UNIVERSIDADE ESTADUAL DO OESTE DO PARANÁ
PROGRAMA DE PÓS-GRADUAÇÃO EM ADMINISTRAÇÃO
MESTRADO PROFISSIONAL

WESTERN PARANÁ STATE UNIVERSITY
PROFESSIONAL MASTER'S IN ADMINISTRATION

A RELAÇÃO ENTRE OS PRINCÍPIOS DO COOPERATIVISMO E O PROGRAMA DE INOVAÇÃO E DE GERAÇÃO INTERNA DE IDEIAS EM UMA COOPERATIVA DE CRÉDITO

THE RELATIONSHIP BETWEEN THE PRINCIPLES OF COOPERATIVISM AND THE PROGRAM OF INNOVATION AND INTERNAL IDEA GENERATION IN A CREDIT COOPERATIVE

[TRADUÇÃO INGLESA]

THEIVES TAINE FELIZ DA SILVA ANDRADE

CASCAVEL/PR

2023

Theives Taine Feliz da Silva Andrade

A RELAÇÃO ENTRE OS PRINCÍPIOS DO COOPERATIVISMO E O PROGRAMA DE INOVAÇÃO E DE GERAÇÃO INTERNA DE IDEIAS EM UMA COOPERATIVA DE CRÉDITO

THE RELATIONSHIP BETWEEN THE PRINCIPLES OF COOPERATIVISM AND THE PROGRAM OF INNOVATION AND INTERNAL IDEA GENERATION IN A CREDIT COOPERATIVE

[TRADUÇÃO INGLESA]

Dissertation presented in partial fulfilment of the requirements for the degree of Master of Science in Administration in the Department of Administration, Western Paraná State University. Dissertation Supervisor: Profª Dra. Sandra Mara Stocker Lago

Dissertação apresentada ao Programa de PósGraduação em Administração (PPGAdm) – Mestrado Profissional da Universidade Estadual do Oeste do Paraná, como requisito parcial para obtenção do grau de Mestre em Administração. Orientador (a): Profª Dra. Sandra Mara Stocker Lago

CASCAVEL/PR

2023

International Cataloging-in-Publication Data
UNIOESTE Library System

Andrade, Theives, Taine Feliz da Silva.
The relationship between the principles of cooperativism and the program of innovation and internal idea generation in a credit cooperative / Theives, Taine Feliz da Silva Andrade; Supervisor: Sandra Mara Stocker Lago; [Translation of Henrique Farias], 2023.
123 f.

Dissertation (Degree in of Master of Science in Administration) – Department of Administration, Western Paraná State University, 2023

[English version of: A relação entre os princípios do cooperativismo e o programa de inovação e de geração interna de ideias em uma cooperativa de crédito.]

1. Inovativo. 2. Internal Ideas Program. 3. Organizational Culture. 4. Credit cooperative. 5. Sustainability. I. Lago, Sandra Mara Stocker. II. Farias, Henrique de. III. Title.

unioeste
Universidade Estadual do Oeste do Paraná
Reitoria
CNPJ 78.680.337/0001-84
Rua Universitária, 1619, Jardim Universitário
Tel.: (45) 3220-3000 - Fax: (45) 3225-4590 - www.unioeste.br
CEP: 85819-110 - Cx. P.: 701
Cascavel - PARANÁ

PARANÁ
GOVERNO DO ESTADO

THEIVES TAINE FELIZ DA SILVA ANDRADE

A RELAÇÃO ENTRE OS PRINCÍPIOS DO COOPERATIVISMO E O PROGRAMA DE INOVAÇÃO E DE GERAÇÃO INTERNA DE IDEIAS EM UMA COOPERATIVA DE CRÉDITO

Dissertação apresentada ao Programa de Pós-Graduação em Administração em cumprimento parcial aos requisitos para obtenção do título de Mestra em Administração, área de concentração Competitividade e Sustentabilidade, linha de pesquisa Sustentabilidade, APROVADO(A) pela seguinte banca examinadora:

Orientador(a) - Sandra Mara Stocker Lago
Universidade Estadual do Oeste do Paraná - Campus de Cascavel (UNIOESTE)

Aline Dario Silveira
Universidade Estadual do Oeste do Paraná - Campus de Cascavel (UNIOESTE)

Vilmar Rodrigues Moreira
Pontifícia Universidade Católica do Paraná (PUCPR)

Cascavel, 2 de março de 2023

I dedicate this research to God, for the honor and glory of His name!

ACKNOWLEDGEMENTS

I thank the author of life, the source of wisdom and knowledge: God! He guided me and led me through each stage, sustaining me so that I could overcome each challenge. To the family: my mother, Carmen, for all her dedication and support so that I could study, from pre-school to the master's degree. To my husband, Rafael, for supporting me in this endeavor and putting up with my long absences, on school nights and study mornings, and for giving me all the support so that the research could be carried out at Cresol. To my daughter, Maria, for the hours of play and attention that I deprived her of so that I could conclude this goal and be an example to her. It is for you that every hour of effort was worth it!

I would also like to thank the cooperative that opened its doors for me to conduct this research, on behalf of the vice-president of the Cresol confederation, Adriano Michelon. To the Graduate Program in Administration at Unioeste (PPGA), for the opportunity to have access to high quality teaching, and, mainly, for putting me in front of great masters, of whom I am very proud to have been a student. To the professors Dr. Aline Dario Silveira (Unioeste), Dr. Elizandra da Silva (Unioeste), Dr. Ivano Ribeiro (Unioeste), and Dr. Vilmar Rodrigues Moreira (PUCPR), for accepting the invitation to be part of the evaluation panel and for the great contributions to the continuity of this work. A very special thanks to my supervisor, Prof. Dr. Sandra Mara Stocker Lago, for every conversation, for the deep contributions, for the reassuring words, patience, wisdom, trust, and affection. Her orientations guided me through the delivery of this research, and her professional attitude is a model of commitment and passion that have marked my life. My admiration and gratitude! Finally, many thanks to everyone who directly or indirectly supported me in this period and in this research.

RESUMO

Andrade, Theives T. F. S. (2023). A relação entre os princípios do cooperativismo e o programa de inovação e de geração interna de ideias em uma cooperativa de crédito (Dissertação). Programa de Pós-graduação em Administração (PPGA), Universidade Estadual do Oeste do Paraná – UNIOESTE, Cascavel, PR, Brasil.

O cooperativismo é um sistema econômico que realiza atividades de produção e distribuição de riquezas para grupos com interesses comuns, possibilitando vantagens. Sete princípios do cooperativismo são a base/diretrizes desse modelo de negócios, pautando a atuação e decisões tomadas nestas organizações. Diante disso, o objetivo desse estudo foi avaliar a relação destes no programa de inovação e de geração interna de ideias em uma cooperativa de crédito. A metodologia utilizada é de caráter descritivo qualitativo, realizada por meio de revisão de literatura, análise documental, aplicação de questionários e entrevistas com a proposta de um *checklist*, para avaliação do programa existente, com o responsável pela área analisada. A contribuição teórica da pesquisa se deu pela revisão sistemática da literatura, que permitiu identificar 8 categorias que mais impactam a realização de um programa interno de ideias para inovação, a partir de experiências no Brasil e no mundo. A contribuição metodológica da pesquisa se deu pela apresentação de um instrumento de coleta de dados, elaborado a partir dos sete princípios do cooperativismo, de características destacadas na revisão de literatura e nas recomendações da norma ISO 56002/2019 – Gestão da Inovação e Sistema de Gestão da Inovação. O instrumento permite identificar melhorias necessárias em programas existentes ou pode nortear a implantação de programas que estimulem a inovação em cooperativas. As contribuições práticas são a constatação da relação dos sete princípios do cooperativismo no programa de inovação e de geração interna de ideias e a proposição de ações para aprimoramento do programa nas áreas: investimentos, treinamento e comunicação. Para pesquisa futuras, sugere-se ampliação do público pesquisado, contemplando conselhos administrativo e fiscal, com a finalidade de entender como esses grupos entendem inovação, e ainda, com os cooperados, para entender se as inovações são percebidas por eles no uso dos sistemas e atendimentos nas agências. Propõe-se ainda, um estudo quantitativo, para avaliar o mesmo fenômeno do ponto de vista da possível influência que as ideias implantadas possam ter sobre o desempenho econômico da cooperativa.

Palavras-chave: Inovação; Programa interno de Ideias; Cultura Organizacional; Cooperativa de crédito; Sustentabilidade;

ABSTRACT

Andrade, Theives T. F. S. (2023). The relationship between the principles of cooperativism and the program of innovation and internal idea generation in a credit cooperative (Dissertation). Post-Graduate Program in Management (PPGA), State University of Western Paraná – UNIOESTE, Cascavel, PR, Brazil.

The cooperativism is an economic system that produces and distributes wealth for groups with common interests, enabling advantages. Seven principles of cooperativism are the guidelines of this business model, orienting the actions and decisions made in these organizations. Given this, the objective of this study was to evaluate the relationship between the program of innovation and the internal generation of ideas in a credit cooperative. The methodology used is qualitative descriptive, carried out using a literature review, document analysis, questionnaires, and interviews with the proposal of a checklist, to evaluate the existing program with the person responsible for the analyzed area. The theoretical contribution of the research was given by the systematic literature review, which allowed the identification of 8 categories that most impact the realization of an internal program of ideas for innovation from experiences in Brazil and worldwide. The research's methodological contribution was given by presenting a data collection instrument developed from the seven principles of cooperativism, characteristics highlighted in the literature review, and recommendations of the ISO 56002/2019 standard - Innovation Management System. The instrument identifies necessary improvements in existing programs or can guide the implementation of programs that stimulate innovation in cooperatives. The practical contributions are verifying the relationship between the seven principles of cooperativism in the program of innovation and the internal generation of ideas and the proposition of actions to improve the program in the areas of investments, training, and communication. For future research, it is suggested to expand the surveyed public, including administrative and fiscal councils, in order to understand how these groups understand innovation, and with the cooperative members, to understand if they perceive the innovations in the use of systems and services at the branches. A quantitative study is also proposed, to evaluate the same phenomenon from the point of view of the possible influence that the implemented ideas may have on the economic performance of the cooperative.

Keywords: Innovation; Internal Ideas Program; Organizational Culture; Credit cooperative; Sustainability;

LIST OF FIGURES

Figure 1 Types and terminologies of social innovation 33
Figure 2 SDGs related to ISO 56002/2019..... 37
Figure 3 Research Design..... 45
Figure 4 Detailing the data collection process at Cresol 49
Figure 5 Content Analysis Development..... 57
Figure 6 *Cresol Lab's website, in Portuguese*..... 80
Figure 7 Perception of employees vs. superintendents about the level of innovation in the 2nd principle..... 91
Figure 8 Perception of employees vs. superintendents about the level of innovation in the 3rd principle 92
Figure 9 Perception of employees vs. superintendents about the level of innovation in the 5th principle 92
Figure 10 Perception of employees vs. superintendents about the level of innovation in the 6th principle 93
Figure 11 Perception of employees vs. superintendents about the level of innovation in the 7th principle 94

LIST OF TABLES

Table 1 Principles of cooperativism 25
Table 2 Main differences between credit cooperativism and commercial banks 28
Table 3 Hansen and Birkinshaw's innovation value chain 34
Table 4 Number of articles found in the Capes database, according to inclusion criteria 46
Table 5 Number of articles found in the Elsevier database, according to inclusion criteria 47
Table 6 Cross-referencing themes and authors 51
Table 7 Cross-referencing the findings in Andrade, Lago, and Stabile's (2022) study with the ISO 56002/2019 standard 53
Table 8 Principles of cooperativism and related products and services 55
Table 9 Rules for choosing the documents for the *corpus* 58
Table 10 Organization of the material that composes the *corpus* 58
Table 11 Recording units - initial themes 59
Table 12 Thematic axes 60
Table 13 Instruments used according to thematic axes - recurrence 60
Table 14 Analysis Categories 63
Table 15 Principles of cooperativism and possible related products, services, and processes 66
Table 16 Internal idea generation techniques mentioned 68
Table 17 Idea management processes 70
Table 18 Aspects for the evaluation of ideas 72
Table 19 Award models 73
Table 20 Fundamental aspects for evaluating the results obtained with the implemented ideas 76
Tabela 21 Obstacles to innovation 77
Table 22 Ideas of implanted innovations x cooperative principles 89
Table 23 Principles with higher positive and negative evaluation of the innovation level 94
Table 24 Suggestions for improvements in the internal innovation program 95
Tabela 25 Top obstacles for innovation in the cooperative in the superintendents' view 97
Table 26 Proposed actions to improve Cresol's internal innovation program 99

LIST OF ABBREVIATIONS AND ACRONYMS

AI	Artificial Intelligence
FATES	Technical, Educational, and Social Assistance Fund
ICA	International Cooperative Alliance
ICT	Information and Communication Technology
IEDI	Institute for Studies in Industrial Development
IMS	Idea Management System
ISO	International Organization for Standardization
LGDP	General Data Protection Law
MCTI	Ministry of Science, Technology and Innovation
OGA	Ordinary General Assembly
SDG	Sustainable Development Goals
UN	United Nations
UNCHE	United Nations Conference on the Human Environment

TABLE OF CONTENTS

1 INTRODUCTION 15
1.1 RESEARCH PROBLEM 18
1.1.1 Research question 20
1.2 OBJECTIVES 20
1.2.1 General objective 20
1.2.2 Specific objective 20
1.3 JUSTIFICATION 21
1.4 METHODOLOGICAL PROCEDURES AND STRUCTURE 22

2 THEORETICAL AND PRACTICAL REFERENCES 24
2.1 COOPERATIVISM 24
2.1.1 Principles of cooperativism 24
2.1.2 Credit cooperatives 26
2.1.3 Differences between credit cooperativism and commercial banks 27
2.2 INNOVATION 30
2.2.1 Innovation and sustainability 31
2.2.2 The intersection between social and economic innovation and cooperativism 32
2.2.3 Innovation value chain 33
2.2.4 Internal programs for innovation ideas 35
2.2.5 The ISO 56002/2019 standard - Innovation management 36
2.3 SIMILAR EXPERIENCES IN BRAZIL AND THE WORLD 38
2.3.1 Similar experiences in Brazil 38
2.3.2 Similar experciences around the world 40
2.4 CONSIDERATIONS ON THE CHAPTER 43

3 RESEARCH METHOD AND TECHNIQUES 44
3.1 RESEARCH DESIGN 44
3.2 DATA COLLECTION AND ANALYSIS PROCEDURE 45
3.2.1 Systematic literature review 45
3.2.2 Document research 48

3.2.3 Primary data collection instruments 48
3.2.4 Data analysis procedures - Content analysis 55
3.3 LIMITATIONS OF RESEARCH METHODS AND TECHNIQUES 64

4 ANALYSIS AND INTERPRETATION OF RESULTS 65
4.1 RESULTS OF THE SYSTEMATIC LITERATURE REVIEW ON INNOVATION PROGRAMS AND INTERNAL IDEA GENERATION 65
4.1.1 Factors that influence internal idea generation 65
4.1.2 Internal idea generation techniques 68
4.1.3 Idea management processes 70
4.1.4 Evaluation and selection of ideas 71
4.1.5 Award models and criteria 73
4.1.6 Idea implementation and feedback 75
4.1.7 Evaluating the results of implemented ideas 75
4.1.8 Obstacles to innovation 77
4.2 THE RELATIONSHIP BETWEEN THE COOPERATIVE PRINCIPLES AND INNOVATION IN THE PERCEPTION OF EMPLOYEES AND LEADERS AT THE THREE LEVELS OF THE COOPERATIVE: CONFEDERATION, CENTRAL, AND SINGULAR 79
4.2.1 Description of the Cresol cooperative's innovation program 79
4.2.2 Singular Cresol employees' perception of the program 82
4.2.3 Perception of the superintendents of the singular companies that are part of the Cresol Baser central office about the innovation program 84
4.2.4 Results of the checklist application - evaluation model of the internal program of ideas for innovation at Cresol 87
4.2.5 Cross referencing the perception of the relationship between the cooperative principles and innovation 90
4.3 PROPOSED ACTIONS FOR THE IMPROVEMENT OF CRESOL'S INTERNAL INNOVATION PROGRAM 95

5 CONTRIBUTIONS TO PRACTICE 103

6 FINAL CONSIDERATIONS 105

REFERENCES 107

APPENDIX A - SEMI-STRUCTURED INTERVIEW WITH THE PERSON IN CHARGE OF CRESOL'S INNOVATION LAB 115

APPENDIX B - SEMI-STRUCTURED INTERVIEW WITH THE SUPERINTENDENT OF THE SINGULAR CRESOL *PROGRESSO* 116

APPENDIX C - CHECKLIST/MODEL FOR EVALUATION OF THE INNOVATION PROGRAM AND INTERNAL GENERATION OF IDEAS IN COOPERATIVES 117

APPENDIX D - QUESTIONNAIRE TO SUPERINTENDENTS 120

APPENDIX E - QUESTIONNAIRE FOR EMPLOYEES OF THE SINGULAR COOPERATIVE 122

1 INTRODUCTION

The Ministry of Science, Technology, and Innovation (MCTI) in Brazil recognizes the transformative role of innovation and its sustainable impact on society. Innovation is classified as an element capable of providing economic and social development for all Brazilians, enabling the achievement of a new scientific-technological level that reduces the technological deficit typical of developing countries (Tiger, 2006; Brazil, 2015).

