency. In this analysis, the variable support from universities and colleges also showed six correlations, reinforcing the results already presented in the discussion of the environmental

dimension, making evident the importance of these institutions for social innovation and sustainability.

Two other variables of the social construct of sustainability showed five correlations each with the construct of social innovation. These variables are: 'encourage participation in events in the local community' and concern to the quality of personal and family life'.

The incentive to participate in events in the local community has a correlation with social innovation, presupposes the theme of community participation present in the theoretical framework in an incisive way. Authors such as Tardif and Harrisson (2005), Maurer and Silva (2014) and Nunes *et al.* (2017) already highlighted participation as a central element of social innovation. The active participation of beneficiaries is also highlighted by Cloutier (2003) as an essential condition for the creation and implementation of social solutions. Therefore, the correlation confirms what is pointed out by the theory, that the participation of the community represented here by the community events, for example, may indicate a predisposition for involvement and the consequent success in social innovation initiatives.

Attention to the quality of personal and family life is one of the main purposes of social innovation. Cloutier (2003) claim the objective as a development with a view to improving the quality of life, as well as the concepts of social innovation are directed to this element as central. Therefore, the quality of personal and family life is an excellent indicator of pre-disposition for social innovations, as observed in this study.

5 FINAL CONSIDERATIONS

The objective of this study was to identify the relationship between social innovation and sustainability in family agro-industries allocated to the Local Productive Arrangement of Agroindústria Familiar e Diversidade do Médio Alto Uruguai e do Rio da Várzea located in the northern region of the State of Rio Grande do Sul – Brazil. From data extracted from the questionnaire, initially each of these themes was independently analyzed, and afterwards, the evidence of both was correlated in order to identify which characteristics approximate.

The analysis of social innovation in family agro-industries was treated until then as a gap in the literature, due especially to this theme being considered in consolidation. In this

sense, interesting identifications were made regarding their dimensions in the family agro-industries analyzed in this study.

The role of certain institutions, whether university, unions or associations, considered as supporting the agro-industries in the development of their activities, was shown to be relevant. This communication of approximation and support between actors is fostered especially by the active way in which agro-industries are inserted in the productive arrangement now analyzed, and how this arrangement is structured in terms of governance. Likewise, it is important to report the role of the public entity as a propellant of the family agro-industries studied, through the investment facilitated the structuring of the productive arrangement, considered as a support organization for agro-industries.

Still as a characteristic of social innovation, the issue of relationships between family agro-industries in the local productive arrangement is mentioned. The characteristic of good relations is latent in the theory applied to social innovation, and in this study it was analyzed a large part of the sample agrees that it has a good level of relationship with the other agro-industries in the region, however, they are not unanimous in stating how they depend on their peers for success or have a full cooperative relationship with others.

In contrast with social innovation, the theme of sustainability has been discussed in the literature for a long time, based on different conceptions. It was analyzed during this research the sustainability through its economic, environmental, and social dimensions, and how to permeate social innovation in a transversal way, too seek the balance between these three dimensions. Also, the economic dimension is one of the greatest adherence to family agro-industries, and this result may be a consequence of the capitalist system present in society. It should be spotted, however, that the economic bias allows other achievements to be accomplished, such as those related to social and environmental issues reflects on the quality of life and the welfare of the families.

Observing the main themes of the study, it was concluded there are associations in the variables of the social innovation and sustainability construct, even with scores considered to be very low or low, as indicated by Pestana and Gageiro (2003). The social innovation variables showed 11 significant associations with the economic dimension of sustainability, 20 with the

social dimension of sustainability and 26 with the environmental dimension of sustainability. In this way, it would be possible to infer the relationships between the dimensions of social innovation and sustainability for this group of agro-industries provide positive results in economic, social and environmental aspects.

This research aimed to connect the themes of social innovation and sustainability, empirically analyzing family agro-industries. The fact attaches the themes of the productive arrangement, which they are part, focus on family agro-industries, which are differentiated forms of organization and produce economic results, but this is not the main purpose, as we could see in the research evidence, such as, the search for quality of life of the individual and the family and attention to issues of preservation of the environment. As a suggestion for future research, we suggest the analysis of these themes in another sample of family agro-industry, whether or not belonging to some local productive arrangement, searching to recognize similarities and differences from those found in this article.

REFERENCES

ABOELMAGED, M. The drivers of sustainable manufacturing practices in Egyptian SMEs and their impact on competitive capabilities: a PLS-SEM model. **Journal of Cleaner Production**, v. 175, p. 207-221, 2018.

AVELINO, F.; WITTMAYER, J.; HAXELTINE, A.; KEMP, R.; O'RIORDAN, T.; WEAVER, P.; LOORBACH, D.; ROTMANS, J. Game-changers and transformative social innovation: the case of the economic crisis and the new economy, **TRANSIT working paper**, Brussels: European Commission, 2014.

