sustainability

MDPI

Article

Young People's Perceptions about the Difficulties of Entrepreneurship and Developing Rural Properties in Family Agriculture

Cristina Keiko Yamaguchi [1,2], Stéfano Frizzo Stefenon [3,*], Ney Kassiano Ramos [1,4], Vanessa Silva dos Santos [1], Fernanda Forbici [4], Anne Carolina Rodrigues Klaar [5], Fernanda Cristina Silva Ferreira [2], Alessandra Cassol [2,6], Márcio Luiz Marietto [7], Shana Kimi Farias Yamaguchi [8] and Marcelo Leandro de Borba [2,9]

1 Environment and Health Graduate Program, Environment and Health Department, University of Planalto Catarinense (UNIPLAC), Av. Castelo Branco 170, Universitário, Lages 88509-900, Brazil; criskyamaguchi@gmail.com (C.K.Y.); kassiano@gmail.com (N.K.R.); vaanessasilva2001@gmail.com (V.S.d.S.)
2 Associate Graduate Program in Productive Systems, Productive Systems Department, University of Planalto Catarinense (UNIPLAC), Av. Castelo Branco 170, Universitário, Lages 88509-900, Brazil; prof.fernanda@uniplaclages.edu.br (F.C.S.F.); alessandracassol.adm@gmail.com (A.C.); marcelo.leandro@univille.br (M.L.d.B.)
3 Production and Systems Engineering Department, Santa Catarina State University (UDESC), R. Paulo Malschitzki 200, Zona Industrial Norte, Joinville 89219-710, Brazil
4 Computer Department, Center for Agroveterinary Sciences (CAV), Santa Catarina State University (UDESC), Av. Luiz de Camões 2090, Conta Dinheiro, Lages 88520-000, Brazil; fernandaforbici@gmail.com
5 Faculty of Technological Graduation, National Service of Industrial Learning (SENAI), R. São Paulo 1.147, Victor Konder, Blumenau 89012-001, Brazil; carolklaar@gmail.com
6 Graduate Program Professional in Business Administration, University of Contestado (UnC), Av. Nereu Ramos 1071, Mafra 89306-076, Brazil
7 Center of Research in International Business & Strategy (globADVANTAGE), Instituto Politécnico de Leiria (ESTG), Morro do Lena, Alto do Vieiro, 2411-901 Leiria, Portugal; marcioluizmarietto@gmail.com
8 Graduate Program in Food Engineering and Science, Biochemical Engineering Laboratory (LEB), School of Chemistry and Food of the Federal University of Rio Grande (FURG), Av. Itália km 8, Rio Grande 96203-900, Brazil; shanayamaguchi@gmail.com
9 Technological Innovation Park (INOVAPARQ), Joinville 89219-600, Brazil
* Correspondence: stefano.stefenon@udesc.br

Received: 11 September 2020; Accepted: 19 October 2020; Published: 22 October 2020

Abstract: This article aims to understand the perceptions of young rural entrepreneurs about the difficulties in investing in family farms in which they work. Ninety-eight people were interviewed at the event "Meeting of Young Entrepreneurs of the Rural Environment of Santa Catarina: the rural youth leading the sustainable development", held in May 2019. The methodology applied in this paper is qualitative and quantitative, through a bibliographic review and a numerical analysis on work conditions and workers' profile. A brief theoretical background is presented to facilitate the understanding of the results and their relation to family farming, entrepreneurship and its reality in Brazil. As a result, the economic issue was pointed out with 34% of the cases, as a hinter to undertake in rural properties, followed by the lack and low qualification of the workforce available with 12.6% of the cases and the lower selling price for the producer with 7.6% of the cases.

Keywords: family farming; entrepreneurship; young entrepreneur

1. Introduction

Family farming is characterized by a system where property management is exercised by the producer and the workforce is predominantly family. This system has been gaining great importance in the national scenario in recent years, as, according to Picolotto [1], it is related to sustainable development, job and income generation, food security and local development, as is considered to be more profitable socially, economically and environmentally in relation to the model of employer agriculture.

This area also uses the concept of entrepreneurship, as is seen in the union of skills and abilities, leading to the recognition of opportunities and consequently creating something, aiming for good economic development and social appreciation. Creating companies, innovating processes or organizational products is a result, in large part, of entrepreneurs, as this profile of people focuses on the needs imposed by the current market, observing trends and exploring new opportunities [2].

Issues, such as energy efficiency, are being widely discussed in several areas to improve sustainability [3–6]. Currently, with globalization and widespread technological development and, as a consequence, an increasingly disputed market, endeavoring in all spheres to remain competitive in the market, including family farming, is of paramount importance.

Brazil is a developing country, therefore, the number of young entrepreneurs has been increasingly rising [7]. According to Bulgacov et al. [8], Brazilian young people culturally enter the labor market earlier, when compared to developed countries, to guarantee their survival and training. For this reason, young people see entrepreneurship as an opportunity and often a necessity.

On the other hand, it is known that endeavoring in Brazil is not an easy task: the most challenging aspects are the lack of "government policies and programs", "financial support" and "political context and economic crisis", among others [9].