Due to the role of each organization in this process of national development, taking responsibility for sustainable agency development requires a look at the need to promote innovation, which should be treated prominently in organizational strategy (Moricochi & Gonçalves, 1994), being the main engine for evolution and a means of survival of organizations (Nelson, 1985), and a central process of organizational renewal (Tidd & Bessant, 2015).

The innovation process results from the interaction of the innovative capacity of people and the organization's structure (Ven *et al.,* 1999). Internal and external factors compose the environment that can be more or less favorable to innovation, reducing its degree of uncertainty (Machado & Carvalho, 2013). From the organization's point of view, it is necessary to develop a multidimensional context with a supportive infrastructure, oriented towards value generation, with an environment that allows innovation deployment (Dobni, 2008). Innovation is made by creative people who are not afraid to make mistakes, have resources to develop research, and can interact with the market and its players, identifying the opportunities present (Serra, Fiates, & Alpersted, 2007).

Thus, the organization must encourage people to develop and implement new ideas, engaging in mutual human interactions to shape the adjustments needed to achieve desirable performance in an ever-changing internal and external organizational and institutional context (Ven, Angle, & Poole, 2000).

For organizations beginning to develop a culture of innovation, the program of internal generation of ideas is one of the primary mechanisms (Barbieri, Álvares, & Cajazeira, 2009). The existence of this environment favorable to innovation in the organization is responsible for developing the pillar of support necessary for it to occur (Rogers, 1995) and the ideal scenario for the realization of internal programs of ideas. After all, initiative, ability to innovate, and manage according to the context are attitudes motivated in employees by the organization's values (Schreiber, Silva, & Nunes, 2021).

Innovation is also part of the current challenge for most companies whose business model is not based on technology. By capturing value through sustainable innovation efforts, the organization gains support in building a knowledge base that allows it to improve process management (Tidd & Bessant, 2015).

The cooperatives are among the organizations experiencing the urgency of developing mechanisms to think about innovation as a means to achieve sustainable growth. This search is associated with the base of the system, guided by the seven principles that govern the practices of this business model. This concern is evident in the following principles: 3rd – Member economic participation; 5th - Education, training, and information; 7th – Concern for the community (Delfino, Land, & Silva, 2010).

Although the cooperative does not aim at profits, it is formed by a group of members who expect the growth of the business and the generation of a positive result, enabling the delivery of products and services with lower prices and better conditions and presenting surplus, which are divided at the end of each fiscal year. Thus, the third principle highlights the need to grow, and the fifth and seventh remind us that this growth must occur sustainably because the cooperative has a social role and a responsibility to the communities in which it operates. The cooperative is an organization that develops sustainability by promoting the cooperative members' evolution in the economic dimensions, offering access to the market and commercialization of products and services, and in the social aspect, through the inclusion of members (Canquerino & Bertolini, 2019).

Cooperative organizations need to develop and grow, promoting the most significant possible positive influence on society and minimizing damage as much as possible. In this context, innovation emerges as a way and an alternative. Associated with the responsibility of delivering high quality in all products and services, it has been used as a strategy in credit cooperatives (Meinen, 2016).

However, it is impossible to talk about culture in cooperativism without addressing the seven principles, the basis of its business model. It is necessary to reconcile the principles governing cooperativism with a vision of sustainable development considering innovation. In this context, incremental innovation at the managerial level, stimulated by internal idea generation programs, is a way to start the innovation process and seek adequacy to the new economy's demands.

Innovation management, suited to the organization's reality, can improve financial performance and organizational learning (Khosravi, Newton, & Rezvani, 2019). The lack of control and management of ideas is one of the biggest obstacles to innovation (Andrade, Lago, & Stabile, 2022). This difficulty stems mainly from the lack of clarity about the processes and steps that should be adopted (Luqmani, Leacha, & Jesson, 2017).

The importance of monitoring, managing, and continuously improving innovation processes motivated the International Organization for Standardization (ISO) to release, in July 2019, ISO 56002 - Innovation Management System, which highlights aspects essential for successful innovation management: the context of the organization and culture; the leadership; planning and objectives of innovation; support, dealing with people and resources; operation of innovation as a process for new solutions; analysis and evaluation of innovation; continuous improvement (Associação Brasileira de Normas Técnicas, 2019).

Thus, this study seeks to understand, from the cooperative principles of ISO 56002/2019 and the main aspects advocated for the success of a program of internal generation of ideas, the relationship between innovation and cooperative values in a credit cooperative proposed in scientific publications in the area. The purpose is to understand the relationship between these values, the ideas implemented, and how the innovation program is conducted.

The research was conducted at Cresol - Cooperativa de Crédito, a cooperative in the financial sector, founded in 1995 in the interior of the state of Paraná. Cresol is one of the main cooperatives in the credit segment in Brazil. It has 693,000 members and 690 branches in 17 Brazilian states (Cooperativa de Crédito Rural com Interação Solidária, 2022).

Cresol's innovation program includes an ideas laboratory responsible for encouraging, receiving, and processing the results of the promotion of internal idea generation. Thus, its innovation program stimulates the generation of ideas promoted by its internal employees and managed through the laboratory. The cooperative had no programs involving open innovation in the analyzed period[1].

Thus, this research aims to point out practical actions that can be implemented to optimize Cresol's innovation program, stimulating the agents' participation and aiming at the organization's sustainable growth.

---

[1] Open innovation is the joint action, the systematic interaction of the organization with external agents, such as universities, research institutes, individual collaborators, companies, and innovation networks, with the purpose of licensing technology or knowledge that can contribute to the generation of innovations (Stal, Nohara & Chagas, 2014).

1.1 RESEARCH PROBLEM

Innovation is a requirement for the global sustainability challenge to be addressed (Luqmani, Leacha, & Jesson, 2017). Ideas that arise from employees within organizations are the starting point for innovation and can lead to business sustainability (Batistic *et al*., 2022). However, an environment conducive to creativity and continuous improvement of products, services, and processes is necessary.

The development of innovation culture, which allows sustaining an internal idea generation program in the organization, needs to stimulate essential factors for ideas to emerge and innovation to occur, such as autonomy (Thom, 2016; Pimentel, Loiola & Diogo, 2020; Valdati *et al*., 2020), psychological safety (Batistic *et al*., 2022), socialization (Dorow *et al*., 2013; Borchardt & Santos, 2015; Sérgio, Gonçalves & Souza, 2015a), internal communication (Rosa Vendler & Maçaneiro, 2018; Valdati *et al*., 2020; Pimentel, Loiola, & Diogo, 2020; Ida & Tumelero, 2021), trainings (Dorow *et al*., 2013; Borchardt & Santos, 2015; Froehlich, 2016; Batistic *et al*., 2022), risk-taking orientation (Luqmani, Leacha, & Jesson, 2017; Rosa Vendler & Maçaneiro, 2018; Ida & Tumelero, 2021) and rewards (Buchele *et al*., 2014; Borchardt & Santos, 2015; Dorow *et al*., 2013; Quandt *et al*., 2014; Sergio *et al*., 2015; Froehlich, 2016; Thom, 2016; Vargas *et al*., 2017; Rosa Vendler & Maçaneiro, 2018; Ferreira *et al*., 2019; Ida & Tumelero, 2021).

The urgency for credit cooperatives to develop innovations is supported by the constant transformations in the financial segment, the *locus* of this research, requiring permanent updating of the organizations in this market. Incremental, radical, and disruptive technologies, such as predictive systems, artificial intelligence (AI), integrated communication systems, and the convergence of channels, tools, and methods that provide speed in interactions, increased efficiency, and time optimization (IEDI, 2019) are some of the processes that are part of the innovative universe in the current financial market.

Among the innovations that have promoted significant transformations in this segment is Open Banking, a model that proposes the integration and connection between banking and financial institutions for consultation of customer data (with their permission) in order to facilitate the process of offering financial products and services, giving the consumer the option to seek the institution that offers the most advantageous condition. This process is supported

by Law No. 13,709/2018, which establishes standards for carrying out the information consultation process, aiming at data protection, cited by Jarude & Silveira (2021). Another innovation that caused a remarkable transformation in the financial market segment was the emergence of the Pix, a digital system for making payments instantly, instituted by the Central Bank of Brazil in November 2020 (Kosinski, 2021).

Credit cooperatives, characterized by their traditional base and 111 years of history in the country, have sought to include innovation in their processes as a way out for sustainability in this increasingly competitive scenario. In this context, innovation processes can be allies by allowing the diagnosis of weaknesses and enabling organizations to seek innovative solutions (Keeley *et al*., 2015).

In a context of frequent changes, such as the ones imposed by the emergence of the Covid-19 pandemic, the world economy was put to the test and underwent major transformations driven by technological progress (Szalavetz, 2020) and the ability of organizations to present simple and efficient solutions to solve limitations, such as the inability to go in person to a branch to request a service, sign a document or even authorize a transaction. Although this technological adjustment has become latent in the pandemic, the preference for digital organizations in the financial segment is a reality that predates Covid-19's impact on society. Consumers prefer institutions that use systems that dispense with physical presence to conduct business (Estrada, 2005).

Another technological phenomenon that preceded Covid-19 and challenged the innovative capacity of traditional financial organizations was the emergence of several fintechs, innovative companies that introduce technological innovations in the market aimed at meeting users' needs in the financial segment (Onzi *et al*., 2017). In this scenario, traditional institutions needed to seek updating to ensure their permanence in the market (Oliveira & Malagolli, 2016).

The environment the organization promotes for its employees determines the internal generation of innovative ideas (Tellis *et al*., 2009). Although idea management has been studied for over two decades (Majaro, 1992; Tropman, 1998), there is still room for the development of studies that specifically analyze the use of an internal idea generation program in a specific business model, such as, in this case, the cooperativism, given the existence of a gap concerning the seven cooperative principles in the context of innovation. It is still necessary to understand how the seven principles of cooperativism can impact managerial behaviors and

practices in the context of innovation and the practical results of the innovation efforts made by credit cooperatives.

1.1.1 Research question

Given this context, this study seeks to answer the following research question: how do the seven cooperative principles relate to a credit cooperative's innovation and internal idea-generation program?

1.2 OBJECTIVES

1.2.1 General objective

To analyze the relationship of the seven principles of cooperativism with a credit cooperative's innovation and internal idea generation program.

1.2.2 Specific objective

a) To conduct a literature review on innovation and internal idea generation programs in order to find in the studies the characteristics considered most important for the success of these programs in organizations.
b) To develop an instrument for evaluation (in checklist format) of innovation and internal idea generation programs based on the seven principles of cooperativism, the findings of the literature review, and ISO 56002/2019.
c) To evaluate the relationship between the principles of cooperativism and innovation in the perception of employees and leaders at the three levels of the cooperative: confederation, central, and singular.
d) To propose actions to improve the innovation and sustainability program of the credit cooperative under study.

1.3 JUSTIFICATION

This work is justified by the importance of understanding how the seven principles of cooperativism relate to an innovation program so that it is possible to identify potentialities and challenges of ideas management in this business model. This gap was identified after a literature review, with scientific studies published between 2012 and 2022, to identify the state of the art of the theme "innovation program and internal idea generation." In this review, which considered 19 articles, none of the evaluated works was applied to credit cooperatives; thus, this dissertation's central element was not explored.

Another gap identified in the review was the difficulty companies manage ideas for innovation due to a lack of knowledge about the stages and characteristics of the process. Given this difficulty and seeking to simplify access to this information, this study presents a systematized assessment tool for innovation ideas programs as a checklist. It was developed based on the seven principles of cooperativism, on critical characteristics for the success of internal ideas programs, the result of the systematic review, based on the recommendations of the ISO 56002/2019 standard, in the chapters that have specific adherence with the internal ideas generation program.

This instrument should enable the identification and analysis of gaps in innovation programs, which use the generation of ideas coming from the employees as a tool for continuous improvement or a basis to support the implementation of programs in cooperatives that do not use this tool. Although the checklist is specific for cooperatives that operate in the financial segment, due to the focus of the questions in section 4 for operations, products, and services of this segment, the instrument can be adjusted for use in cooperatives that operate in other areas.

Finally, the interest in cooperativism is justified due to the growth of this business model, which, according to the *Anuário do Cooperativismo Brasileiro* 2021 (Brazilian Cooperativism Yearbook 2021), is present in the lives of 18.8 million people. The cooperatives injected more than R$ 17 billion in taxes into the public coffers and R$ 36 billion referring to the payment of salaries (Organização das Cooperativas do Brasil, 2021). Although relevant, the segment lacks scientific research, especially regarding innovation.

Thus, the interest and relevance of this research is justified, as it contributes both academically and practically to filling the gaps found on this theme and market segment, providing evidence and opening possibilities for future studies.

1.4 METHODOLOGICAL PROCEDURES AND STRUCTURE

This study is organized into six chapters. In this first chapter, the research problem, the general and specific objectives were presented, and the justifications for conducting this study.

The second chapter explores the theoretical foundation, divided into two central themes: cooperativism and innovation, also bringing similar experiences in Brazil and in the world. The cooperativism section presents the principles that govern this business model, what the credit cooperative is, and the differences between a cooperative of the financial branch and a bank. The section on innovation presents a brief review of the topic and the connections between innovation and sustainability, social innovation and cooperativism, the innovation value chain, internal innovation idea programs, and the ISO 56002/2019 standard. Chapter 2 also presents similar experiences in Brazil and the world, based on a systematic review.

The third chapter is devoted to the research methodology; it presents the research design at each stage: procedures for data collection, document research, data collection instrument, and limitations of the methods and techniques used.

Consequently, chapter four presents the analysis and interpretation of the research results. The section details the findings from the systematic literature review, which allowed identifying the eight main characteristics of internal programs of ideas for innovation in Brazil and worldwide. This chapter also presents the internal program of ideas for innovation of the credit cooperative under study and the analysis of the results of the questionnaires applied to employees and leaders of the institution. It also presents the crossing of the perception of these two publics and proposed actions to improve the program in the researched institution.

The fifth chapter, in turn, presents the practical contributions drawn from the treatment of the data and based on the systematic review findings.

The final considerations are presented in the sixth chapter.

Finally, the references of the studies and theoretical foundations adopted in this research end this research.

2 THEORETICAL AND PRACTICAL REFERENCES

2.1 COOPERATIVISM

2.1.1 Principles of cooperativism

The cooperative movement emerged from the first Industrial Revolution in England between 1760 and 1850. The country was experiencing the emergence of industries, the consolidation of capitalism, and the polarization between the bourgeoisie and the proletariat. The cooperativism arose with the union of workers to conquer the most urgent social changes, configuring itself as a socioeconomic structure to support these groups (Lasserre, 1972; Schneider, 2012).

Cooperatives are companies that differ from others because of their motivation; they are at the service of people, through solidarity and mutual help, with a social role. The cooperative doctrine appeals to consciences as a model of education for solidarity and for promoting an alternative economic system based on autonomy, justice, and democracy (Schneider, 2012).

One of the international cooperative initiatives that established the basis of the model still used in Brazil today emerged with the Rochdale Society of Equitable Pioneers, founded in 1844 by English weavers. The group sought to develop a model that allowed autonomy and independence from the state and the prevailing capitalism (Taborda, 1933).

The cooperative was responsible for developing statutes, principles, and values that endure until today. Among them, the definition of the seven principles of cooperativism, based on the Rochdale Society of Equitable Pioneers, called "golden rules": 1 - open membership; 2 - democratic control: "one person, one vote"; 3 - return of the surplus or return on purchases; 4 - limited interest on capital; 5 - political, religious and racial neutrality; 6 - cash trading; 7 - promotion of education at all levels (Taborda, 1933).

The cooperative values were adjusted to the new global reality and gained new meanings throughout the century, reaching the current constitution (Delfino, Land, & Silva, 2010). Each value carries premises that should guide the strategies, decision-making, and daily practices of the cooperative in all areas, as described by the International Cooperative Alliance (ICA) (2020), detailed in Table 1.