BARBIERI, J. C. Organizações inovadoras sustentáveis. In: BARBIERI, J. C.; SIMANTOB, M. A. (Org.). **Organizações inovadoras sustentáveis**: uma reflexão sobre o futuro das organizações. São Paulo: Atlas, 2007.

BARBIERI, J. C.; VASCONCELOS, I. F. G.; ANDREASSI, T.; VASCONCELOS, F. C. Inovação e sustentabilidade: novos modelos e proposições. **RAE-Revista de Administração de Empresas**, v. 50, n. 2, p. 146-154, 2010.

BESSANT, J.; TIDD, J. **Innovation and entrepreneurship**. John Wiley & Sons, Chichester, 2007.

BOUCHARD, M. J. Social innovation, an analytical grid for understanding the social economy: the example of the Quebec housing sector. **Service Business,** v. 6, n. 1, p. 47 - 59, 2012.

BUCKLAND, H.; MURILLO, D. **Antena de innovación social**: vías hacia el cambio sistémico: ejemplos y variables para la innovación social. Barcelona: ESADE. Instituto de Innovación Social, 2013.

CLOUTIER, J. Qu'est-ce que l'innovation sociale? **Crises**, ET0314. 2003. Disponível em: <www.crises.uqam.ca>. Acesso em: 17 jun. 2014.

COOPER, D. R.; SCHINDLER, P. S. **Métodos de pesquisa em administração**. Porto Alegre: Bookman, 2016.

CORREIA, S. E. N.; OLIVEIRA, V. M.; FEITOSA, M. J. S.; GOMÉZ, C. R. P. Inovação social para o desenvolvimento sustentável: um caminho possível. **Administração Pública e Gestão Social**, v. 10, n. 3, p. 199-212, 2018.

COSTA, A. M.; PATIAS, T. Z.; DE MARCO, D. Arranjos produtivos locais e o desenvolvimento ousando mudar as estruturas estabelecidas: uma análise seniana do APL do leite e dos assentamentos em Santana do Livramento/RS. In: PINHEIRO, V. F.; PAIVA, M. J. G.; MORAIS, J. M. L. (Orgs.) **Gestão do território, políticas locais e desenvolvimento sustentável**. Crato-CE: URCA, 2014.

CRESWELL, J. W.; POTH, C. N. **Qualitative inquiry and research design**: Choosing among five approaches. Sage publications, 2016.

CUNHA, J.; BENNEWORTH, P. Universities' contributions to social innovation: towards a theoretical framework. In: European Urban Research Association (EURA) Conference, 2013, Enschede, The Netherlands. **Anais…** Enschede, The Netherlands, 2013.

DAWSON, P.; DANIEL, L. Understanding social innovation: a provisional framework. **International Journal of Technology Management,** v 51, n. 1, p. 9-21, 2010.

DIONISIO, M.; VARGAS, E. R. Corporate social innovation: a systematic literature review. **International Business Review**, v. 29, n. 101641, p. 1-12, 2020.

ELKINGTON, J. **Canibals with forks**: the triple bottom line of 21 century business. Oxford: Capstone Publishing, 1997.

FAIRWEATHER, G. W. **Methods for experimental social innovation**, New York: John Wiley, 1967.

FREITAS, H.; OLIVEIRA, M.; SACCOL, A. Z.; MOSCAROLA, J. O método de pesquisa survey. **Revista de Administração**, v. 35, n. 3, p. 105-112, 2000.

GASPARIN, M.; GREEN, W.; LILLEY, S.; QUINN, M.; SAREN, M.; SCHINCKUS, C. Business as unusual: A business model for social innovation. **Journal of Business Research**, In Press, 2020.

GOMES, C. M.; KNEIPP, J. M.; KRUGLIANSKAS, I.; BARBIERI-ROSA, L. A.; BICHUETI, R. S. Management for sustainability in companies of the mining sector: an analysis of the main factors related with the business performance. **Journal of Cleaner Production**, v. 84, n. 1, p. 84-93, 2014.

HAY, J.; MIMURA, N. Supporting climate change vulnerability and adaptation assessments in the Asia-Pacific region: an example of sustainability science. **Sustainability Science**, v. 1, p. 23-35, 2006.

HANSMANN, R.; MIEG, H. A.; FRISCHKNECHT, P. Principal sustainability components: empirical analysis of synergies between the three pillars of sustainability. **International Journal of Sustainable Development & World Ecology**, v. 19, n. 5, p. 451–459, **2012**

HAXELTINE, A., AVELINO, F., WITTMAYER, J., KEMP, R., WEAVER, P., BACKHAUS, J.; O'RIORDAN, T. **Transformative social innovation: a sustainability transitions perspective on social innovation**. In: NESTA CONFERENCE SOCIAL FRONTIERS: The Next Edge of Social Science Research, 14-15 November, London, UK, 2013.

HOWALDT, J.; KOPP, R. Shaping social innovation by social research. In: FRANZ, H-W.; HOCHGERNER, J.; HOWALDT, J. **Challenge social innovation**: potentials for business, social entrepreneurship, welfare and civil society. Springer: Berlin/Heidelberg, p. 43-56, 2012.