Knowing the importance of entrepreneurship in family farming, the authors sought to know the difficulties to endeavor in family farming, considering the perception of young rural entrepreneurs. Therefore, this study aims to answer the following question: what are the difficulties to endeavor and develop the rural properties of family farmers, in the perception of young rural entrepreneurs?

The contributions of this paper for Family Agriculture research are summarized in the following list:

- This article contributes to the scientific knowledge in the sociological field by revealing how young people from rural areas in the mentioned region relate to the difficulties they face and, thus, allows us to imagine how they can be minimized. The clear view of its reality allows new studies on public policies and on rural development planning to be developed and implemented, which undoubtedly ends up affecting the economy of the area.
- The second contribution is anthropological and also sociological, since it centers on broadening the understanding of a rural exodus, at a time when modern and technological facilities attract this age group of young people to the city, away from the property and those who have the most empirical knowledge about rural production. These are usually their parents or guardians, and who undoubtedly have the deepest bond with the land and whose livelihoods are so intimate. Urban planning agencies can use this information to develop city and country territorial occupation policies.
- The third contribution is related to reviewing and rethinking the focus of technical and higher education courses on land management and livestock production, adapting them to the needs and mentality of new generations, in which practicality needs to align with the empirical knowledge learned in the family. The new needs to be accepted by the elders, so that the young person can implement changes where necessary, and the latter must maintain the tradition, where it is most suitable.

The organization of this paper is as follows: Section 2 presents the datasets adopted in this paper. Section 3 brings a brief description of the adopted methods in the forecasting framework. Finally,

Section 4 concludes the paper with final considerations, limitations of the study and proposals of research directions.

2. Theoretical Reference

The terminology family farming came to be used in Brazil in the mid-1990s. This action is considered late, when compared to other developed countries [10]. However, this fact is related to other national factors, such as the policy, in which during this period, at the national level, there were changes, such as the opening of trade, lack of credit for agriculture and the reduction in the price of agricultural products for agriculture export. The constitution of the terminology family farming reflected as a refuge for producers who were not characterized as small rural producers, such as settlers, tenants, partners, integrated into the agro-industry. This factor is of paramount importance when considered that, until the beginning of the 1990s, Brazil did not compose any special public policy, focusing on the population of the Brazilian rural area, with national scope [11].

2.1. Family Farming

The importance of family farming on development in Brazil has become a topic of discussion in recent years. Guanziroli and Cardim [12] highlight the strong relationship with sustainable development, job and income generation, food security and local development. The increasing number of farmers settled by agrarian reform, as well as the creation of the Pronaf (National Program for the Strengthening of Family Farming) in 1996, with the purpose of providing agricultural credit and institutional support to small rural producers, are also issues that encourage this debate in society currently [13].

Many stages of the productive processes of family farmers are handcrafted, depending on their workforce efforts. In Figure 1, an example of work done by family farmers is presented. The Refloramaz project is an example of work performed by family farmers for Forest Restoration in the Eastern Amazon. This project is carried out through a partnership between Brazilian Agricultural Research Corporation (EMBRAPA), Federal University of Pará (UFPA) and Center for International Cooperation in Agronomic Research for Development (CIRAD). The Refloramaz project presents forest recovery experiments of 17 farming families in northern Brazil [14].

Figure 1. Handmade Work Done by Family Farmers [14].

Guanziroli and Cardim [12] define family farming as a concept contemplating the following conditions simultaneously: "the direction of the establishment's work is exercised by the producer; family work is more effective to contracted work". Thus, it is clear that in order to be characterized as such, in addition to the management of the property being done by the family, it is necessary that the labor used on the property is almost exclusively done by family [15]. This makes the model considered more socially, economically and environmentally beneficial (as it is more democratic, efficient and sustainable) compared to the model of employer agriculture.

In Brazil, family farming is a relatively new expression, as it was put in use in the mid-1990s, that is late, when compared to developed countries [16]. Picolotto [1] states that the construction of this category in Brazil occurred by "a set of experiences, reflections and initiatives by different stakeholders". When family farming became the object of specific State policies and academic work, it gained appreciation for its organs and the union organizations in the field adopted it as a political identity. In this way, the complementary relationships among academic research, state and international agencies and actions to claim unionism placed the family farmer at the top of rural development actions at the time [17–20].

Family farming, although it is considered a relatively new term, has a long-standing application in its activity. Agricultural production from family farming has great relevance in the national economy. In the agricultural scenario, they present themselves as the vast majority; however, they have the least amount of land. In order to assist in the development of family farming, government programs for the consumption of products were developed. This population has a wealth of knowledge, arising mainly from sharing from father to son. However, with the advent of knowledge and access to new knowledge, there is already the insertion of scientific knowledge. The agricultural census conducted surveys with groups of family farmers, where it identified 4,367,902 establishments, which constituted 84.4% of the establishments in Brazil. However, despite the large representation, only 24.3% of the entire area occupied for agricultural activity belonged to family farmers [21].