Table 1 Principles of cooperativism

Principle	Premise
1º - Voluntary and Open Membership	Cooperatives are voluntary organizations, open to all persons able to use their services and willing to accept the responsibilities of membership without gender, social, racial, political, or religious discrimination.
2º Democratic Member Control	Cooperatives are democratic organizations controlled by their members, who actively participate in setting their policies and making decisions.
3º Member Economic Participation	Members contribute equitably to and democratically control the capital of their cooperative. At least part of that capital is usually the common property of the cooperative. Members usually receive limited compensation, if any, on capital subscribed as a condition of membership. Members allocate surpluses for any or all of the following purposes: developing their cooperative, possibly by setting up reserves, part of which at least would be indivisible; benefiting members in proportion to their transactions with the cooperative; and supporting other activities approved by the membership.
4º Autonomy and Independence	Cooperatives are autonomous, self-help organizations controlled by their members. If they enter into agreements with other organizations, including governments, or raise capital from external sources, they do so on terms that ensure democratic control by their members and maintain their cooperative autonomy.
5º Education, Training, and Information	Cooperatives provide education and training for their members, elected representatives, managers, and employees so they can contribute effectively to developing their co-operatives. They inform the general public - particularly young people and opinion leaders - about the nature and benefits of cooperation.
6º Cooperation among Cooperatives	Cooperatives serve their members most effectively and strengthen the cooperative movement by working together through local, national, regional, and international structures.
7º Concern for Community	Cooperatives work for the sustainable development of their communities through policies approved by their members.

Source: Research data, adapted from International Cooperative Alliance (2020).

Cooperatives emerge as paths to reduce inequalities. According to ICA reports, the highest growth rates of cooperatives are in Third World countries, among those considered emerging economies (International Cooperative Alliance, 2020). Schneider (2012) discusses the importance of the guiding principles of cooperativism as the basis for the growth of this movement around the world, arguing that these are the convictions that make individuals not retreat in the face of challenges and move them toward goals that need to be achieved, because "without the values, cooperativism would become a sterile and meaningless system and movement" (Schneider, 2012, p. 258).

The concern with contributing to building a more equitable world is highlighted in the Strategic Plan of the ICA, approved in 2012 in Manchester. It establishes as a vision, in a strategic plan that extends until 2030, the proposal that the cooperative movement becomes a recognized model of economic, social, and environmental sustainability (International Cooperative Alliance, 2012).

In Brazil, cooperative activity is divided into seven branches: agriculture and cattle raising, consumption, infrastructure, health, labor, production and service goods, transportation, and credit. The latter is the segment that is the object of this study.

2.1.2 Credit cooperatives

The first credit cooperative was founded in Germany in 1864 by Friedrich Wilhelm Raiffeisen, called *Heddesdorfer Darlehenskassenverein* (Haddesdorf Association of Loan Banks) (Pinheiro, 2008). The purpose of this institution was to offer credit to the rural population of that region, who had loans with high-interest rates as an option, charged by local industrialists, who owned the capital (Frade & Oliveira, 2018).

Germany was also a pioneer in urban credit cooperatives. Hermman Schulze launched the Schulze-Delitzsch model, which differed from the model proposed by Raiffeisen by the possibility of returning net surpluses in proportion to the capital invested (Pinheiro, 2008).

The combination of the ideas proposed by both models gained supporters in Western Europe. In 1865, in Milan, Luigi Luzzatti organized the country's first credit cooperative, inaugurating a model that would inherit his surname: Luzzatti (Pinheiro, 2008). This model had as main features: no specific bond among members, small capital quotas, no need for fundamental guarantees to grant small loans, as well as no remuneration of directors and the limited liability of members to the capital they subscribed to (Frade & Oliveira, 2018). This model inspired the cooperative credit movement in Brazil, especially between 1940 and 1960.

Another model that inspired credit cooperatives in Brazil was the Desjardins, inspired by the Raiffeissen and Schulze models, which emerged in Quebec. This system, known in Brazil as mutual credit cooperatives, is intended exclusively for members with some link between them (Frade & Oliveira, 2018), such as groups of clubs, workers of the same company, public employees, among others (Pinheiro, 2008).

Brazil's first credit cooperatives were the *Sociedade Beneficente de Juiz de Fora* (Juiz de Fora Charitable Society) in 1885 and the *Sociedade Cooperativa Econômica dos Funcionários Públicos de Ouro Preto* (Economic Cooperative Society of the Public Employees of Ouro Preto), created in 1889. Another pioneer in the segment was the *Caixa Econômica de Empréstimos Amstad* (Amstad Savings Bank of Loans), founded in 1902, later called *Caixa Rural de Nova Petrópolis* (Rural Bank of Nova Petrópolis). Today, a museum of Brazilian credit cooperativism (Frade & Oliveira, 2018).

Brazilian credit cooperatives, and others worldwide, emerged to meet a need for credit and more accessible conditions for the public. Given the demand, the cooperatives emerged independently of the legal regulation, given that the legal framework that defined the specificities of cooperativism materialized with Law No. 5,764, published on December 16, 1971 (Frade & Oliveira, 2018).

2.1.3 Differences between credit cooperativism and commercial banks

Regarding the services provided, cooperatives and commercial banks are similar (Rovani *et al*., 2020). However, a fundamental difference is related to the motivation of the operations performed. Table 2 presents the main differences between these two models.

Table 2 Main differences between credit cooperativism and commercial banks

Difference	Commercial banks	Credit cooperatives
01	Capital companies	Partnerships
02	Power is exercised in proportion to the number of shares	The vote has equal power for all (one person, one vote)
03	Deliberations are concentrated	Decisions are shared among many
04	The administrators are third parties (market people)	The administrators are internal (associates)
05	The user of the operations is the customer	The user is the owner (associate)
06	The user has no influence on the definition of products and their pricing	The users/owners themselves decide all operational policy
07	They can treat each user differently	They cannot distinguish: what is valid for one is valid for all (art. 37 of Law 5.764/71)
08	They prefer the higher income audience and larger corporations	No discrimination and service to all audiences
09	They prioritize metropolises (although they are not geographically limited)	No geographical restrictions, having solid action in remote communities
10	They have mercantile purposes	Merchantability is not considered (art. 79, sole paragraph, of Law No. 5.764/71)
11	The remuneration of the operations and services has no parameter/limit	The price of operations and services has as a reference the costs, and as a parameter, the reinvestment needs
12	They attend en masse, prioritizing self-service	The relationship is personalized/individual, with computer support
13	No link to the community and the target audience	Committed to the communities and the users
14	Advance through the competition	Developed by cooperation
15	Profit-oriented par excellence	Not profit-aimed, either by their nature or by legal determination (art. 3 of Law No. 5.764/71)
16	The result is few owners (nothing is shared with the customers)	The surplus is divided among all users in proportion to their individual operations, further reducing the final price paid by the cooperative members and increasing the remuneration of their investments
17	On the corporate level, they are regulated by the Corporations' law	They are regulated by Cooperative Law and by their legislation

Source: Meinen and Port (2014).

For credit cooperatives, efficiency is related to adding value to members, and maximizing results that materialize in credit operations and net benefits (Rovani *et al*., 2020). Cooperatives differ from banks mainly by the aspect highlighted in item 13 of Table 2. While banks have no ties with the community and their target public, cooperatives assume a socioeconomic responsibility in the place where they operate. They apply private and public resources in their social, political, and, primarily, economic commitments in the social group in which they operate (Porto & Ferreira, 2015).

Another significant difference concerns results (Item 15, from Table 2). While banks are driven by profit, cooperatives seek to provide conditions for members to have easier access to resources at lower rates. Members do not seek to profit individually but to enjoy better economic conditions and overcome adversities and injustices in an environment of unequal and fierce competition (Rovani *et al*., 2020).

The positive financial result, called "surplus" in cooperatives, is generated by financial intermediation and operational and financial performance. The surplus of the invested contribution goes to reserves or equity, based on rules defined in the cooperative's bylaws, according to Resolution No. 4,434, 2015, of the Central Bank of Brazil (Rovani *et al*., 2020).

Although profit is not a cooperative's goal, its financial health and growth are fundamental to carrying out actions that promote the development of the members and the communities. The social responsibility of cooperatives means that these organizations seek the development of cooperativism as an economic model and promote educational and emancipating actions for the members themselves since the gains and investments in the cooperative system provide positive returns for the collectivity (Rovani *et al.*, 2020). It is because of their operating principles and values that credit cooperatives have unique advantages for promoting economic, social, labor, and democratic stability, and these are the fundamental pillars that characterize the ability of these entities to promote local and regional development where they operate (Bretos & Marcuello, 2016).

Thus, the efficiency of credit cooperativism enhances the socioeconomic role, promoting greater access to financial services, with better rates of funding and loans, promoting more opportunities for the circulation of resources, and enhancing local development, since the money circulates in the community that hires it (Ferreira, Gonçalves, & Braga, 2007). Thus, credit cooperatives have the ability to create deep connections and impact human and social relationships (Samian *et al*., 2017).

In view of this, it is necessary to find mechanisms that support the growth of these cooperatives. Innovation presents itself as a path, considering that technological changes and

the speed of change in the conventional financial system force cooperatives to adapt to new service formats and the supply of products and services. Nonetheless, the question of how to start working on innovation arises. The programs of innovation and internal generation of ideas for innovation can help in the creation of a culture of innovation and provide important incremental innovations for the improvement of products and services performed in the cooperatives. Given that ideas are the raw material of the process, they are an important part of the process of developing the culture of innovation (Brem & Voigt, 2007; Endesley, 2010; Bothos, Apostolou, & Mentzas, 2012).

However, innovation as a strategic source, through the management of ideas, requires preparation on the part of the organization (Barbieri, Álvares & Cajazeira, 2009), since innovation has an intrinsic dependence on the organizational environment, especially with regard to fostering the emergence of creative ideas and their implementation (Tidd, Bessant & Pavitt, 2005).

The sharing of ideas is also important for the formation of a culture of continuous improvement, where each individual's ability is valued (Terra, 2007).

2.2 INNOVATION

The Oslo Manual (2018) defines innovation as a new or improved product or process (it can also be a combination of the two) that differs significantly from previous products or processes (Organization for Economic Cooperation and Development, 2018). Walker (2006) classifies it as the process by which new ideas, objects, or practices are created, developed, implemented, and disseminated. Innovation is seen as successfully implementing a creative idea that can be presented through knowledge, practice, or a physical object (Vandenbosch, Saatcioglu, & Fay, 2006).

Innovation has gained prominence as companies have become multi-market, multi-product, and multi-technology. The growth in the use of information and communication technologies (ICTs) has created a new techno-economic paradigm in which innovation is an indispensable tool for the survival of organizations (Ferreira *et al*., 2019). This environment demands an agile and adaptive behavior from organizations to seize opportunities and overcome challenges. The most adaptable companies, with regard to the development of new products, processes, and forms of commercialization, and are able to promote organizational changes, have a better chance of surviving and growing (Ida & Tumelero, 2021).

Organizational innovation occurs as conditions are created for knowledge generation and to be recognized and applied in products and processes (Pimentel, 2019). Innovation is accepted as a critical factor for organizational success as it enables better results and accelerates growth (Tidd & Bessant, 2015). The benefits extend further to access to new markets, value chain efficiency, cost reduction, and risk (Frondel *et al*., 2010).

The Oslo Manual (2020) presents two main competencies that innovative organizations must have: strategic competencies related to the ability to identify and anticipate market trends by processing and assimilating technological and economic information; organizational competencies, which concern the ability and willingness to manage risk, internal (departments) and external (consultancies, stakeholder surveys) participation, and the involvement of the entire company in the change process (Organization for Economic Cooperation and Development, 2020).

An innovative organization continuously and permanently develops tangible and intangible resources to innovate and, by inserting these innovations, using systematic bases of autonomy, intentionality, and proactivity, have the expected results (Barbieri, 2007).

Ferreira *et al*. (2019) present two organizational approaches regarding innovation: the Eastern and the Western. The Eastern approach focuses on the continuous improvement and well-being of the organization and aims to create a culture of collaboration through employees' contribution; the Western approach is concerned with mining ideas to generate radical innovations recognized by financial rewards. The authors understand that both can be used according to the company's needs.

Given the role of innovation as a competitive differential, the sustainable impact it can promote has come to be considered as it can contribute to the construction of capitalism that considers the unity between society and nature, economy, and ethics (Abramovay, 2012). Based on this thought, it is necessary to understand how the relationship between innovation and sustainability occurs in the organizational context, a topic explored in the next section.

2.2.1 Innovation and sustainability

The concept of sustainability began to be outlined at the United Nations Conference on the Human Environment (UNCHE), held in Sweden in 1972 (Vaz & Maldonado, 2017). According to the Brundtland Report (1987), sustainability is the ability to produce in such a way that the needs of this generation are met without jeopardizing the possibilities of meeting the needs of future generations.

A sustainable organization achieves economic efficiency without ignoring the environment's support capacity and assumes the role of contributing to social justice and inclusion (Barbieri, 2007). Thus, sustainable innovation is the novelty that, when implemented, results in gains for the company, society, and the environment (Barbieri, 2007). An economic and social commitment supports sustainability and ensures a good living and working environment (Japiassú & Guerra, 2017).

Organizations that seek to innovate in this way must consider the three dimensions of sustainability: social dimension - related to the impact of innovations on communities inside and outside the organization; environmental dimension - related to the environmental impacts caused by the use of natural resources and emission of pollutants; economic dimension - related to economic efficiency, linked to profit and the competitive advantages necessary for the existence of the organization (Barbieri *et al*., 2010).

The three dimensions can impact the organization differently according to its activity area. In cooperativism, concern for the community is part of its principles, portrayed primarily in the seventh principle, detailed in the next section.

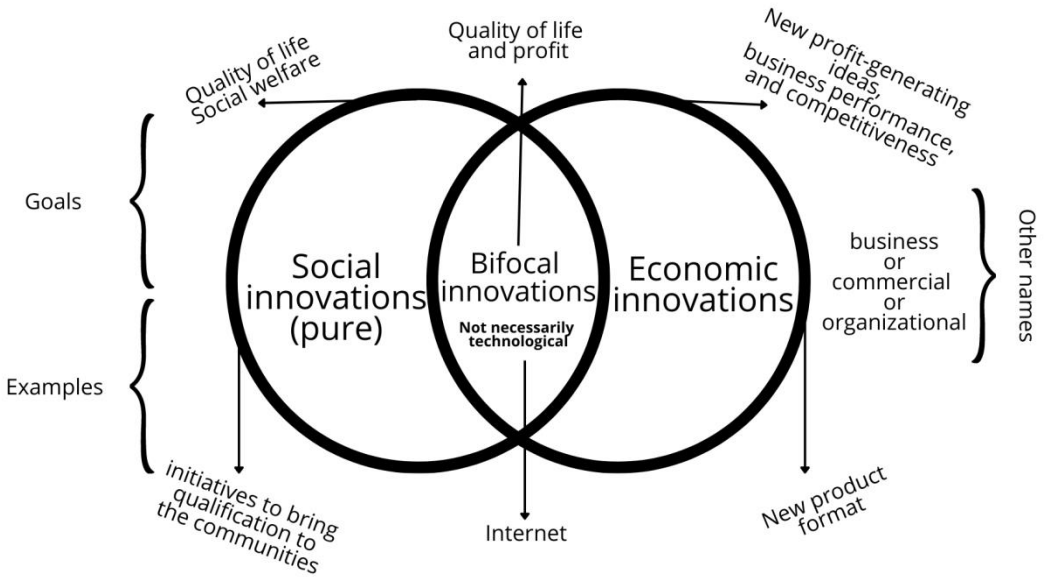
2.2.2 The intersection between social and economic innovation and cooperativism

Social innovation is classified as a set of ideas, actions, and new or considerably improved and lasting knowledge, whose function is to promote overcoming social needs in the most diverse areas through the cooperation and participation of all involved (Bignetti, 2011). This innovation model has a direct connection with the principles of cooperativism, given that it aims to promote social inclusion through the training and empowerment of the actors involved (Juliani *et al*. 2014), which in the case of the cooperative may be the employees, the cooperative members, and the communities in which the cooperative is inserted.

An important concept brought by Juliani *et al*. (2014) is that innovations focused on the economic dimension can become social innovations to the extent that they can potentially improve people's quality of life. In cooperativism, these two ideas go together because the credit cooperative does not operate to make profits; everything it does is offer cooperative members and the community more accessible conditions for credit, providing social equality (Meinen & Port, 2014).

Figure 1 provides a better understanding of this intersection of economic and social innovation purposes.

Figure 1 Types and terminologies of social innovation



Source: Adapted from Juliani *et al*. (2014).

This intersection of social innovations that generate profit and economic innovations that promote social welfare gives rise to bifocal innovations, as shown in Figure 1. In this way, they contribute to the organization's economic development and society by promoting quality of life, inclusion, or other social benefits.

To understand how innovation can meet the sustainable growth objectives of organizations, the following section presents the innovation value chain.