KAIVO-OJA, J.; PANULA-ONTTO, J.; VEHMAS, J.; LUUKKANEN, J. Relationships of the dimensions of sustainability as measured by the sustainable society index framework. **Journal of Sustainable Development & World Ecology**, v. 21, n. 1, p. 39-45, 2013.

MAURER, A. M.; SILVA, T. N. Dimensões analíticas para identificação de inovações sociais: evidências de empreendimentos coletivos. **BBR – Brazilian Business Review**, v. 11, n. 6, p. 127 - 150, 2014.

MEHMOOD, A. Institutional forms of social innovation. International **Journal of Innovation and Sustainable Development**, v. 10, n. 2, p. 1-16, 2016.

MEHMOOD, A.; PARRA, C. **Social innovation in an unsustainable world**. In: MOULEART et al. The international handbook in social innovation: collective action, learning and transdisciplinary research. Edward Elgar Publishing: Massachusetts, 2013.

MULGAN, G.; TUCKER, S.; ALI, R.; SANDERS, B. **Social innovation**: what it is, why it matters and how it can be accelerated. OXFORD Saïd Business School, 2006. Disponível em: <http://www.sbs.ox.ac.uk/>. Acesso em: 24 jun. 2014.

MURRAY, R.; CAULIER-GRICE, J.; MULGAN, G. 2010. **The open book of social innovation**. London, NESTA/The Young Foundation. Disponível em: <www.nesta.org.uk/publications/assets/features/the_open_book_of_social_innovation>. Acesso em: 20 jun. 2014.

NASCIMENTO, E. P. Trajetória da sustentabilidade: do ambiental ao social, do social ao econômico. **Estudos Avançados**, v. 26, n. 74, p. 51 - 64, 2012.

NAWAZ, W.; KOÇ, M. Development of a systematic framework for sustainability management of organizations. **Journal of Cleaner Production**, v. 171, n. 1, p. 1255-1274, 2018.

NUNES, N. A.; CASAGRANDE, J. L.; RAMOS, M. M. G.; SANTOS, A. A. P.; CORSEUIL, L. Participação comunitária como prática de inovação social: um estudo de caso no centro educacional marista lúcia mayvorne. **Revista Eletrônica de Estratégia & Negócios**, v. 10, n. 2, p. 154-180, 2017.

OMOBHUDE, C.; CHEN, S. Social Innovation for Sustainability: the case of oil producing communities in the niger delta region. **Sustainability**, v. 11, n. 6767, p. 1-26, 2019.

OSBURG, T. **Social innovation to drive corporate sustainability**. Springer: Berlin, 2013.

PATIAS, T. Z; BOBSIN, D.; GOMES, C. M.; LISZBINSKI, B.B.; DAMKE, L. I. Family agro-industry clusters from the social innovation perspective. **RAM-Revista de Administração Mackenzie**, v. 17, n. 6, p. 191-215, 2016.

PESTANA, M. H.; GAGEIRO, J. N. **Análise de dados para ciências sociais**: a complementaridade do SPSS, Edições Silabo: Lisboa, 2003.

PICCAROZZI, M. Does social innovation contribute to sustainability? The case of italian innovative start-ups. **Sustainability**, v. 9, n. 2376, p. 1-28, 2017.

PISANO, U.; LANGE, L.; BERGER, G. (2015). Social innovation in Europe: an overview of the concept of social innovation in the context of European initiatives and practices. ESDN Quarterly Report, n. 36, 2015.

POL, E.; VILLE, S. Social innovation: Buzz word or enduring term? **The Journal of Socio-Economics**, v. 38, n. 6, p 878-885, 2009.

ROLLIN, J.; VICENT, V. **Acteurs et processus d'innovation sociale au Québec**. Québec: Université du Québec, 2007.

TARDIF, C.; HARRISSON, D. Complémentarité, convergence et transversalité: la conceptualisation de l'innovation sociale au CRISES. **Cahiers du CRISES**. Québec, 2005.

TIDD, J., BESSANT, J. **Managing innovation**: integrating technological, market and organizational change. 5rd Edition, John Wiley, Chichester, UK, 2013.

VERDI; A.R.; SILVA, P. R.; FRANCISCO, V. L. F. S.; AMARO, A. A.; BAPTISTELLA, C.S. L. Arranjo produtivo local: identificação das possibilidades da viticultura na região de Campinas. **Agricultura em São Paulo**, v. 52, n. 2, p. 73-86, 2005.

WARNOCK, R. **Harnessing the power of social innovation to drive the Northern Ireland economy – Final draft**. Department of Enterprise, Trade and Investment – DETI, 2014. Disponível em: <http://outhouseconsulting.co.uk/research/4575037824>. Acesso em: 15 jan. 2015.

WORLD COMMISSION ON ENVIRONMENT AND DEVELOPMENT. **Our Common Future**. Oxford: Oxford University Press, 1987.