One can say that family farming has different contexts and interpretations according to location, culture, development and other social factors. In some places, family farming is a recognized, well developed and part of the market economy, in others it remains archaic and subsistent, in addition to having no incentive, often because the "family farmer" is still linked to the image of the disadvantaged and underestimated [22]. The main protagonists to modify this vision were and are rural union organizations, since the process of incorporating family farming has a political identity. The condition of social inferiority referred to small producers must be overcome, restoring them socially and politically as characters and active participants in the contemporary world and in development [23–25].

The active participation of all family members strengthens family farming and allows knowledge to be passed on from generation to generation, maintaining the family tradition in certain crops. There are tax reduction incentives to encourage families to stay in the area, one example being the reduced electricity tariff for residents of rural properties. There are specific studies on the reliability of energy systems in rural electric power grids [26–30].

The formulation of the terminology family farming is relevant for producers that did not fit into any segment supported by law [11]. In Brazil, Law 11,326 of 24 July 2006, classified as a family farmer and rural family entrepreneur one who practices activities in the rural environment, simultaneously meeting the following requirements:

- Do not hold, in any capacity, an area larger than four fiscal modules;
- Use predominantly family labor in the economic activities of your establishment or enterprise;
- Have a family income predominantly originating from economic activities linked to the establishment or enterprise itself;
- Run your establishment or enterprise with your family.

In 2011, point III was changed by law No. 12,512, of 2011:

- Have a minimum percentage of family income originating from economic activities in your establishment or enterprise, in the manner defined by the Executive Branch.

2.2. Entrepreneurship

Entrepreneurship is considered the union of skills and abilities to recognize opportunities and, consequently, create something. This starts from limited capital and the expectation of obtaining earnings, aiming at good economic development and social recognition [31].

The initiative of creating a company and innovating processes or organizational products is largely due to entrepreneurs, who decide to take actions in challenging conditions, as a result of obligations imposed by the situation they find themselves in and focus on the needs imposed by the current market and technical domains, observing trends and exploring new opportunities in the environment [32]. Entrepreneurship has been gaining ground in Brazil and became a leader in the economy and demographic development; therefore, it is considered a tool with the ability to create jobs and income for the population, in addition to offering new products and stimulating the creation of small businesses for local representation [33].

2.3. Difficulties in Undertaking in Family Farming

Family farming has been changing in Brazil over time. In addition, it has been adapting to socioeconomic changes resulting from the increase in urban subdivision in recent years and intensifying social inequality between city and the countryside [34]. Consequently, according to these authors, "the concentration of most of the Brazilian population in the metropolitan areas has led the media and scholars to give little attention to what happens in the rural environment", which ends up lowering the quality of life in these areas. As a consequence, there is a smaller number of qualified workers to assist in specific activities on the property, or less demand for this area in general.

Rural Entrepreneurship is an expression that has started to be used more frequently recently; however, it is not considered new. Bernardo, Ramos, and Vils [35] consider the one who performs activities in the rural environment a Family Farmer and a Rural Family Entrepreneur, having the ability to generate a source of income in a perspective of development of the agricultural sector. When observing the Brazilian context, Tomei, Alves, and Souza [34] state that existing barriers hinder the transformation of the Family Farmer into a Rural Entrepreneur, emphasizing that the aspects experienced in rural properties become progressively competitive, facing daily increases in challenges and demands.

2.4. Improvement in Sustainability

The concept of family farming can be related to sustainability issues, considering that there is an incentive to reduce the use of pesticides for planting [36–38]. Therefore, it is necessary to encourage the production of organic foods, so that there are no major environmental impacts on the ecosystem in the areas close to the crops [39].

Family-run farms play a key role in trying to achieve environmental goals, in addition to economic and social development goals, by adapting current land use methods. The sustainable management of resources and the environment has proven to be one of the key components of these properties, given the strong relationship with a sense of belonging that the producer has with his land, which is not explicit in other types of production agrarian actors [40].

There was a time when the promotion of sustainable agriculture was focused on minimizing the impacts that the property had on the environment, and, for many small producers, this point was more of a burden on their already limited growth opportunities. Currently, it is understood that the challenge lies in balancing your needs with environmental obligations, such as dealing with carbon emissions, food and nutrition security, energy and water management, etc. According to [41], these practices are identified as agro-ecology, in which the integration of traditional knowledge with modern scientific practices is sought [42].

2.5. Methodology

This is a qualitative and quantitative study, of a descriptive and exploratory nature, which intends to deeply understand the issue through bibliographic research, analysis of material already published on this subject and thus composing the theoretical foundation [43]. The research was carried out through socioeconomic and descriptive data collection, which is normally used when the goal is to turn a phenomenon intelligible, justifying its reasons and which factors contemplate it [44].

This research was carried out at the University of Planalto Catarinense (UNIPLAC), in March 2019, with the participants of the event "Meeting of Young Entrepreneurs of the Rural Environment of Santa Catarina: the rural youth leading the sustainable development", who answered a questionnaire with questions that sought to raise their socioeconomic data and their perceptions about the issues covered in this article.

Data were tabulated and analyzed using the QDA Miner Lite, software designed for extracting content from speech and interview transcripts, aimed at qualitative and quantitative data analysis [45]. In qualitative research there is a link between the real world and the subject. The process is the main focus, giving greater importance to the meanings people give to things and life. In quantitative research, however, everything can be quantified—that is, to explain opinions and information through numbers to classify and analyze them [46–48].