2.2.3 Innovation value chain

A fundamental aspect of innovation to be discussed in companies is generating value for the business. It can leverage growth, promoting greater productivity and competitiveness. To achieve these results, it is necessary to manage the innovation process by conceiving, improving, recognizing, and understanding the routines required for idea generation (Ferreira *et al*., 2019). The innovation value chain management model, developed by Hansen and Birkinshaw (2007) and cited in Ferreira, Aguiar Filho, & Ziviani (2019), is an effective tool for analysis in organizations.

This management model was elaborated based on results obtained in more than 30 multinational companies. It analyzes the effectiveness of innovation in 120 new product projects and 100 corporate business units, presenting a sequential view of three phases: idea

generation, development, and diffusion (Ferreira, Aguiar Filho, & Ziviani, 2019; Ferreira *et al*., 2021).

In its first phase, the innovation value chain contemplates generating ideas, which can be developed in-house and, through cross-pollination, the collaboration between different units. Finally, this first stage also contemplates the search for partners and concepts for generating ideas outside the company.

The second phase, called conversion, deals with the selection of the best ideas, in which the choice and prioritization of innovations that will be developed occur, taking into account the technical and economic feasibility, as well as the degree of difficulty in terms of time, resources, and potential for commercial gain. This stage also considers the mechanisms that allow its funding and the path that the idea takes from suggestion to first results.

The third and last phase, diffusion, deals with disseminating the knowledge generated while developing the idea, which must be shared with the organization and the innovation value chain, involving customers, suppliers, and partners. For the diffusion process to be complete, the commercialization of the new product or the creation of a new business model is necessary (Varandas Junior, Salerno, & Miguel, 2014; Ferreira, Aguiar Filho, & Ziviani, 2019; Ferreira *et al*. 2021). These three links are divided into six main activities, as shown in Table 3.

Table 3 Hansen and Birkinshaw's innovation value chain

Idea Generation			**Conversion**		**Diffusion**
In-house ideas	Collaboration across units (cross-pollination)	External ideas (collaboration)	Idea selection and initial funding	Development of the ideas and first results	Dissemination of the knowledge acquired internally and with the market

Source: Adapted from Varandas Junior, Salerno, and Miguel (2014).

The six steps described in Table 3 refer to the execution of the innovation value chain, and this management should focus more attention and energy on the weakest links or those in which greater difficulties can be overcome (Varandas Junior, Salerno & Miguel, 2014).

Considering that the barriers change according to the reality of each organization and that, in general, companies do not perform well at the three levels, the innovation value chain model proves that it is necessary to understand the internal process of generating innovation as something particular to each organization. It will allow identifying the barriers and ways to overcome them (Varandas Junior, Salerno, & Miguel, 2014).

Ferreira, Aguiar Filho, and Ziviani (2019) understand that the model provides insight into the organization's reality, providing additional insights regarding the conditions under which value is developed in the systematic process of creating innovations.

The definition of innovation strategies is a job that requires planning and structure, considering the importance of reducing risks and increasing the success rate of innovation. Understanding the model of the innovation value chain and building mechanisms for periodic performance monitoring are essential aspects of the sustainability of innovation practices.

To advance in understanding the first stage of the innovation value chain, which highlights the importance of internal contribution (employees) in generating ideas, the following section presents one of the alternatives most used by organizations: the internal program of ideas for innovation.

2.2.4 Internal programs for innovation ideas

The innovation process results from the interaction of the innovative capacity of people and the organization's structure (Ven *et al*., 1999). Thus, the organization needs to stimulate people to develop and implement new ideas, engaging in mutual human interactions to shape the necessary adjustments for the achievement of the desirable performance in an organizational and institutional context, internal and external, in constant change (Ven, Angle, & Poole, 2000).

Thus, an environment prepared for innovation can become a pillar of support for it to occur (Rogers, 1995). Idea generation programs are mechanisms for developing innovation culture (Barbieri, Álvares, & Cajazeira, 2009) and a way to market pressures, provided they are efficiently executed (Meyer, 2020).

Internal idea programs also help fill the gap in the transmission of tacit knowledge in companies, that is, people's concrete know-how, skills, and techniques, as well as the views, perspectives, and mental models with which they perceive and define the world. This type of knowledge is not easily externalized through words but can be transferred when there is a stimulus such as the idea program (Ferreira *et al*., 2019).

Considering that changes are dynamic, an innovation becomes obsolete quickly. Thus, the flow of new ideas should be constant and continuous, which justifies the exploration of employees' creative capacity, making the development or improvement process of products and services more dynamic (Dorow *et al*., 2013).

When there is a structured management of these processes by the intrapreneurial team, there is an increase in incremental innovations (Damiani & Tumelero, 2020). Innovation for incremental improvements can be achieved with quality programs, training, and organizational learning (Tiger, 2014). This ability to think about continuous improvements for products and processes can also be enhanced in contact with customers and users, in moments of inter-cooperation between teams from different areas, and with the collaboration of other companies and institutions (Buchele *et al*., 2014).

In addition to generating new ideas, they must be evaluated, in response to the perceived issues or opportunities posed by the internal and external context of the organization, performing the manipulation or proactive adjustment of ideas according to the circumstances (Buchele *et al*., 2014). In the first stage of the innovation process, the ideas are intended to point out new ways to extend the organization's leadership from specific change management strategies (Buchele *et al*., 2014).

From the organization's perspective, it is necessary to develop a multidimensional context with a support infrastructure oriented to value generation, with an environment that allows innovation to occur (Dobni, 2008). Creating this structure is critical to generating new ideas and exploiting them effectively to achieve sustainable organizational benefits (Flynn *et al*., 2003).

With the proper structure to stimulate the production of ideas, select them, and implement them, the employees' suggestions can help solve problems and prevent non-conformities. The team wins as it develops its potential and is recognized by the organization (Kilian, 2005). It is worth mentioning gains such as expanding intellectual capital, cooperation, creating routines to implement innovative ideas, generating a culture of innovation, and learning from mistakes (Ida & Tumerelo, 2021).

Considering that innovation initiated within organizations, with ideas indicated by employees, is only effective when efficient management of the suggestions are presented, the following section presents suggestions from the ISO 56002/2019 standard.

2.2.5 The ISO 56002/2019 standard - Innovation management

ISO 56002/2019 is a guidance document for organizations looking to implement, maintain, or invest in continuously improving an innovation management system. The standard was published in July 2019, with twenty-six pages dedicated to practical recommendations for companies wanting certification.

The document's guidelines aim at established organizations; however, temporary ones and startups can benefit from applying all or part of it. The recommendations apply to all types of innovation: product, service, process, model, and method, ranging from incremental to radical. The guidelines also contemplate all types of innovation approaches: internal and open innovation, user-oriented, market-oriented, technology-oriented, and design-oriented innovation activities (Associação Brasileira de Normas Técnicas, 2019).

ISO 56002/2019 does not detail the activities the organization should perform but provides general guidance; thus, it does not indicate specific requirements, tools, or methods for innovation activities (Associação Brasileira de Normas Técnicas, 2019).

The standard also meets the UN Sustainable Development Goals - SDGs, connecting with SDGs four, eight, and nine, as per Figure 2.

Figure 2 SDGs related to ISO 56002/2019

Source: Associação Brasileira de Normas Técnicas (2019).

By meeting the SDGs 4 - Quality education, 8 - Decent work and economic growth, and 9 - Industry, innovation, and structure, the ISO 56002/2019 standard reinforces the importance of innovation for the world's sustainable development. It confers adherence to the objective of this work, which provides for the creation of a practical instrument that can be applied in credit cooperatives to promote continuous improvement in innovation programs and the internal generation of ideas. Thus, innovation can become a sustainable growth tool for cooperatives and their communities.

2.3 SIMILAR EXPERIENCES IN BRAZIL AND THE WORLD

The following are studies that present similar experiences with internal programs of ideas for innovation in Brazil and in the world, obtained through a systematic literature review.

2.3.1 Similar experiences in Brazil

In the Brazilian territory, Dorow *et al*. (2013) analyzed barriers and facilitators for generating ideas in a small-sized consulting firm that works directly with innovation in Florianópolis - SC. The behavioral factor was one of the main barriers identified. This could be verified during the realization of actions that gave employees free time to think of new ideas; some were reluctant to share. The image of the leader also proved to be an essential point; the perception of the followers about an innovative profile in their leader can act as an inhibiting or promoting factor for innovation. The research also identified that the fear of error is another factor that discourages the participation of employees. Finally, the research indicates autonomy, training, and the promotion of techniques for generating ideas to stimulate a culture of innovation in organizations.

Quandt *et al*. (2014) investigated idea management initiatives in 41 large companies in southern Brazil. The research allowed for the identification of idea management practices, benefits, obstacles, and determinants of initiative adoption. Of the companies analyzed, 70% have structured programs to solicit, stimulate, evaluate, implement, and reward ideas offered by employees. The authors identified that internal idea programs promoted a greater capacity to generate and transform ideas into projects, as well as an increase in participation, teamwork, and motivation among employees.

Concerning difficulties in implementing ideas programs, Quandt *et al*. (2014) reported low staff involvement, communication failures, and absence or insufficient rewards. The authors further describe that for innovation outcomes to be positive, ideas programs must be underpinned by aspects of the organization's culture, behavior, and processes in order to promote learning, absorption, and knowledge sharing.

Rosa Vendler and Maçaneiro (2018) analyzed the elements of the innovation culture of the internal environment in five Brazilian companies in the construction industry. The results show that the cultural elements "stimulus to innovation" and "open communication" are vital in guiding innovative behaviors and strategies. It was found that the element "stimulus to

innovation" encourages the adoption of strategies in the companies researched through internal sources such as awards, bonuses, and suggestion boxes, which encourage employees to seek innovative solutions and new ways to perform activities, enhancing innovations in processes. The "open communication" element also contributes to adopting innovation strategies through aspects of the internal environment, such as communication channels. This effectively disseminates information related to processes, which is relevant for introducing these strategies, considering that the more the employees know about the company's processes, the more they can contribute to their success and improvement.

Pimentel, Loiola, and Diogo (2020) analyzed the occurrence of learning by experience and the development of collective skills as results of a program aimed at building a culture of innovation in a business school located in the city of Curitiba - PR. The idea generation program worked from a structure with five stages: 1) understanding the challenge proposed by the company, 2) generating ideas, 3) ideation, 4) action planning, and 5) pitching.

As the action was carried out with groups, one of the results was broadening the participants' awareness of the collective nature of innovation. Another aspect identified by the research was overcoming limiting beliefs, which contributed to the change toward creating a culture of innovation. The participants realized it is possible to carry out a project together without this being conditional on prior training because collective production allows one to learn by doing and do by learning. This ability can be used in the reconstruction of the innovation culture. Using a method previously defined and reconstructed throughout the experience was the basis for this new meaning, in which innovation came to be understood as an achievement in constant motion that requires substantial behavioral changes (Pimentel, Loiola, & Diogo, 2020).

Ida and Tumelero (2021) conducted a study to describe the innovation strategy and results of an idea-generation program at a Brazilian bank. Although the strategy is well grounded, the authors identified no clarity regarding measuring the outcome of the implemented innovations. In the company analyzed, the internal program of ideas for innovation boosted both incremental technological innovation (product, services, and process) and the culture of innovation, generating financial and non-financial results. The program uses financial and non-financial rewards to recognize the best ideas from employees. In the bank, the innovation process occurs in three stages: ideation, when employees can suggest ideas for the solution of problems previously pointed out by the directors; selection, when a jury chooses the ideas with the most significant potential for implementation and results; implementation, when the selected ideas will be transformed into innovations. As for social contributions, Ida

and Tumelero's research (2021) shows that a bank's idea generation program effectively boosts technological innovation and innovation culture, becoming an alternative that allows it to face fintechs and other competitors in the financial market.

2.3.2 Similar experciences around the world

A study conducted by Bocken and Geradtsc (2020), with senior, senior, and mid-level managers in six multinationals (Interface, a carpet manufacturer; Philips, a capital goods conglomerate; Unilever, a rapidly evolving consumer goods company; AkzoNobel, a paint and chemicals company; Johnson & Johnson, a pharmaceutical company; and Pearson, an education and publishing company), discusses sustainable business model innovation. The study portrays that when a company operates strategically emphasizing innovation, it must invest in developing people capabilities related to training, recruitment, and development programs.

The research presents corporate bureaucracy as an operational barrier, obstructing innovation by slowing decision-making and complicating resource provision. Another aspect is the lack of time available to think about innovation and implement the ideas; the work overload also puts the employee in a position of having to choose between delivering the daily production and projects or doing an "extra" activity of innovating.

Bocken and Geradtsc (2020) suggest that people's capacity needs to be developed, and an innovation framework for capacity building, resources, an incentive scheme, and performance metrics must be provided to foster an environment that enables generation.

Luqmani, Leacha, and Jessona (2017) analyzed the factors that underpin sustainable organizational innovation at a global carpet manufacturing company in the UK. In analyzing how the team developed the internal idea generation process, the authors identified a strong impact of intrapreneurship, used to describe highly motivated individuals within companies who act as catalysts, linking ideas to applications and pursuing growth. By interviewing the group members, the authors identified the importance of relationships in encouraging employees to perform activities beyond typical work practice, such as coming up with new ideas, identifying resource needs, or reviewing established processes and products, which is encouraged by an innovation team.

The team was responsible for finding, evaluating, prioritizing, and seeking funding for innovation projects. The approach chosen by the innovation professionals was to formalize the process for supporting and accelerating "collaborative breakthrough" and "breakthrough"

ideas. Employees were encouraged to independently seek out and develop their own innovation projects and then present them for evaluation and improvement. In terms of contextual factors, the success of the company's innovation projects was related to skills and experiences developed within the team; commitment to a social purpose - which caused the team to broaden their search and consequently make an unusual connection; permissive management approach - allowing a "safe failure space" for the team to learn from failures and eventually find the breakthrough; and the creation of a high-level sustainability vision, public engagement, and entrepreneurial culture (Luqmani, Leacha & Jessona, 2017).

Batistic *et al*. (2022) surveyed three private companies in the European Union to analyze the direct and interactive influence of leadership attachment styles and the Human Resources system of commitment on two distinct stages of the individual innovation process - idea generation and implementation. The research reinforces Luqmani, Leacha, and Jessona's (2017) finding on organizational slack, which is addressed by Batistic *et al*. (2022) as freedom for creative thinking, allowing individuals to focus on an idea for longer, fundamentally allowing workers to move beyond their ordinary daily habits and dedicate themselves to the full development of creative ideas in an incubation period.

The authors point out that employees need a sense of control, psychological, and participatory security to achieve creativity. The company's Human Resources sector can contribute to the idea-generation process by providing training and performance evaluation of development or job rotation, allowing individuals to gain more knowledge and skills (Batistic *et al*., 2022).

Regarding the impact caused by leadership, the authors also reinforce the finding of Luqmani, Leacha, and Jessona (2017) by highlighting that social relationship seems to be the key to leveraging the implementation of ideas. According to the authors, an open, supportive relationship with the line manager helps stimulate creativity and provides crucial political leverage in idea implementation.

Batistic *et al*. (2022) suggest that applying a secure attachment style across leadership roles may be easier than overhauling and changing existing Human Resources systems. This can be done by advising the leader on the forms of attachment they can build with team members by providing specific training.

The authors also point out that idea generation and implementation are inherently related; idea generation without implementation leads to poor business value and may not be sufficient to sustain competitive advantage. Thus, idea generation and implementation represent two sides of the same micro-innovation coin but require different resources and

contextual influences, which can be mutually exclusive. It is imperative in the policy aspect to provide employees with support and resources to implement their ideas, as generating abundant creative ideas without implementing them can cause more inconvenience than simply not using enough resources in idea generation (Batistic *et al*., 2022).

Asch *et al*. (2022) conducted a national innovation tournament reaching out to directors of 474 internal medicine residency programs in the United States. The goal of the tournament was to generate innovative ideas to raise suggestions in the following areas: resident wellness and personal and professional development, resident education and clinical preparation, resident sleep and alertness, and patient safety.

The program used a prize pool to encourage participation in both submission and ranking. The incentive structures created were lottery-based, rewarding participation volume and submission quality and giving all participants a random chance to win a certain cash prize. 128 residents and 36 directors from different programs submitted 328 ideas.

For Asch *et al*. (2022), online innovation competitions effectively engage large audiences to solve specific problems. The process must be engaging, so the use of rewards is essential. Moreover, innovation competitions are helpful not only for identifying solutions but also for identifying problems. Among the research findings, the authors identified the need to involve those who live the reality of the organization, as it is difficult to recognize problems or design changes externally. Effective innovation requires understanding the context, and effective implementation requires a sense of co-creation and buy-in.

Furthermore, the authors also suggest prioritizing problems over solutions. Leading with solutions can restrict the peripheral vision needed to obtain solutions widely. On the other hand, leading with problems can produce vague complaint sessions. Requiring stakeholders/collaborators to identify problems and suggest solutions can help circumvent both pitfalls.