QDA Miner software allowed for the identification of the information and perceptions of young people about their relationship with entrepreneurship in the family rural properties in which they are inserted. QDA Miner is a computer program, of the computer-assisted qualitative data analysis software (CAQDAS) type, which facilitates the coding and management of textual and graphical data, from interviews, questionnaires with open answers and transcriptions of focus groups, allowing for the qualitative analysis of these data, developed by the company Provalis Research.

The program works using codes, created by the user, that may or may not follow a hierarchical order. These codes, which define terms or ideas that the researcher seeks, are then assigned to a part of the text or graphic, seeking to describe or identify it, according to what the interlocutor wished to convey in his speech. This method makes it easier to find and measure subjective aspects or immersed in oral or written presentations, given freely. These codes can then later be retrieved in a variety of ways, either as statistics, tables, graphs or word clouds, and exported to other programs, with a text editor or spreadsheet. The resulting analysis allows for the extraction of quantitative and organized data from qualitative discourses.

3. Discussion and Analysis of Results

For the analysis, interviews were carried out with family farmers in order to understand the profiles of these professionals. The interview data were processed by the QDA Miner software that generated the information for the analysis that is presented in this section. The analysis aims to generate knowledge about family farmers.

According to [49], data are raw observations obtained from physical phenomena, being objective measures of the attributes of entities, such as people, events, things and places. Data are an essential raw material for creating information. The data have no inherent meaning and are composed of basic facts. Information is data converted into a meaningful and useful context for specific end users. The data are processed and placed in a context that gives it value. Information is a set of facts organized in order to have additional value. Finally, knowledge can be considered information with a purpose or a utility.

3.1. Characterization of Participants

The socioeconomic data of the participants and a brief report characterizing their profiles for a better understanding of the results are summarized below. Gender distribution of the members does not follow the national standard [7], of 52.3% women and 47.7% men, as shown in Figure 2.

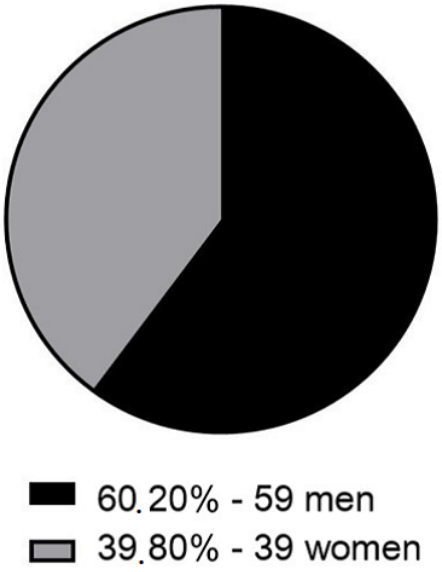

Figure 2. Gender of participants.

Most of the interviewees declare having incomplete high school (36.7%), following what was expected in relation to their average age, since the research was carried out in a group of young entrepreneurs, with a total of 18 men and 18 women. More details on these data are included in Figure 3.

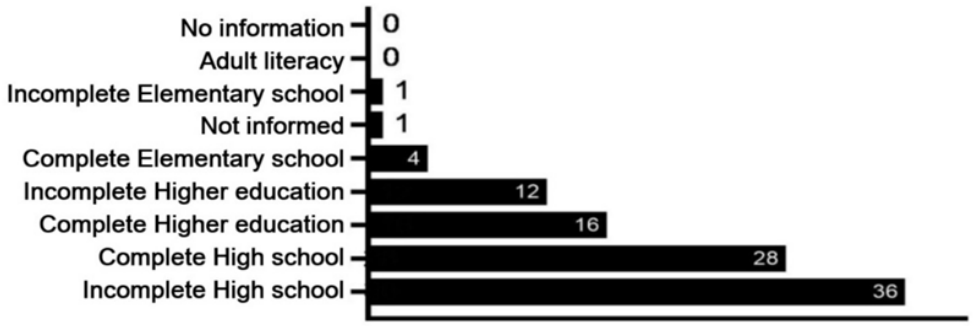

Figure 3. Educational background of participants.

A total of 16.3% of respondents claim to have completed a higher education course—the number follows the national trend for the year 2018 [50]. The participants are on average 19-years-old and the most frequent age was 17-years-old (fashion). The average age of men and women was similar, at 22.5 and 21.3 years, respectively. The six cities most cited as being of origin of those surveyed are available in Table 1, of a total of 20 municipalities in the Mountain Region of Santa Catarina.

Table 1. City of origin.

City	Origin	Percentage
Campo Belo do Sul	16	26.7%
Bocaina do Sul	12	20.0%
Palmeira	11	18.3%
Lages	8	13.3%
Anita Garibaldi	7	11.7%
Abdon Batista	6	10.0%

The most common cultures in their original properties are listed in Table 2, as shown below, with corn and livestock cultures as the main occupations.

Table 2. Types of culture.