Finally, there is a need to embrace automation. One advantage of innovation competitions is that existing platforms can provide automation to make them easy for participants and those organizing the tournament (Asch *et al*., 2022).

Experiences with internal programs for generating ideas for innovation in Brazil or in other countries, presented in this section, portray common aspects, such as the behavioral difficulty and blocking of individuals, the influence of leadership, the importance of training for teams and leaders, the existence of reward programs (which was the most cited motivator), and, from an operational point of view, the need for automation of the internal program for generating ideas for innovation. This shows that stimulating innovation through ideas from

employees or members of an organization is a complex process, with familiar facilitators and barriers, regardless of the location.

2.4 CONSIDERATIONS ON THE CHAPTER

The theoretical and practical references presented in this chapter aim to provide a basis for analyzing the relationship between the seven principles of cooperativism in this business model and to present the particularities of the cooperative credit segment, highlighting its differences concerning the conventional financial institution model: the bank.

In the section dedicated to innovation, aspects that connect the interest in the sustainable growth of cooperatives and the possibilities that innovation offers so that this objective can be pursued were explored. Therefore, the section also presents the innovation value chain, which enables conditions under which value is developed in the systematic process of creating innovations and indicates ways to measure results and promote adjustments. In this context, internal programs of ideas for innovation were presented as an alternative to developing a culture of innovation. Finally, similar experiences adopted in organizations in Brazil and other countries with internal programs of ideas for innovation were presented.

The next chapter presents the methods used to operationalize this study to ensure it meets the research objectives.

3 RESEARCH METHOD AND TECHNIQUES

3.1 RESEARCH DESIGN

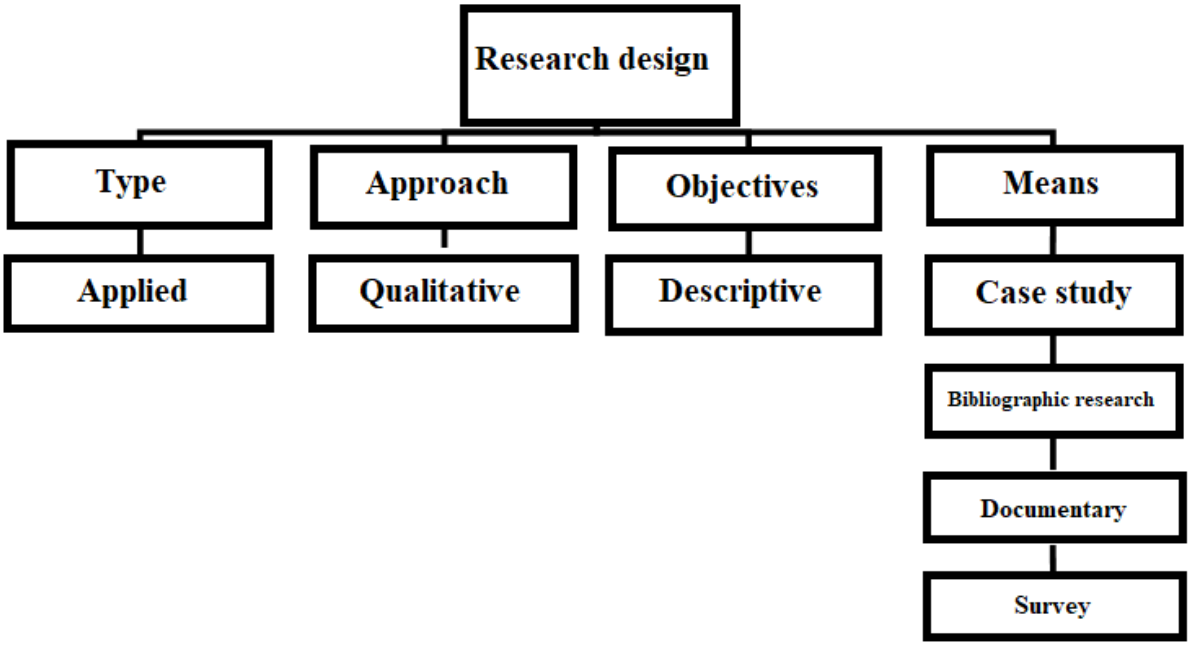
This applied research seeks to solve concrete, practical, and operational issues (Zanella, 2009). It aims to identify the relationship of the principles of cooperativism in implementing a program of innovation and the internal generation of ideas in a credit cooperative.

The approach is qualitative, which, according to Creswell (2010), refers to the analysis of a particular phenomenon in a unique setting, which allows the researcher to immerse themselves in the search for details and actual experiences to get to the goal.

The perspective adopted is the positivist, descriptive character, considering that it aims to evaluate and describe the relationships between the following variables (Godoy, 1995): principles of cooperativism and innovation programs focused on ideas arising from employees. Yin (2001) describes that the case study is a method that should be applied in studies that aim to find answers to questions "how?" and "why?" in contexts where the researcher has little control over contemporary phenomena.

It is configured as survey research, given that it uses questionnaires and interviews as an instrument of data collection (Fonseca, 2002) and documentary because it considers the analysis of materials for dissemination of the internal innovation program for employees and the analysis of the internal portal in which the ideas are registered and the program information can be accessed. A systematic literature review was also carried out, which allowed for mapping scientific research in a specific area to identify the evolution of knowledge on the subject over the analyzed period (Petticrew & Roberts, 2008). Figure 3 presents the research design.

Figure 3 Research Design



Source: Research data (2022).

Thus, the research has an applied nature and a descriptive qualitative approach, and the means used to conduct it were a case study, bibliographic and documental research, and a survey. The following section details the data collection procedures.

3.2 DATA COLLECTION AND ANALYSIS PROCEDURE

3.2.1 Systematic literature review

The systematic literature review allows a detailed mapping of the bibliography in a specific research area to identify the principal authors and the evolution of knowledge on the subject over the analyzed period (Petticrew & Roberts, 2008). This review addresses the literature concerning innovation programs and internal idea generation, focusing on mapping the characteristics mentioned with more significant recurrence with respect to the process and its effectiveness in generating innovation in organizations. Between October 2021 and March 2022, searches were conducted on the Capes journal portal and the Elsevier electronic database by subject search (without specifying journal, book, or base).

The indexed descriptors used for the search were "ideas program for innovation" and "internal," and "ideas management" and "innovation", considering their versions in English.

The inclusion criteria used in the search consisted of a) access to the abstracts and full texts in Portuguese and English, b) publication in the period between 2012 and 2022, c) indexation of the article in a scientific journal, and d) investigation of the internal theme program of ideas for innovation.

The delimitation of this publication period is justified by the transformations in the innovation scenario, in which technological changes have required greater capacity to generate and absorb innovations from companies and all economic agents (Ferreira *et al*., 2019). The criteria for exclusion of articles were a) texts from books, newspapers, and non-scientific journals, theses, and dissertations, papers presented at conferences (as abstracts, papers, or conferences); b) articles that address the topic of innovation management, but do not mention innovation programs and internal idea generation, excluded articles that address idea programs for innovation in the context of open innovation; c) articles not made available in full and languages listed; and d) articles with restricted access (paid). The search results are detailed in Table 4.

Table 4 Number of articles found in the Capes database, according to inclusion criteria

Keyword	Filter	Period	Total articles	Reading of titles, abstracts, keywords / selected
Innovation program AND internal	Containing the terms in the title or abstract or keywords.	2012 to 2022	31	2
Program for ideas AND innovation			132	5
Idea management AND innovation			62	8
Total of selected articles				15

Source: Research data (2022).

In the searches on the Capes Platform, 205 articles were found. The articles were organized and tabulated using a Microsoft Excel spreadsheet. First, thirty duplicate articles and twenty-five articles with restricted access (paid) or without access to the abstract or the full text were excluded. The titles and abstracts of the remaining two hundred and eight articles were read. In this phase, one hundred and eighty studies were excluded that do not specifically contemplate the theme "innovation program and internal generation of ideas," not being selected articles that deal with ideas arising from programs of open innovation, given that the focus of this research is the participation of employees in programs of ideas for innovation in organizations. Finally, twenty-eight articles were read in their entirety, and fifteen were selected.

A new search was performed on the Elsevier platform, as this was the base where more articles on the subject were found in full and free versions. In the general search, 70 articles were found, of which only two were selected. When performing this evaluation, it was observed that most of the articles on the research theme, available free of charge, came from the journal Long Range Planning - International Journal of Strategic Management. Thus, a new specific search was conducted within it; the indexed descriptors used for the two searches were "corporate innovation," "internal innovation," and "ideas for innovation program." The exclusion criteria were the same as in the Capes search. In this second search, fifty-eight articles were found. After the exclusion of paid articles or articles not available in full, the titles and abstracts of seventeen articles were read. Of these, only two were related to the research topic. Thus, the two searches resulted in four more articles, as shown in Table 5.

Table 5 Number of articles found in the Elsevier database, according to inclusion criteria

Keyword	**Filter**	**Period**	**Total articles**	**Reading of titles, abstracts, keywords/selections**
General search within the Elsevier database				
Corporate innovation	Containing the terms in the title or abstract or keywords.	2012 to 2022	30	1
Internal innovation			15	0
Ideas for innovation program			25	1
Search on *Long Range Planning - International Journal of Strategic Management*				
Corporate innovation	Containing the terms in the title or abstract or keywords.	2012 to 2022	5	1
Internal innovation			3	0
Ideas for innovation program			50	1
Total of selected articles				4

Source: Research data (2022).

The classification and differentiation of the contents addressed were performed with nineteen articles selected. Then, it was evaluated the relevance of the contents to the objective of this review, and finally, it was developed the grouping of related themes (Oliveira, 2008). The purpose was to prepare a synthesis on the research on the theme innovation program and internal generation of ideas, between 2012 and 2022, disclosed in the scientific publications analyzed, to identify which factors most mentioned in the literature for the success of an internal innovation program.

The next section presents the steps taken to conduct the document research.

3.2.2 Document research

The document research took place through the evaluation of the information that the Cresol Confederation makes available to employees on its internal innovation program website. The researcher also had access to internal disclosure materials requested during the interview with the person responsible for the program and the innovation area of the Cresol Confederation. The data were analyzed to identify which aspects found in the systematic literature review, considered fundamental for the success of an internal innovation program, are contemplated by Cresol with regard to the information made available and the incentives given to promote a culture of innovation in the cooperative.

The following section details how the construction of the primary data collection instruments was carried out.

3.2.3 Primary data collection instruments

The basis for the creation of the primary data collection instruments (questionnaires and structured interviews) was drawn from the findings in the systematic review (8 key aspects for the success of an internal ideas program for innovation), and the seven cooperative principles and the ISO 56002/2019 standard - Innovation Management, which originated a checklist that can be used to evaluate or structure an innovation and internal idea generation program in a credit cooperative (Appendix C).

The semi-structured interviews were the first data collection instruments used. The first was applied to the person responsible for the cooperative's innovation and idea generation program (Appendix A); the second was applied to the superintendent of the singular *Cresol Progresso* (Appendix B).

To understand how the program of innovation and internal generation of ideas is perceived in terms of its connection with the cooperative principles, in the three levels of the cooperative - confederation, central, and individual cooperatives - a structured interview was conducted through the checklist (Appendix C). It was applied to the coordinator of the innovation sector of the central, who also answered the interview whose terms are presented in Appendix A.

Two other questionnaires were also applied, one to the superintendents of the 20 cooperatives that are allocated in the *Cresol Baser* central office, one of the confederation's four central offices (Appendix D), and the other (Appendix E) was sent to the board of the

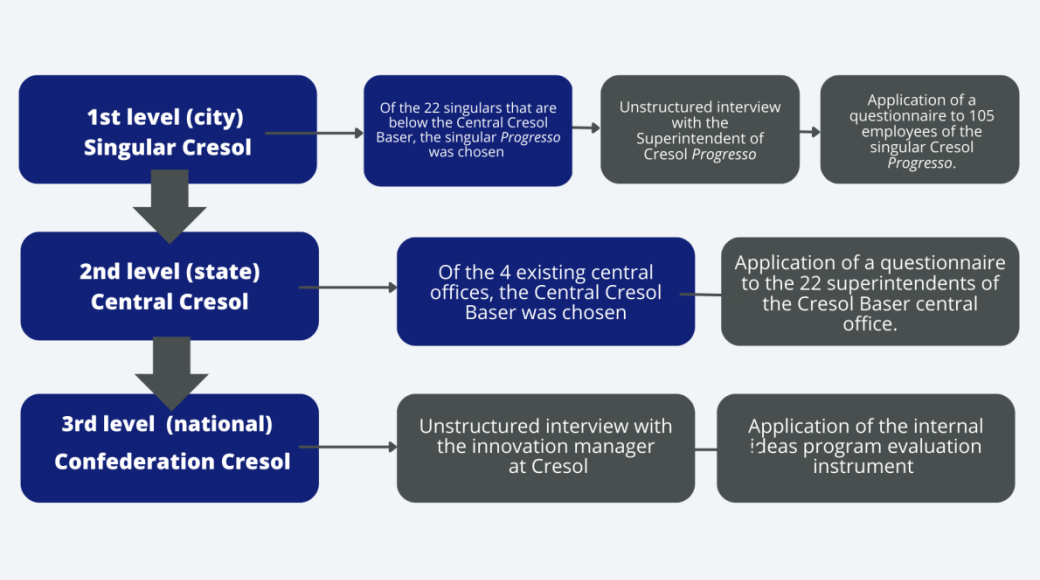
singular *Cresol Progresso*, operated in Cascavel, which directed the survey to its 105 employees, working at the third level of the cooperative, who manage the branches and serve the cooperative's members. Both questionnaires aimed at extracting the perception of the interviewees in relation to their connection with the cooperative principles.

Likert scales were used in the questionnaires. The respondents marked their degree of agreement about each statement, on a scale with five positions (*bad* and *good* as negative evaluations, and *great* and *excellent* as positive, mediated by the neutral alternative). Both questionnaires also had an open question so that the respondents could present their considerations.

The data collection instruments (2 questionnaires and 1 checklist) have the same theoretical basis for elaboration, which generates a connection between them. All three bring the principles of cooperativism and contemplate issues related to the management processes of the Internal Innovation Program. The difference between them is only the direction of the questions according to the type of involvement with the program. For example, the checklist deals directly with issues related to the structure of the program, given that the person responsible for the process answered it, while the questionnaires bring questions that connect with the routine of the program according to its users.

The detailing of the application of the collection instruments, according to the hierarchical levels of the credit cooperative under study, is represented in Figure 4.

Figure 4 Detailing the data collection process at Cresol



Source: Research data (2022).

The research contemplates the three levels of the cooperative, being the singular ones in the first level, which, according to article 7 of Law 5764/1971, are characterized by the direct provision of services to members (Brazil, 1971). For this step, the Singular *Progresso* was chosen as reference, headquartered in Cascavel - PR. The choice was made by convenience, considering its location, the easiest access to data, and the contact with collaborators and leaders of the cooperative. It counts on 105 employees who are daily the target of the innovation program, considering that they are the ones who execute the operations, use the systems, and sell the cooperative's products. This way, they are involved with what is most important for the brand, improving the service and the quality of the products and web tools, such as the application, for the cooperative members (customers).

Cresol's second level is formed by the four central offices (Baser, Sicoper, Central *Brasil*, and Cresol *Nordeste*), which offer all the support to the branches. The centrals are divided by territory of operation, in which the individual cooperatives and their branches are located. The central cooperatives and federations of cooperatives aim to organize, in common and on a larger scale, the economic and welfare services of interest to the affiliates, integrating and guiding their activities, and facilitating the reciprocal use of services, according to article 8 of Law 5764/1971 (Brazil, 1971).

For this research, due to the convenience related to the region of operation and greater ease of access, the Baser central was used as reference, which is responsible for 20 singular cooperatives of Cresol, in cities in Paraná, Santa Catarina, Rio Grande do Sul, Minas Gerais, Espírito Santo, Goiás, Mato Grosso, Rondônia, São Paulo, Rio de Janeiro, and Amazonas. Each singular is managed by an executive management team, composed of a superintendent director, a commercial director, and an administrative director. Therefore, at this second level of the cooperative, the target population for the questionnaire was the 22 superintendents. The choice of the superintendents was because they lead the executive management team, composed of one administrative director and one commercial director, being the figure with the greatest influence and decision-making power regarding the cooperative's operational and strategic decisions at this governance level.

Finally, the third level of the organization is the confederation, which is the owner of the Cresol brand. According to the Brazilian National Cooperativism Policy, which establishes the legal framework for cooperative societies and other provisions, in article 9 of the Cooperative Law, the cooperative confederations have the objective of guiding and coordinating the activities of the affiliates in cases which the size of the enterprises exceeds the capacity or convenience of the centrals and federations (Law 5764/1971). The central is

responsible for creating bylaws, managing operations and programs, such as ideas for innovation. Thus, the application of the evaluation instrument, through the proposed checklist, was done at this level.