Culture	Quotes	Percentage
Corn	55	35.0%
Livestock	30	19.1%
Bean	26	16.6%
Soy	20	12.7%
Pasture	11	7.0%
Vegetables	8	5.1%
Apple	7	4.5%

3.2. Difficulties in Entrepreneuring

In the search for subsidies to answer the main question of this work, one of the questions in the questionnaire was highlighted as the difficulties young people undertake. The question was specifically about the main difficulties faced when trying to undertake their original rural properties. The discursive responses were analyzed separately using the QDA Miner program, and the results are available in Table 3.

Table 3. Difficulties in entrepreneurship.

Class	Code	Occurrences	Percentage
Difficulties ǀ Financial	Economy	15	10.40%
Difficulties ǀ Financial	Low final price	11	7.60%
Difficulties	Lack of technical knowledge	11	7.60%
Difficulties ǀ Financial	Expensive implements	11	7.60%
Difficulties ǀ Financial	High production cost	10	6.90%
Difficulties ǀ Workforce	Lack of labor	9	6.30%
Difficulties	Lack of government support	8	5.60%
Difficulties	Poor road quality	8	5.60%
Difficulties	Lack of market	7	4.90%
Difficulties ǀ Workforce	Expensive labor	7	4.90%
Difficulties	Devaluation of agriculture	7	4.90%
Difficulties ǀ Financial	Credit	5	3.50%
Difficulties ǀ Financial	Financing	4	2,80%
Difficulties ǀ Financial	Expensive supplies	4	2.80%
Difficulties	Connectivity in rural areas	4	2.80%
Difficulties	Lack of cooperativism	3	2.10%
Difficulties ǀ Financial	Bureaucracy	3	2.10%
Difficulties ǀ Environment	Pests	2	1.40%
Difficulties ǀ Laws	Environmental	2	1.40%
Difficulties	Heavy duties	2	1.40%
Difficulties ǀ Workforce	Lack of qualified labor	2	1.40%
Difficulties	Communication with parents	2	1.40%
Difficulties ǀ Environment	Flood	2	1.40%
Difficulties ǀ Environment	Weather factors	2	1.40%
Difficulties ǀ Financial	High taxes	1	0.70%
Difficulties	Disclosure	1	0.70%
Difficulties ǀ Financial	High maintenance cost	1	0.70%

From the coding using the QDA Miner software, when the terms were defined from the transcription of the interviews and aimed to answer the proposed objective, the data in Table 3 describe subjective or immersed aspects of the exposures written in the questionnaires applied to the young family farmers. Table 3 highlights the main challenges faced by the young participants in the research with regard to entrepreneurship in rural properties.

Among the codes extracted in the qualitative analysis, the following challenges stand out in the perception of young farmers:

Firstly, the interviewees mentioned "economic" (34% of comments) as the main challenges to the development of rural properties. This appears to encompass other reasons, mentioned in other parts of the speeches, such as "credit", "financing", "expensive implements" and the "high cost of production" and/or "maintenance", which the authors believe can be grouped into the same group of problems for the producer, revealing itself as the main complaint—that is, of economic order.

The difficulty in obtaining "qualified labor" (12.6%), combined with its scarcity and high cost, also widely mentioned as problems, show the difficulty in finding personnel to work in the field, perhaps caused by the evasion of young people from rural areas and the consequent increase in the pay of those who support themselves through this work.

Thus, the "low final price" of products at the time of commercialization ranked third in the comments (7.6%), bringing the notion of the difficulty to profit and keep the country life. "Lack of technical knowledge" ranks third in comments about the difficulty in obtaining information related to land management, pastures, deepening knowledge about family farming and production, which impacts on the self-sustaining capacity of the business.

Narratives, such as the feeling of "lack of government support" and a sense of "devaluation of agriculture" demonstrate the young producer's view of how society and established powers see them, ranking fifth. One can note the need for more present public policies and for the valorization of the family rural production environment, which aim at actions in the entire cultivation chain.

Finalizing the analysis of the issues affecting the ability to undertake in the rural properties surveyed, "low quality of the roads" was related to the difficulty in transporting production and receiving inputs.

4. Conclusions

This article intended to reveal the main difficulties that young people inserted in the reality of family farming perceive in their attempts to endeavor. The questionnaire used in the study has shown that the main complaint is that of an economic order: "lack of credit", "financing", "expensive implements" and "high cost of production" and "maintenance" were quoted in 34% of the survey. Obtaining cheap and qualified labor was an issue to 12.6% of the interviewees and the low price of their products at the time of sale was commented on by 7.6% of the persons interviewed. There is still a need for greater technical training for field workers, the notion that young people feel a lack of support from the government and responsible agencies, and that the low quality of roads makes it difficult to receive inputs and correct an agile flow of production.

Studies have identified that farmers who care about the environment, and who specialize in a particular crop, have increased profitability on their properties. Another factor that influences economic, environmental and social sustainability is the level of education of these young people, decision makers, in family farming, which is directly proportional to the profits obtained. Public policies, and the creation of cooperatives, help in creating an identity for family farming, increasing the flow and reach of production to final consumers, as well as providing consultancy so that producers are in compliance with environmental legislation, health and trade legislation for its activities and production.

Support and research for the adoption of technological innovations, which increase productivity and reduce the consumption of inputs and natural resources, are also an incentive to keep young people in the countryside, thus avoiding rural exodus, where the whole community benefits, decreasing agglomeration in urban centers and shortage of labor in the countryside. The limiting factors of the research are the geographical area, which was present in the mountainous region of the state of Santa Catarina and the space of time, where the expectations of these young entrepreneurs at other times, such as with each change of government with new policies, can be analyzed in terms of public policies to be implemented.

Author Contributions: Conceptualization, C.K.Y., S.F.S., N.K.R., V.S.d.S. and F.F.; methodology, C.K.Y., N.K.R., and A.C.R.K.; validation, C.K.Y. and N.K.R.; formal analysis, C.K.Y., S.F.S. and N.K.R.; writing—original draft

preparation, C.K.Y., S.F.S. and N.K.R.; writing—review and editing, V.S.d.S., F.F., F.C.S.F., A.C., M.L.M., S.K.F.Y. and M.L.d.B.; funding acquisition, F.C.S.F., A.C., and M.L.M. All authors have read and agreed to the published version of the manuscript.

Funding: Support for Scientific and Technological Research Foundation of Santa Catarina State (FAPESC), Notice Nº 06/2017—Support for Research Groups of the Institutions of the ACAFE System. National Council for Scientific and Technological Development (CNPq), call MCTIC / CNPq Nº 28/2018.

Acknowledgments: The authors are thankful to the Coordination of Superior Level Staff Improvement (CAPES), awarding a Ph.D. scholarship to one of the authors.

Conflicts of Interest: The authors declare no conflict of interest.

References

1. Picolotto, E.L. Os Atores da Construção da Categoria Agricultura Familiar no Brasil. *Rev. Econ. Sociol.* **2014**, *52*, 65–83. (In Portuguese) [CrossRef]
2. Mocelin, D.G.; Azambuja, L.R. Empreendedorismo Intensivo em Conhecimento: Elementos para uma Agenda de Pesquisas Sobre a Ação Empreendedora no Brasil. *Sociologias* **2019**, *19*, 30–75. (In Portuguese) [CrossRef]
3. Ninno Muniz, R.N.; Stefenon, S.F.; Gouvêa Buratto, W.; Nied, A.; Meyer, L.H.; Finardi, E.C.; Marino Kühl, R.; Silva de Sá, J.A.; Ramati Pereira da Rocha, B. Tools for Measuring Energy Sustainability: A Comparative Review. *Energies* **2020**, *13*, 2366. [CrossRef]
4. Ribeiro, M.H.D.M.; Stefenon, S.F.; de Lima, J.D.; Nied, A.; Marini, V.C.; Coelho, L.S. Electricity Price Forecasting Based on Self-Adaptive Decomposition and Heterogeneous Ensemble Learning. *Energies* **2020**, *13*, 5190. [CrossRef]
5. Stefenon, S.F.; Nied, A. FEM Applied to Evaluation of the Influence of Electric Field on Design of the Stator Slots in PMSM. *IEEE Lat. Am. Trans.* **2019**, *17*, 590–596. [CrossRef]
6. Kasburg, C.; Stefenon, S.F. Deep Learning for Photovoltaic Generation Forecast in Active Solar Trackers. *Lat. Am. Trans.* **2019**, *17*, 2013–2019. [CrossRef]
7. IBGE (Instituto Brasileiro de Geografia e Estatística). Pesquisa Nacional por Amostra de Domicílios Contínua. PNAD. 2019. Available online: https://www.ibge.gov.br/estatisticas/sociais/trabalho/17270-pnad-continua.html (accessed on 1 October 2020). (In Portuguese)
8. Bulgacov, Y.L.; Cunha, S.K.; Camargo, D.D.; Meza, M.L.; Bulgacov, S. Jovem Empreendedor no Brasil: A Busca do Espaço da Realização ou a Fuga da Exclusão. *Rev. Adm. Pública* **2011**, *45*, 695–720. (In Portuguese) [CrossRef]
9. Global Entrepreneurship Monitor, Entrepreneurship in Brazil. In *Executive Report*, 1st ed.; Global Entrepreneurship Research Association: São Paulo, Brazil, 2017; p. 19.
10. Piedra-Muñoz, L.; Galdeano-Gómez, E.; Pérez-Mesa, J.C. Is Sustainability Compatible with Profitability? An Empirical Analysis on Family Farming Activity. *Sustainability* **2016**, *8*, 893. [CrossRef]
11. Schneider, S. Social Theory, Family Farming and Pluriactivity. *Braz. J. Soc. Sci.* **2003**, *18*, 100–121.
12. Guanziroli, C.E.; Cardim, S.E.C.S. *Novo Retrato da Agricultura Familiar: O Brasil Redescoberto*; INCRA/FAO: Campinas, Brazil, 2000; Volume 1, pp. 7–74. (In Portuguese)
13. da Silva, F.C.; Sant'Ana, A.L.A.; Maia, A.H. Public Policy on the Family Farming Sector in Brazil: Towards a Model of Sustainable Agriculture. *Afr. J. Agric. Res.* **2018**, *13*, 1719–1729.
14. Refloramaz (Restauração Florestal por Agricultores Familiares na Amazônia Oriental). A Província do Pará. EMBRAPA. 2020. Available online: http://aprovinciadopara.com.br/projeto-da-embrapa-mostra-mudancas-na-agricultura-familiar-nos-municipios-paraenses/ (accessed on 1 June 2020). (In Portuguese)
15. Deimling, M.F.; Barichello, R.; Braz, R.J.; Bieger, B.N.; Casarotto Filho, N. Family-Based Agriculture Relations in Product Trading. *Interciencia* **2015**, *40*, 440–447.
16. Schneider, S. Teoria Social, Agricultura Familiar e Pluriatividade. *Rev. Bras. CiêNcias Soc.* **2003**, *18*, 99–121. (In Portuguese) [CrossRef]
17. Koda, K.; Girmay, G.; Berihu, T. Constructability Criteria for Farmland Reclamation and Vegetable Cultivation Using Micro-Dam Sediments in Tigray, Ethiopia. *Sustainability* **2020**, *12*, 6388. [CrossRef]
18. Li, X.; Xu, S.; Hu, Y. Understanding the Rural Livelihood Stability System: The Eco-Migration in Huanjiang County, China. *Sustainability* **2020**, *12*, 6374. [CrossRef]