Therefore, to guide the evaluation of the ideas management program for innovation in the credit cooperative, which is one of the objects of this research, it was developed an assessment instrument, which can be considered a checklist model (Appendix C). Sections 1, 2, and 3 of the checklist were developed based on the literature findings from a systematic review on internal innovation ideas programs (Andrade, Lago, & Stabile, 2022) and based on the ISO 56002/2019 standard. Table 6A presents the distribution of themes, questions, and authors.

Table 6 Cross-referencing themes and authors

Continues

Questions	Authors
Session 1 - Questions related to the main influencing factors for idea generation	Dorow *et al.*, 2013; Borchardt & Santos, 2014; Quandt *et al.*, 2014; Borchardt & Santos, 2014; Sérgio, Gonçalves & Souza, 2015; Froehlich, 2016; Thom, 2016; Luqmani, Leacha & Jesson, 2017; Vargas *et al.*, 2017; Vendler & Maçaneiro, 2018; Bockena & Geradtsc, 2020; Valdati *et al.*, 2020; Pimentel, Loiola & Diogo, 2020; Sales *et al.*, 2019; Batistic *et al.*, 2021; Ida & Tumelero, 2021.
Session 2 - Questions related to idea generation techniques	Dorow *et al*., 2013; Borchardt & Santos, 2014; Borchardt & Santos, 2014; Buchele *et al*., 2015; Thom, 2016; Froehlich, 2016; Thom, 2016; Vargas *et al*., 2017; Luqmani, Leacha, & Jesson, 2017; Vendler & Maçaneiro, 2018; Sales *et al*., 2019; Pimentel, Loiola, & Diogo, 2020; Bockena & Geradtsc, 2020; Valdati *et al*., 2020; Batistic *et al*., 2021; Asch *et al*., 2022.
Session 3- Questions related to idea management processes	Dorow *et al*., 2013; Borchardt & Santos, 2014; Quandt *et al*., 2014; Sérgio *et al*., 2015; Sérgio, Gonçalves, & Souza, *2015;* Froehlich, 2016; Thom, 2016; Luqmani, Leacha, & Jesson, 2017; Vargas *et al*., 2017*;* Vendler & Maçaneiro, 2018; Sales *et al.*, 2019; Sérgio & Gonçalves, 2019; Bockena & Geradtsc, 2020; Valdati *et al*., 2020; Ida & Tumelero, 2021, Asch *et al*., 2022.
Questions related to the evaluation and selection of ideas	Borchardt *& Santos*, 2014; Quandt *et al*., 2014; Buchele *et al*., 2015; Sérgio *et al*., 2015; Sales *et al*., 2019*;* Bockena & Geradtsc, 2020; Valdati *et al*., 2020; Asch *et al*., 2022), modelos de premiação e critérios (Dorow *et al*. 2013; Borchardt & Santos 2014; Quandt *et al.* 2014; Buchele *et al*., 2015; Thom, 2016; Vargas *et al*., 2017; Vendler & Maçaneiro, 2018; Sales *et al.*, 2019; Ida & Tumelero, 2021; Asch *et al.*, 2022.
Questions related to idea implementation and feedback	Dorow *et al*., 2013; Quandt *et al*., 2014; Buchele *et al*., 2015; Froehlich, 2016; Sérgio *et al*., 2015; Sérgio, Gonçalves, & Souza, 2015; Thom, 2016; Vargas *et al*., 2017; Vendler & Maçaneiro, 2018*;* Sérgio & Gonçalves, 2019; Sales *et al*., 2019; Valdati *et al*., 2020; Pimentel, Loiola, & Diogo, 2020*;* Batistic *et al*., 2021.

Questions related to results evaluation	Borchardt & Santos, 2014; Sérgio *et al*., 2015; Valdati *et al.*, 2020; Ida & Tumelero 2021.

Source: Research data (2022).

ISO 56002/2019 served as a foundation for the questions originating from the systematic review, since this document provides guidance for implementing, maintaining, and continuously improving the innovation management system through management practices for fostering organizational innovation.

Thus, the instrument's questions, arising from the findings of the systematic review, were crossed with the practices suggested by ISO 56002/2019, as detailed in Table 7.

Table 7 Cross-referencing the findings in Andrade, Lago, and Stabile's (2022) study with the ISO 56002/2019 standard

Continues

Factors influencing the production of innovative ideas in the organization	
Systematic review	**ISO 56002/2019**
1.1 The organization's mission, vision, and values contemplate innovation	This question finds support in item D - Culture, of the innovation management principles, and in chapter 4 – Context of the organization, in items 4.4 - Establishing the innovation management system and 4.4.2 - Culture.
1.2 Employees have autonomy to present new ideas	This question is supported in chapter 7 - Support, item 7.1 - Resources, sub-item 7.1.2 - People.
1.3 The organization is an environment that offers psychological security for employees to innovate	This question is supported by item F - Managing uncertainty, of the innovation management principles.
1.4 The organization promotes socialization, group formation, and networking among employees	This question is supported by item E - Exploiting insights, of the innovation management principles.
1.5 Internal communication is effective in disseminating information about innovation programs	This issue is supported by chapter 7 - Support, item 7.4 - Communication.
1.6 The organization offers an environment with creative stimulus	This question is supported by item C - Strategic direction, from the principles of innovation management.
1.7 The organization offers training that stimulates thinking about new alternatives for processes, products, and services	This question is supported by item C - Strategic direction, of the innovation management principles.
1.8 The leadership stimulates, encourages, and welcomes the presentation of innovative ideas	This question is supported in item B – Future-focused leaders, of the innovation management principles and in chapter 5, which deals with the attributions of the leadership in the innovation process.
1.9 The organization is risk-oriented, accepts mistakes, and encourages experimentation	This question is supported in the innovation management system section, in the item Managing uncertainty and risk.
1.10 The organization has some sort of award, reward, or stimulus program for innovative ideas	This question is supported in chapter 5 - Leadership, item 5.2 - Innovation policy, sub-item 5.2.1 - Establishing the innovation policy.
1.11 The organization has a sector or professional responsible for mapping the market (competition, potential opportunities, and risks)	This question finds support in chapter 7, which deals with support, item 7.7 - Strategic intelligence management.
Idea Generation Techniques	
2.1 The organization promotes forums to stimulate dialogue about innovation among employees	These questions are validated in chapter 7, which deals with support, in items 7.3 Awareness and 7.6 Tools and methods.
2.2 The organization encourages meetings outside working hours to stimulate dialogue about innovation	
2.3 The organization has innovation agents or a responsible person or an innovation sector	
2.4 The organization offers some time in the employees' workload to dedicate to thinking about innovations	
2.5 The organization usually performs brainstorming to raise ideas and suggestions	This question is supported in item E - Exploiting insights, of the innovation management principles.
2.6 The organization has an idea pool	This question is supported in chapter 7 - Support, item 7.1 Resources, sub-item 7.1.6 - Infrastructure.

Conclusion

Factors influencing the production of innovative ideas in the organization	
Systematic review	**ISO 56002/2019**
Idea Generation Techniques	
2.7 The organization holds innovation events (hackathons, journeys, competitions)	This question is supported in chapter 8 - Operation, item 8.2 - Innovation initiatives.
2.8 The organization has defined personas and empathy map that are accessible to all employees	These questions are supported in item C - Strategic direction, from the Principles of innovation management.
2.9 The organization has and is available to all the value proposition	
2.10 The organization encourages employees to act and think as owners (internal entrepreneurship)	
Idea management processes	
3.1 The organization has an idea evaluation and selection process	These questions find support in chapter 9 - Performance evaluation, items 9.1 Monitoring, measurement, analysis, and evaluation, 9.2 Internal audit, and 9.3 Management review.
3.2 The criteria for the selection of ideas are clear and disseminated to all	
3.3The organization provides feedback to all participants in the idea generation program	
3.4 Deployed ideas are disseminated to everyone	
3.5 It is possible to track the implementation status of ideas	
3.6 The organization has control over the resources generated or saved from the implemented ideas	

Source: Research data (2022).

ISO 56002/2019 was used for the proposition of the assessment instrument, given that it is also a document that provides guidance for the establishment, implementation, maintenance, and continuous improvement of an innovation management system for use in organizations (Associação Brasileira de Normas Técnicas, 2019).

Although ISO 56002/2019 provides general guidelines on innovation management, it deals with the issue in a broad manner. Conversely, in the assessment instrument proposed here, only issues related to the idea generation program and its link with the seven cooperative principles is considered, justifying the ISO cutout and the proposition of a new instrument. Thus, the instrument does not replace the ISO, but only brings new issues that are of specific interest to credit cooperatives.

In its section 4, the instrument has a general framework of the seven principles of cooperativism (Delfino, Land & Silva, 2010), detailing their main areas of connection with products, services, and processes, in order to identify whether the ideas implemented are related to or meet the basis of the cooperative organizational culture, as described in Table 8. The results of the interview (Appendix B) with the director superintendent of Cresol *Progresso* served to compose this section 4 of the checklist in order to map possible products, services,

and processes related to each of the seven principles of cooperativism, which were also used to prepare some of the questions of the questionnaires for the cooperative's employees and superintendents.

Table 8 Principles of cooperativism and related products and services

Principle	Possible products, services, and processes related to the principle
1°- Open and Voluntary Membership	Opening of accounts (sending and processing of documents), digital signature, simplification, digital account, facilities by APP, statute, territorial expansion, metaverse.
2° - Democratic Member Control	Pre-assemblies and OGAs during the pandemic, possibility to exercise voting and others.
3° - Members' Economic Participation	Share capital, payment of interest, payment of surplus, and others.
4° - Autonomy and Independence	Projects that facilitate access to information about the cooperative for governance at different levels (board members and delegates) and others.
5° Education, Training, and Information	Annual performance report, sending letter about interest and surplus payment, training programs for governance and employees in the context of pandemic, LGPD, FATES management and others.
6° Cooperation Among Cooperatives	Training programs for the community, volunteer registration, social-environmental responsibility, project management (a tool for launching and checking the completion of actions), and others.
7° Concern for community	Training programs for the community, volunteer registration, socio-environmental responsibility, project management (a tool for launching and checking the completion of actions), and others.

Source: Research data (2022).

In total, the evaluation instrument has thirty-two questions, with three answer options that predict whether the aspect is fully met, partially met, or not met by the organization. At the end of the checklist, it is possible to identify which aspects should be considered as alerts in the internal program of ideas for innovation.

3.2.4 Data analysis procedures - Content analysis

The methodology used for data processing was Content Analysis, based on what Bardin (1977, cited in Mendes & Miskulin, 2017) suggests.

To develop this study, the first concern was with the quality of the data collected; therefore, oral records, obtained through the two semi-structured interviews, were considered. The first interview (Appendix A) was conducted with the person responsible for the innovation program at Cresol Confederation, based on the pre-established script and the possibilities of new questions that arose during the conversation, through a remote channel. The interview allowed us to clarify details about the operation of the program and the structures available,

such as the team, means of dissemination and collection of suggestions for innovation. This interview lasted 1:30 hours and was transcribed for later analysis.

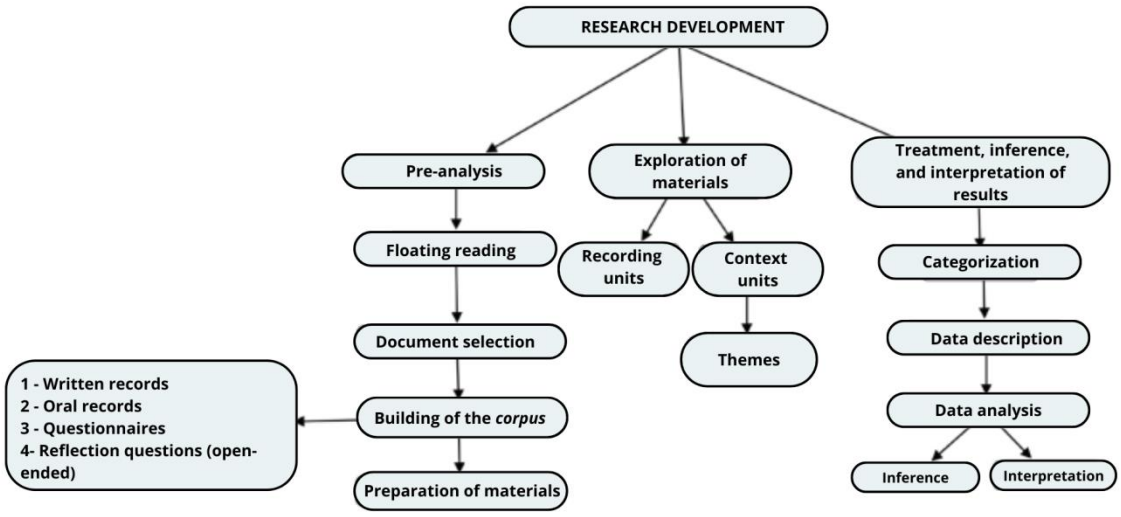
The second interview was conducted in person with the superintendent of the cooperative Cresol *Progresso*. The choice was by convenience, given the ease of face-to-face contact. This interview was based on a semi-structured script (Appendix B), whose purpose was to identify which products and services of the cooperative's operational routine could be related to the cooperativism principles and innovation. This interview lasted one hour and was transcribed for later analysis.

To compose the research *corpus*, three questionnaires were applied: one for the cooperative's employees (50 respondents), another for superintendents (13 respondents), with the aim of crossing their perception about the innovation program and the cooperativism principles, and the data made available by the program coordinator, who also answered the third questionnaire evaluating the credit cooperative's innovation program. The questionnaires also contained reflective questions, which allowed the respondents (superintendents and employees) to report possible adjustments in the program.

Written records were also analyzed, such as the data available on the website of Cresol's innovation lab and the dissemination materials made available to invite employees to participate by suggesting ideas in the internal program of ideas for innovation. This is one of the main means by which the innovation lab receives suggestions for operational improvements or new products and services.

All steps, based on what Bardin (1977, cited in Mendes & Miskulin, 2017) and Franco (2008) suggest, are presented in Figure 5.

Figure 5 Content Analysis Development



Source: Adapted from Mendes and Miskulin (2017).

The first phase of content analysis was the organization of data, to perform the reading and choice of documents in order to constitute the corpus of the research, i.e. the set of documents that will be subjected to analytical procedures (Bardin, 1977, cited in Mendes & Miskulin, 2017). The pre-analysis was performed including float reading, which was a contact with the data in order to have an initial perception of the messages contained therein, allowing to generate impressions, representations, emotions, and knowledge (Franco, 2008).

In the stage of choosing the documents, to validate the use of each of them, they were submitted to Bardin's rules (1977, cited in Mendes & Miskulin, 2017), presented in Table 9.

Table 9 Rules for choosing the documents for the *corpus*

Bardin's Rules	Considerations about the rule's compliance
Rule of exhaustiveness The questions must be exhausted, contemplating aspects not mentioned or requested, giving the participants the opportunity to present their personal reflections on the theme.	The semi-structured interviews and the open-ended questions were designed with the purpose of meeting this rule, considering that they allowed for a deeper understanding of the theme. As for the questionnaires, reflection questions were included, allowing the respondents the opportunity to bring up issues not dealt with in the multiple-choice questions.
Rule of representativeness The sample should be a representative part of the initial universe.	The research counted a sample that corresponded to half of the universe under analysis. Thus, the rule was considered met.
Rule of homogeneity All documents must be homogeneous, following precise selection criteria.	The documents selected corresponded to this rule, since the basis for the questionnaires, checklist, and semi-structured interviews was the same: 7 principles of cooperativism, 8 characteristics found in the systematic review, and recommendations from the ISO 56002/2019 standard.
Rule of relevance The documents chosen must correspond to the objective that prompts the analysis.	The choice of documents also complies with this rule, since they were prepared with the purpose of helping to answer the research objective and research question.

Source: Research data (2022).

Once the four rules of choice of material for the construction of the *corpus* of the Content Analysis were met, the recommendations of Bardin (1977, cited in Mendes & Miskulin, 2017) were followed. The next step refers to the preparation of the material, which was performed according to the data in Table 10.

Table 10 Organization of the material that composes the *corpus*

Type of material	Elements that compose it
Written records	Content available on the laboratory's website and in the materials to which the researcher had access (a booklet announcing the program and a PDF presentation of the results of the laboratory's first year of operation).
Oral records	Transcription of the two semi-structured interviews, totaling 2h 30m of speeches.
Questionnaires	Multiple-choice questions (Likert scale) applied to employees, superintendents, and the innovation program manager at the Cresol Confederation.
Reflection questions	Reflection open-ended questions in the 3 questionnaires for respondents to express their perceptions and make suggestions.