19. Galan, J.; Bourgeau, F.; Pedroli, B. A Multidimensional Model for the Vernacular: Linking Disciplines and Connecting the Vernacular Landscape to Sustainability Challenges. *Sustainability* **2020**, *12*, 6347. [CrossRef]
20. Stylianou, A.; Sdrali, D.; Apostolopoulos, C.D. Integrated Sustainability Assessment of Divergent Mediterranean Farming Systems: Cyprus as a Case Study. *Sustainability* **2020**, *12*, 6105. [CrossRef]
21. Brazilian Institute of Geography and Statistics (IBGE). 2006 Agricultural Census Family Farming: First Results. 2006. Available online: http://biblioteca.ibge.gov.br/visualizacao/periodicos/50/agro_2006_agricultura_familiar.pdf (accessed on 1 June 2020).
22. Lamarche, H. Comparação Internacional. In *A Agricultura Familiar*, 1st ed.; Unicamp Publisher: Campinas, Brazil, 1993; p. 336. (In Portuguese)
23. Dudek, M.; Wrzaszcz, W. On the Way to Eco-Innovations in Agriculture: Concepts, Implementation and Effects at National and Local Level. The Case of Poland. *Sustainability* **2020**, *12*, 4839. [CrossRef]
24. Dobkowitz, S.; Walz, A.; Baroni, G.; Pérez-Marin, A.M. Cross-Scale Vulnerability Assessment for Smallholder Farming: A Case Study from the Northeast of Brazil. *Sustainability* **2020**, *12*, 3787. [CrossRef]
25. Stellmacher, T.; Kelboro, G. Family Farms, Agricultural Productivity, and the Terrain of Food (In)security in Ethiopia. *Sustainability* **2019**, *11*, 4981. [CrossRef]
26. Stefenon, S.F.; Ribeiro, M.H.; Nied, A.; Mariani, V.C.; dos Santos Coelho, L.; da Rocha, D.F.; Grebogi, R.B.; de Barros Ruano, A.E. Wavelet Group Method of Data Handling for Fault Prediction in Electrical Power Insulators. *Int. J. Electr. Power Energy Syst.* **2020**, *123*, 106269. [CrossRef]
27. Corso, M.P.; Stefenon, S.F.; Couto, V.F.; Cabral, S.H.; Nied, A. Evaluation of Methods for Electric Field Calculation in Transmission Lines. *IEEE Lat. Am. Trans.* **2018**, *16*, 2970–2976. [CrossRef]
28. Stefenon, S.F.; Branco, N.W.; Nied, A.; Bertol, D.W.; Finardi, E.C.; Sartori, A.; Meyer, L.H.; Grebogi, R.B. Analysis of Training Techniques of ANN for Classification of Insulators in Electrical Power Systems. *IET Gener. Transm. Distrib.* **2020**, *14*, 1591–1597. [CrossRef]
29. Stefenon, S.F.; Silva, M.C.; Bertol, D.W.; Meyer, L.H.; Nied, A. Fault Diagnosis of Insulators from Ultrasound Detection Using Neural Networks. *J. Intell. Fuzzy Syst.* **2019**, *37*, 6655–6664. [CrossRef]
30. Stefenon, S.F.; Zanetti Freire, R.; dos Santos Coelho, L.; Meyer, L.H.; Bartnik Grebogi, R.; Gouvêa Buratto, W.; Nied, A. Electrical Insulator Fault Forecasting Based on a Wavelet Neuro-Fuzzy System. *Energies* **2020**, *13*, 484. [CrossRef]
31. Gomes, D.C.; Silva, L.A.F. Educação Empreendedora no Ensino Profissional: Desafios e Experiências numa Instituição de Ensino. *Holos* **2018**, *1*, 118–139. (In Portuguese) [CrossRef]
32. Souza, E.C.L.; Lopes Junior, G.S.; Bornia, A.C.; Alvez, L.R.R.A. Atitude Empreendedora: Validação de um Instrumento de Medida com Base no Modelo de Resposta Gradual da Teoria da Resposta ao Item. *Rev. de Adm. Mackenzie* **2013**, *6776*, 230–251. (In Portuguese) [CrossRef]
33. Barros, F.S.O.; Moreira, M.V.C.O. Comportamento Empreendedor e Suas Implicações: A Organização Produtiva de Micro e Pequenas Empresas no Turismo. *Rev. Adm. Contab. Unisinos* **2006**, *3*, 150–163. (In Portuguese)
34. Tomei, P.A.; Alves, D.A.; Souza, A. Análise das Barreiras que Dificultam a Transformação do Agricultor Familiar em Empreendedor Rural no Contexto Brasileiro. *Rev. Ibero-Americ. Estratégia* **2014**, *13*, 107–122. (In Portuguese) [CrossRef]
35. Bernardo, E.G.; Ramos, H.R.; Vils, L. Panorama da Produção Científica em Empreendedorismo Rural: Um Estudo Bibliométrico. *Rev. Empreended. Gestão Pequenas Empres.* **2019**, *8*, 102–125. (In Portuguese) [CrossRef]
36. Fu, Y.; Dou, X.; Lu, Q.; Qin, J.; Luo, J.; Yang, M. Comprehensive Assessment for the Residual Characteristics and Degradation Kinetics of Pesticides in Panax Notoginseng and Planting Soil. *Sci. Total. Environ.* **2020**, *714*, 136718. [CrossRef]
37. Pan, H.W.; Lei, H.J.; He, X.S.; Xi, B.D.; Han, Y.P.; Xu, Q.G. Levels and Distributions of Organochlorine Pesticides in the Soil–Groundwater System of Vegetable Planting Area in Tianjin City, Northern China. *Environ. Geochem. Health* **2017**, *39*, 417–429. [CrossRef] [PubMed]
38. Naik, V.C.B.; Kranthi, S.; Viswakarma, R. Impact of Newer Pesticides and Botanicals on Sucking Pest Management in Cotton Under High Density Planting System (HDPS) in India. *J. Entomol. Zool. Stud.* **2017**, *5*, 1083–1087.