Source: Research data (2022).

The next step of material exploration was performed in order to find units of registration and units of context, as presented in Table 11.

Table 11 Recording units - initial themes

Themes	Observations about the groupings
Insufficient dissemination of the innovation program	The participants reported in the open questions and in the multiple-choice questions that the level of ignorance of the operation and rules of the innovation program is high.
Attractions to employee participation	The respondents from both user groups of the innovation program reported that they would like to have incentives (awards) for the suggestion of ideas and/or implemented ideas.
Local innovation ambassadors	The need to have in the local (singular) and regional (central) contexts people dedicated to work on the topic of innovation in a closer way to the employees was recurrent in the suggestions of the reflective questions and in the multiple-choice questions.
Innovation training	The participants of the innovation program considered the level of training on innovation insufficient, generating agreement among the employees and leaders that this area needs more investment.
Employment of more technology and innovation in manual work	A recurring request in the reflective questions was the adoption of more innovations for the continuous improvement of processes in the cooperative, especially in those that still require more manual work, affecting the time of service accomplishment.
Continuous improvement of digital channels	In the reflection questions, the request for more attention to digital channels was also recurrent.
Governance understanding of innovation	This issue was dealt with recurrently in the answers to the reflective question addressed to the superintendents.
Investments	Only the superintendents, in the reflection question, presented this issue.
Development of a culture of innovation	This issue recurred in the responses of the superintendents to the reflective question.
Resistance to change	This issue recurred in the superintendents' answers, in the reflective question.
Lack of clear methodology	This issue recurred in the employees' and superintendents' answers to the reflective question and the multiple-choice questions.
Lack of events to promote collective discussion about innovation	This issue was recurrent in the answers of both groups and confirmed in the checklist about the program, which showed that the cooperative has not used this resource.
Empathy map and persona	This theme became evident from findings in the literature. When confronted with the strategies used by the innovation program of the Cresol Confederation, it was confirmed that this resource is not used in its entirety.

Source: Research data (2022).

From these thirteen themes, a regrouping was carried out in search of confluences and disparities among them. From this analysis, the six thematic axes were found, presented in Table 12.

Table 12 Thematic axes

Thematic axes	Initial themes
Considerations about training	Innovation training
Considerations about innovation culture	Development of a culture of innovation Investments Local innovation ambassadors Resistance to change Governance understanding of innovation Empathy map and persona
Considerations about incentives and awards	Attractions to employee participation Lack of events to promote collective discussion about innovation
Considerations about program methodology	Lack of clear methodology
Considerations about communication failures	Insufficient dissemination of the innovation program
Considerations about operational improvements	Employment of more technology and innovation in manual work Continuous improvement of digital channels

Source: Research data (2022).

The materials presented in Table 13 served as a basis for arriving at the six thematic axes.

Table 13 Instruments used according to thematic axes - recurrence

Continues

Thematic axes	Mentions	%
Considerations about training		
Written records	1	20
Oral records	0	0
Questionnaires	0	0
Reflection questions	4	80
Considerations about innovation culture		
Written records	0	0
Oral records	1	3
Questionnaires	17	55
Reflection questions	13	42
Considerations about incentives and awards		
Written records	0	0
Oral records	1	4
Questionnaires	32	78
Reflection questions	8	18
Considerations about program methodology		
Written records	1	3
Oral records	1	3
Questionnaires	31	91
Reflection questions	1	3
Considerations about communication failures		
Written records	0	0
Oral records	0	0
Questionnaires	37	96
Reflection questions	1	4

Thematic axes	Mentions	%
Considerations about operational improvements		
Written records	1	1
Oral records	1	1
Questionnaires	94	96
Reflection questions	2	2

Source: Research data (2022).

Table 12 presents the origin and recurrence of each thematic axis based on the analysis of each instrument used in the corpus of this content analysis. The numbers under "questionnaire" correspond to the number of people who answered some questions related to the axis that considered the cooperative's performance negative in that aspect.

In the *considerations about training*, the subject was dealt with in the annual summary material of actions of the innovation laboratory of the Cresol Confederation and appeared another four times in the reflection questions, with requests for greater investments in the training of the teams, as an incentive for their participation in the program.

The *considerations about innovation culture* appear in the oral records in a semi-structured interview with the person responsible for the laboratory of the confederation, considering that he explained what the efforts to develop the culture are in the cooperative. The theme appears in the question about the level of innovation of the cooperative perceived by the employees; 17 respondents answered considering this factor as negative. The importance of the theme is proven with the other 13 appearances in the reflection questions, in answers from employees and superintendents who consider that it is necessary to advance in several aspects regarding the cooperative's culture of innovation.

In the *considerations about incentives and awards*, the theme appears in the semi-structured interview with the person responsible for the innovation sector of the confederation, in the questionnaire applied to the employees. 32 considered negative the level of incentives for the participation in the program; in the reflection questions, 8 presented suggestions from the employees and superintendents to expand the incentives and awards to stimulate the participation of the cooperative.

The *considerations about the program methodology* are present in all the documents analyzed. They appear once in the written records, on the program's website, in which the methodology is detailed to allow the enrollment of the innovative idea; once in the oral records, in the semi-structured interview with the person responsible for the laboratory; and in the questionnaire applied to employees, in which 31 of them consider their level of knowledge

about the operation of the innovation program negative. In the reflection questions, there is a comment from a superintendent about the need to highlight and make clearer the methodology for the teams to understand how to participate in the innovation program.

Regarding the *considerations about communication failures*, the theme appears in both questionnaires, from the employees and the superintendents, where 37 of them consider negative the communication efforts in the disclosure of the cooperative's innovation program, which aims to stimulate the suggestion of ideas for innovation. The need to dedicate more space to the disclosure of the program also appears as a suggestion in the reflective questions.

The *considerations about operational improvements* had the highest number of mentions. They appeared in all the records. It occurs once in the written records, considering that in the annual report that presents the results of the innovation laboratory the operational innovations implemented are reported. The theme also appears in the two semi-structured interviews, considering that the laboratory coordinator highlighted that the laboratory exists with the purpose of promoting operational improvements in the cooperative. The subject is also evident in the interview with the superintendent, since her goal was to relate products and services to the seven principles of cooperativism and innovation. In the questionnaires, both groups (employees and superintendents) were also asked to analyze the level of innovation in products and services within each principle, which justifies the high number of mentions, 94. This number does not indicate that 94 respondents consider the improvements negative; as they are distributed in 10 different questions, this reflects the high number of times that the respondents analyzed and gave their opinion on the topic, indicating whether they considered positive or negative the innovation efforts in each area related to the cooperative principles. Finally, the theme appears twice more in the reflection questions, with suggestions for technological improvements to reduce some manual bureaucratic work and the request for continuous improvement in the cooperative's digital channels.

For the next step, the definition of the categories of analysis, the entire previous context was analyzed to understand the root of each need and theme exposed by the participants. This root was considered as a category of analysis capable of supporting the different thematic axes, as presented in Table 14.

Table 14 Analysis Categories

Analysis Categories	Thematic Axes
Investments	Considerations about incentives and rewards Considerations about innovation culture Considerations about operational improvements
People training	Considerations about training Considerations about the program methodology
Comunicação	Considerations about communication failures

Source: Research data (2022).

Each of the contexts was analyzed separately from the recurrences and excluding contexts in each one. This allowed the thematic axes to be reorganized, in the same way as the themes were organized, to establish the categories of analysis. In this process, it was essential the triangulation of data, which is an attempt to deeply understand a studied phenomenon, aiming to combine methods, empirical materials, observations, and observation perspectives as a strategy to obtain greater rigor, comprehensiveness, complexity, and depth (Denzin & Lincoln, 2006).

In order to meet methodological rigor, the categories of analysis were subjected to the principles stipulated by Bardin (1977, cited in Mendes & Miskulin, 2017) and Franco (2008).

The first principle is that of mutual exclusion. Bardin (1977, cited in Mendes & Miskulin, 2017) determines that each element cannot be in more than one category. The categories of analysis stipulated in Table 13 meet this principle.

The second principle is that of homogeneity. This principle determines that a single principle should determine the organization of a category (Bardin, 1977, cited in Mendes & Miskulin, 2017). In this sense, it was sought to stipulate categories that would allow contemplating all the data, in a homogeneous way, according to the themes established in the previous stages of analysis.

The third principle is relevance. This principle guides the allocation of categories, so that they are relevant to the chosen material of analysis. This research meets this requirement as each category was established not only based on the available data, but also are connected to the entire theoretical basis of this research, contributing to the elucidation of the central research question.

The fourth principle, objectivity and fidelity, refers to the coding of materials that, even if different, should be part of the same categorical grid and should be coded in the same way (Bardin, 1977, cited in Mendes & Miskulin, 2017). When proposing the categories, it was expected that they would be objective, that is, that they could be applied throughout the analysis.

The fifth principle is that of productivity, which refers to the set of categories that allow producing indexes of inferences, new hypotheses and accurate data (Bardin, 1977, cited in Mendes & Miskulin, 2017).

From the results, it can be inferred that the areas that require greater attention from the cooperative in efforts to develop the innovation program, which involves the laboratory and the internal program for the generation of ideas for innovation, are investments, training, and communication. Based on the content analysis, it was performed a proposal of actions for the improvement of the internal innovation program of Cresol, which will be detailed in section 4.3 of this research.

The following are the limitations of the chosen methods and techniques.

3.3 LIMITATIONS OF RESEARCH METHODS AND TECHNIQUES

The greatest difficulty faced in the research was with data collection. Although all the authorizations of the institution under analysis - Cresol - have been granted by the top leadership for the application of the questionnaires, the adhesion in both levels was low. Among the employees, less than half answered the questionnaire, even with the reinforcement of the local leadership about the importance of contributing to a research that would help the cooperative itself to improve its innovation processes. The adhesion to the questionnaire by the superintendents was also low; a little more than half of the sample responded. In this case, a possible justification may be the disputed agenda of the group, which is responsible for the top management of the unique cooperatives of the central Cresol Baser.

Another limitation identified after the data analysis was the non-application of the research in the different levels of cooperative governance: fiscal and administrative councils. This issue was raised in the results of the survey conducted with the superintendents who indicated in their responses the impact that governance has on decisions related to innovation in the cooperative.

The next chapter details the analysis and interpretation of the results obtained through data collection.

4 ANALYSIS AND INTERPRETATION OF RESULTS

4.1 RESULTS OF THE SYSTEMATIC LITERATURE REVIEW ON INNOVATION PROGRAMS AND INTERNAL IDEA GENERATION

The results presented in this section are derived from the reading and classification of categories mentioned in the 19 articles of the systematic literature review, according to the steps detailed in chapter 3, section 3.2.1, in order to classify fundamental characteristics for the success of innovation programs in different countries and diverse areas of operation. This classification allowed the listing of eight main aspects, which are factors of influence for the generation of ideas, the most used idea generation technique, idea management processes, evaluation and selection of ideas, awarding models, implementation of ideas and feedback, evaluation of results, and obstacles to innovation. The eight aspects are presented in the following sections.

4.1.1 Factors that influence internal idea generation

Regarding the factors that influence the generation of ideas among the employees of a company, the authors of the analyzed articles agree that there is a set of factors that make an organizational environment more conducive to innovation and that aspects related to organizational culture have a considerable impact on the potential for internal generation of ideas. Table 15 presents the factors considered most relevant in this process.

Table 15 Principles of cooperativism and possible related products, services, and processes

Most frequently cited influence factors	
Mission, vision, and values of the organization	Dorow *et al*., 2013; Quandt *et al*., 2014; Rosa Vendler & Maçaneiro, 2018;
Autonomy	Thom, 2016; Dorow *et al*., 2013; Pimentel, Loiola, & Diogo, 2020; Valdati *et al*., 2020.
Psychological security	Batistic *et al*., 2022.
Socialization / group formation / networking	Dorow *et al*., 2013; Borchardt & Santos, 2015; Sérgio, Gonçalves, & Souza, 2015; Thom, 2016; Vargas *et al*., 2017; Pimentel, Loiola, & Diogo, 2020.
Internal communication	Dorow *et al*., 2013; Borchardt & Santos, 2015; Froehlich, 2016; Thom, 2016; Vargas *et al*., 2017; Rosa Vendler & Maçaneiro, 2018; Valdati *et al*., 2020; Pimentel, Loiola, & Diogo, 2020; Ida & Tumelero, 2021.
Environment with creative stimulus	Dorow *et al*., 2013; Borchardt & Santos, 2015; Froehlich, 2016; Thom, 2016; Vargas *et al*., 2017; Rosa Vendler & Maçaneiro, 2018; Valdati *et al*., 2020; Pimentel, Loiola, & Diogo, 2020.
Training	Dorow *et al*., 2013; Borchardt & Santos, 2015; Froehlich, 2016, Batistic *et al*., 2022.
Leadership	Dorow *et al*., 2013; Quandt *et al*., 2014; Rosa Vendler & Maçaneiro, 2018; Thom, 2016; Valdati *et al*., 2020; Ida & Tumelero, 2021; Batistic *et al*., 2022.
Risk-taking orientation, acceptance of error, experimentation	Luqmani, Leacha, & Jesson, 2017; Rosa Vendler & Maçaneiro, 2018; Ida & Tumelero, 2021.
Rewarding/rewarding/potential stimulus	Buchele *et al*., 2014; Borchardt & Santos, 2015; Dorow *et al*., 2013; Quandt *et al*., 2014; Sérgio *et al*., 2015; Froehlich, 2016; Thom, 2016; Vargas *et al*., 2017; Rosa Vendler & Maçaneiro, 2018; Ferreira *et al*., 2019; Ida & Tumelero, 2021.
Market (competition, potential opportunities, and risks)	Sérgio *et al*., 2015; Thom, 2016; Ferreira *et al*., 2019.

Source: Research data (2022).

Although there is no consensus regarding the factors, some aspects were mentioned in most articles, such as the existence of a form of award, reward, or some kind of stimulus, mentioned in eleven publications; internal communication, mentioned in nine researches; and an environment with creative stimuli, highlighted in eight articles.

Regarding the aspects mission, vision, and values, the organization as a whole must be clear about where it wants to go (Dorow *et al*., 2013), being this a premise to understand how and in which areas to innovate is more important. This clarity is guiding for the innovation strategy (Quandt *et al*., 2014) and directs the behavior of the organizational actors (Rosa Vendler & Maçaneiro, 2018).

Autonomy is highlighted as fundamental in the process, given that one of the levels at which innovation occurs is the individual one (Dorow *et al*., 2013; Thom, 2016; Pimentel, Loiola, & Diogo, 2020). Working first individually and then together generates ideas with higher quality (Valdati *et al*., 2020). The other level is the group level, a factor commonly

highlighted in research. Socialization, group formation, and networking in organizations are considered stimuli for innovation, considering that the moments of information exchange allow the sharing of needs and opportunities and the discussion of ideas to solve them or make them possible (Dorow *et al*., 2013; Borchardt & Santos, 2015; Sérgio, Gonçalves & Souza, 2015; Thom, 2016; Vargas *et al*., 2017; Pimentel, Loiola & Diogo, 2020).

Internal communication is advocated as a means of integrating teams around the theme of innovation (Borchardt & Santos, 2015; Thom, 2016; Rosa Vendler & Maçaneiro, 2018; Valdati *et al*., 2020), with emphasis on the use of the intranet as a channel for spreading the innovative culture, through the dissemination of company aspects, idea generation programs, relevant themes, reflection forms, and awards (Dorow *et al*., 2013; Froehlich, 2016; Vargas *et al*., 2017; Pimentel, Loiola, & Diogo, 2020; Ida & Tumelero, 2021).

Those authors also highlighted the importance of an environment that stimulates creativity (Froehlich, 2016; Thom, 2016; Rosa Vendler & Maçaneiro, 2018; Valdati *et al*., 2020). For them, it is necessary that the organization enable the enrichment of the experience and the learning of skills (Pimentel, Loiola, & Diogo, 2020). Moreover, it should be pleasant, quiet, and relaxed (Dorow *et al*., 2013), with creative stimuli, cultural, and pleasurable activities, open to themes and areas that are not directly related to the business, such as movie sessions, considering that they can be used as a source of inspiration, stimulating creativity (Borchardt & Santos, 2015; Vargas *et al*., 2017).

Training is also an important factor in the innovation process (Dorow *et al*., 2013; Borchardt & Santos, 2015; Froehlich, 2016). They allow the worker to accumulate more and more knowledge and to share it with others in the organization (Vargas *et al*., 2017).

The role of leadership has been treated as fundamental (Dorow *et al*., 2013; Quandt *et al*., 2014; Rosa Vendler & Maçaneiro, 2018), given the power of influence over the group (Valdati *et al*., 2020), the importance of encouragement by managers (Ida & Tumelero, 2021), and the posture of this actor who treats the employee as a partner and not just as a subordinate by developing a cooperative and appreciative work (Thom, 2016), showing that their ideas are welcome.