39. Loboguerrero, A.M.; Campbell, B.M.; Cooper, P.J.M.; Hansen, J.W.; Rosenstock, T.; Wollenberg, E. Food and Earth Systems: Priorities for Climate Change Adaptation and Mitigation for Agriculture and Food Systems. *Sustainability* **2019**, *11*, 1372. [CrossRef]
40. Giagnocavo, C.; Galdeano-Gómez, E.; Pérez-Mesa, J.C. Cooperative Longevity and Sustainable Development in a Family Farming System. *Sustainability* **2018**, *10*, 2198. [CrossRef]
41. Manikas, I.; Malindretos, G.; Moschuris, S. A Community-Based Agro-Food Hub Model for Sustainable Farming. *Sustainability* **2019**, *11*, 1017.
42. Soldi, A.; Aparicio Meza, M.J.; Guareschi, M.; Donati, M.; Insfrán Ortiz, A. Sustainability Assessment of Agricultural Systems in Paraguay: A Comparative Study Using FAO's SAFA Framework. *Sustainability* **2019**, *11*, 3745. [CrossRef]
43. Stefenon, S.F.; Steinheuser, D.F.; da Silva, M.P.; Ferreira, F.C.S.; Klaar, A.C.R.; de Souza, K.E.; Júnior, A.G.; Venção, A.V.; Branco, R.; Yamaguchi, C.K. Application of Active Methodologies in Engineering Education Through the Integrative Evaluation at the University of Planalto Catarinense, Brazil. *Interciencia* **2019**, *44*, 408–413.
44. Vergara, S.C. *Projetos e Relatórios de Pesquisa em Administração*, 2nd ed.; Atlas Publisher: São Paulo, Brazil, 2009; p. 104. (In Portuguese)
45. Lewis, R.B.; Maas, S.M. QDA Miner 2.0: Mixed-Model Qualitative Data Analysis Software. *Field Methods* **2007**, *19*, 87–108. [CrossRef]
46. Schneider, E.M.; Fujii, R.A.X.; Corazza, M.J. Qualitative and Quantitative Research: Contributions to Research in Science Education. *Qual. Res. J.* **2017**, *5*, 569–584.
47. Severo, E.M.; Sousa, H.J. Assessing the Sustainability of Buildings Through Qualitative and Quantitative Tools. *RISTI Iber. J. Inf. Syst. Technol.* **2016**, *19*, 1–14.
48. Zanette, M.S. Pesquisa Qualitativa no Contexto da Educação no Brasil. *Educ. Rev.* **2017**, *65*, 149–166. (In Portuguese) [CrossRef]
49. Laudon, K.C.; Laudon, J.P. *Management Information Systems*, 12th ed.; Pearson: New York, NY, USA, 2011; p. 640.
50. OECD (Organisation for Economic Cooperation and Development). Education at a Glance. 2018. Available online: https://www.oecd-ilibrary.org/education/education-at-a-glance-2018/summary/slovak_ca3ef445-sk (accessed on 1 June 2020).