Risk-taking orientation is noted as a mechanism to encourage creativity and encourage the development of new ideas (Rosa Vendler & Maçaneiro, 2018), providing an environment that accepts error as part of the innovation process (Ida & Tumelero, 2021).

The use of rewards, awards, and timely stimulation was the factor mentioned with the highest recurrence in the research analyzed (Borchardt & Santos, 2015; Quandt *et al*., 2014; Thom, 2016; Buchele *et al*., 2014; Rosa Vendler & Maçaneiro, 2018; Ida & Tumelero, 2021).

Finally, the factor with one of the lowest incidences in the research analyzed was market and competition, with a view to potential opportunities and risks (Sergio *et al*., 2015). This aspect was highlighted with a factor, given that some markets require a constant innovation movement, which directs strategic action and organizational culture (Ferreira *et al*., 2019). Technological progress and the intensity of competition are also part of the market context of innovation (Thom, 2016).

4.1.2 Internal idea generation techniques

Eight techniques to stimulate the internal generation of ideas were mapped. These are: holding forums, meetings between employees outside working hours, innovation agents in the company, working hours dedicated to innovation, brainstorming, idea pools, innovation events, and questions and expressions to stimulate thinking in an innovative manner, creating a persona, empathy map, mapping the company's value proposition, and internal entrepreneurship. The distribution according to the authors is described in Table 16.

Table 16 Internal idea generation techniques mentioned

Internal idea generation techniques	
Forum	Dorow *et al*., 2013; Borchardt & Santos, 2015; Valdati *et al*., 2020; Batistic *et al*., 2022.
Meetings outside working hours	Dorow *et al*., 2013; Batistic *et al*., 2022.
Innovation agents	Dorow *et al*., 2013; Borchardt & Santos, 2015; Luqmani, Leacha, & Jesson, 2017.
Working hours dedicated to innovation	Dorow *et al*., 2013; Luqmani, Leacha, & Jesson, 2017.
Brainstorming	Buchele *et al*., 2014; Froehlich, 2016; Pimentel, Loiola, & Diogo, 2020;
Idea pools	Borchardt & Santos, 2015; Buchele *et al*., 2014; Thom, 2016; Froehlich, 2016; Thom, 2016; Vargas *et al*., 2017; Rosa Vendler & Maçaneiro, 2018;
Events	Froehlich, 2016; Rosa Vendler & Maçaneiro, 2018; Asch *et al*., 2022.
Persona creation and empathy map	Pimentel, Loiola, & Diogo, 2020.
Value proposition of the organization	Luqmani, Leacha, & Jesson, 2017; Pimentel, Loiola, & Diogo, 2020
Internal entrepreneurship	Luqmani, Leacha, & Jesson, 2017.
Questions and expressions	Ferreira *et al*., 2019

Source: Research data (2022).

Forums stimulate the exchange of knowledge (Borchardt & Santos, 2015), allowing ideas to be presented and discussed (Valdati *et al*., 2020). Thus, they act as systems that enable interaction between people, as well as meetings outside of working hours, which stimulate the exchange of information between employees and influence the emergence of new ideas (Dorow *et al*., 2013).

The innovation agents offer organizational support, facilitating the access to the idea pool system and giving feedback on the ideas after evaluation (Borchardt & Santos, 2015). The agent also plays the role of motivating and feeding the teams with market information that indicates possible ways to make the idea viable (Dorow *et al*., 2013). Another strategy used to encourage the production of ideas is the allocation of part of the employee's workload for this activity.

The research conducted by Dorow *et al*. (2013) presents the example of an innovation company that operates with the 6/2 model, in which 2 daily hours are dedicated to the improvement of ongoing projects or development of new ideas. The sharing of company information through a database was another aspect pointed out as a facilitator for internal idea generation (Borchardt & Santos, 2015; Rosa Vendler & Maçaneiro, 2018; Valdati *et al*., 2020).

The brainstorming technique was highlighted for allowing freedom and creativity, as it encourages that no idea is judged as wrong or absurd (Dorow *et al*., 2014). Brainstorming can be used both in the process of generating and enriching ideas (Buchele *et al*., 2014), being considered as a problem solving method (Froehlich, 2016) or a discussion and prioritization process (Pimentel, Loiola, & Diogo, 2020).

The idea pool was the motivator of new ideas most cited by the authors, given that it relates to the technological capability of the organization, characterized as a set of functional skills, of which the database, which supports the idea pool, is part (Vargas *et al*., 2017).

The use of specific software for idea management allows reducing the duration of processing, from presentation to implementation, ensuring that none is lost (Thom, 2016). Besides hosting ideas, it can allow the exchange of knowledge (Borchardt & Santos, 2015), influencing the generation of new ideas (Buchele *et al*., 2014). Thus, only collecting ideas may no longer meet the need of organizations; it is necessary to treat them in a systematic way, enabling a communication channel and participation of employees (Ferreira *et al*., 2019).

Events are presented as an alternative to increase the volume of ideas from specific themes or problems in a short space of time (Froehlich, 2016). They can also be campaigns aimed at developing activities in a more productive way (Rosa Vendler & Maçaneiro, 2018).

The creation of the persona, empathy map, and value proposition are highlighted as stages of the ideation and action plan processes. The first two occur in parallel, because when defining the persona the group humanizes the relationship of the idea with those who will use it or benefit from it. The third stage aims to operationalize the idea by identifying the elements needed to meet the needs of the persona (Pimentel, Loiola, & Diogo, 2020).

With regard to internal entrepreneurship, it is a proactive attitude of employees in identifying opportunities to innovate that contributes to the organization's goal achievement, project designing, and seeking budget approval for their realization. The roles of some employees seemed to be entirely based on entrepreneurship, which is the case of sector leaders (Luqmani, Leacha, & Jesson, 2017).

For Ferreira *et al*. (2019), there are questions and expressions that can be used as a stimulus for innovative thinking. They bring up aspects related to how to reduce time, material, or process steps.

4.1.3 Idea management processes

The nineteen papers analyzed provided five different idea management processes. The findings were startup model, corporate project office, committee composed of professionals from different areas, idea management system (IMS), and management made for the company's top management. The distribution of the articles according to the process presented is detailed in Table17.

Table 17 Idea management processes

Idea management processes	
Startup model	Dorow *et al*., 2013.
Corporate project office	Borchardt & Santos, 2015; Luqmani, Leacha, & Jesson, 2017.
Committee with professionals from several areas	Quandt *et al*., 2014; Ida & Tumelero, 2021; Asch *et al*., 2022.
Idea management system - IMS	Sérgio *et al*., 2015; Sérgio, Gonçalves, & Souza, 2015; Thom, 2016; Ferreira *et al*., 2019; Sérgio & Gonçalves, 2019; Valdati *et al*., 2020; Ida & Tumelero, 2021, Asch *et al*., 2022.
Activities of the organization's top management	Froehlich, 2016; Vargas *et al*., 2017; Rosa Vendler & Maçaneiro, 2018.
No deliberate report of such formal process	Buchele *et al*., 2014; Pimentel, Loiola, & Diogo, 2020.

Source: Research data (2022).

The startup model encourages that the group itself (all are considered partners), composed of the authors of the idea, evaluate and identify whether it is feasible, from the answer to questions such as who is the customer and what is the problem (Dorow *et al*., 2013). The corporate project office manages the ideas considered strategic to the organization, those with the greatest potential for transformation and alignment with the strategic guidelines. The office can add new ideas registered in the pool as part of an ongoing project, as a complement

and improvement of the project. It is also responsible for issuing follow-up reports (Borchardt & Santos, 2015).

The committee made up of professionals from different areas was also presented as a solution for the idea management process in the organizations. The committee works from a regulation, with specific criteria for evaluating the ideas brought by employees. The multiplicity of backgrounds and visions allows a systemic look at each suggested idea (Quandt *et al*., 2014).

The IMSs are the most cited by the authors of the analyzed articles. Seven papers mention the advantages and suggest stages, criteria, and system models so that the innovation process in organizations is more efficient.

The IMSs arise with the purpose of integrating the innovation process to the software process (Sérgio, Gonçalves, & Souza, 2015). Valdati *et al*. (2020) advocate a model composed of the following steps: 1) preparation, generation, and collection of ideas; 2) filtering, grouping, and categorization; 3) enrichment, evaluation, selection, and prioritization; 4) refinement; 5) feedback and follow-up; 6) storage (Valdati *et al*., 2020). IMSs also allow idea managers to increase analysis capabilities by having control of the total output processing (Thom, 2016). Ida & Tumelero (2021) complement the idea management process from IMSs by mentioning a framework to classify them from the degree of innovation, within the following categories: products and services, business innovation, innovation in distribution and logistics, and innovation in administration and management.

Within the IMS theme, the idea mining process is characterized as an important aspect, which allows to explore among the ideas entered, especially when the volume is large, something that is of interest to the company at that moment (Sérgio & Gonçalves, 2019).

The role of governance was also highlighted. In two of the papers analyzed, the management of internal innovation program is directly and solely linked to top management (Vargas *et al*., 2017; Rosa Vendler & Maçaneiro, 2018). This is explained by the responsibility that requires the definition of a structure with clear roles and responsibilities, as well as the project plan and budget.

4.1.4 Evaluation and selection of ideas

The ideas evaluation process is another important management step, but the success of this selection depends on two factors: the quality of the available ideas and the selection process

(Buchele *et al*., 2014). Table 18 presents the aspects considered most important for the evaluation step of idea selection.

Table 18 Aspects for the evaluation of ideas

Aspects for the evaluation of ideas	
Degree of development risk of the new idea Social and environmental impacts	Sérgio *et al*., 2015.
Financial viability	Quandt *et al*., 2014; Sérgio *et al*., 2015; Sérgio, Gonçalves, & Souza, 2015; Ferreira *et al*., 2019.
Existence of technology and expertise available to develop the idea, technical feasibility	Sérgio *et al*., 2015; Quandt *et al*., 2014.
Technological, market, business, and economic risks	Valdati *et al*., 2020.
Uniqueness of the proposal Utility Technical feasibility Profitability Efficiency Agility Time and cost reduction	Quandt *et al*., 2014
Contribution to the company's image	Ferreira *et al*., 2019

Source: Research data, 2022.

Borchardt and Santos (2015) identified in the organization they evaluated the division of this stage into three moments: (1) analysis of the idea - at this point, if adjustments are needed, the employee who submitted the idea is called to contribute; (2) approval of the idea - at this stage the manager of the area that will be covered by the suggestion is consulted; (3) implementation - a team is formed for this purpose, composed of the creator and two technicians, at least one of which is indicated by the manager of the area benefited.

In this part of the process, other aspects should also be considered: the degree of risk of development of the new idea and the social and environmental impacts (Sérgio *et al*., 2015). Valdati *et al*. (2020) complement that there can be technological, market, business, and economic risks. It is also necessary to evaluate the existence of technology and available competence to develop the idea (Sérgio *et al*., 2015).

Quandt *et al*. (2014) add other relevant aspects, covering the evaluation of the idea regarding the alignment with the company's mission, the probability of success, and the degree of novelty. The aspect that found greater consensus among researchers is the need to evaluate the financial feasibility for the implementation of the idea (Quandt *et al*., 2014; Sérgio *et al*., 2015; Sérgio, Gonçalves, & Souza, 2015; Ferreira *et al*., 2019), contemplating the cost of development, production, commercialization, and subsequent promotions (Valdati *et al*., 2020).

In terms of criteria, the analysis process may also include aspects that affect the company, customers, or employees, these being the uniqueness of the proposal, usefulness, technical feasibility, and the potential benefits translated into results (profitability, efficiency, agility, and time and cost reduction) (Quandt *et al*., 2014).

Ferreira *et al*., (2019), also highlight the aspect related to process improvement. It should also analyze the idea producibility, which represents the producer's perspective in relation to the ease with which the service can be implemented and produced, in addition to gauging the scope of the proposal and the contribution that the idea can bring to the company's image (Ferreira *et al*., 2019).

With regard to the ideas classification, Froehlich (2016) highlights that the ideas can generally meet needs related to products, processes, and sustainability, a perception shared by Valdati *et al*. (2020). Those related to products are associated with the development of markets, forms of customer relationships, sales methods, improvement of product performance, or ideas to improve the existing mix in the organization (Froehlich, 2016).

Regarding processes, ideas can be related to raw materials, alternative suppliers, and optimization of technical characteristics of products (Froehlich, 2016; Valdati *et al*., 2020). They can also refer to performance improvement in existing services for external or internal customers (internal customer-supplier relationship).

In the sustainability aspect, the author highlights ideas focused on the development of social actions with stakeholders. These are focused on the occupational health and safety of the team, such as actions to reduce work accidents and ideas that allow the elimination of substances that impact the environment, either in the disposal (elimination in the disposal) or in its rationing (elimination of the use of a particular non-renewable input) (Froehlich, 2016).

4.1.5 Award models and criteria

Of the 19 articles analyzed, five did not present a reward or award model for the internal ideas program. The suggestions are presented in Table 19.

Table 19 Award models

Awards	
Public Recognition	Quandt *et al*., 2014; Thom, 2016; Ida & Tumelero, 2021.
Miles and trips	Quandt *et al*., 2014; Ida & Tumelero, 2021.

Time off	Quandt *et al*., 2014; Rosa Vendler & Maçaneiro, 2018.
Monetary rewards	Quandt *et al*., 2014; Thom, 2016; Rosa Vendler & Maçaneiro, 2018; Ida & Tumelero, 2021.
Participation in national or international congresses Time off work to participate in post-graduate courses Training Specialized courses in your area of expertise Visits to technical fairs of the sector	Borchardt & Santos, 2015.

Source: Research data (2022).

In the company researched by Dorow *et al*. (2013), rewards are not used because the organization believes that this type of motivation would become obsolete over time. Buchele *et al*. (2014) also highlight an informal process in which the company understands that participation in the program is already a gain, given the benefits for the development of individual potential. Quandt *et al*. (2014), when researching large companies in southern Brazil, identified that 85% of the organizations reward all good suggestions, not only those considered strategic.

Among the forms of reward, the most recurrent are public recognition (Quandt *et al*., 2014; Thom, 2016; Ida & Tumelero, 2021), miles and trips (Quandt *et al*., 2014; Ida & Tumelero, 2021), time off (Quandt *et al*., 2014; Rosa Vendler & Maçaneiro, 2018), and monetary rewards (Quandt *et al*., 2014; Thom, 2016; Rosa Vendler & Maçaneiro, 2018; Ida & Tumelero, 2021). Reward can also be voluntary and based on symbolic and collective rewards, such as job maintenance (Ida & Tumelero, 2021). Borchardt and Santos (2015) point out that the awards proposed by employees are also related to learning opportunities and exchange of experiences with peers, such as participation in national or international conferences, time off work to attend graduate courses, training, specialized courses in their area of expertise, and visits to industry technical fairs.

Borchardt and Santos (2015) suggest that the award should extend to the evaluators and the implementation team as a form of incentive for them to effectively commit to the evaluation and implementation activities of the ideas. Thom (2016) reinforces by pointing out that explicit recognition should reach heads of organizational units, who are rich in ideas, and evaluators who work carefully, fairly, and quickly.

As a scoring system for awards, a suggested model is to assign three points for innovation, three for impact on results, two for comprehensiveness, three for feasibility, and four for the evaluation/implementation status (Borchardt & Santos, 2015). The awarding of the points accumulated in the internal ideas program occurs in December of each year, considering that ideas can be suggested throughout the twelve months (Froehlich, 2016). Employees who

suggest selected ideas receive an award in points, which may increase as the idea evolves for implementation and/or execution (Vargas *et al*., 2017). Regarding the scoring, the criteria should encourage the employee's contribution up to the moment of execution, stimulating participation in the implementation, encouraging teamwork, and evaluating the nature of the idea (Ferreira *et al*., 2019).

4.1.6 Idea implementation and feedback

The time between the delivery of the idea and the clear and structured evaluation, according to understandable evaluation criteria, is configured as an organizational challenge (Thom, 2016). This process portrays a finding of this research: the difficulty faced by companies to organize the implementation process and, especially, the feedback process in internal idea generation programs. Eight of the nineteen articles analyzed do not present how the idea deployment process and the feedback to participants occur (Dorow *et al*., 2013; Quandt *et al*., 2014; Sérgio *et al*., 2015; Sérgio, Gonçalves & Souza, 2015; Vargas *et al*., 2017; Rosa Vendler & Maçaneiro, 2018; Sérgio & Gonçalves, 2019; Pimentel, Loiola, & Diogo, 2020).

The selection of ideas should be done in a formal process, through immediate feedback provided to idea generators (Buchele *et al*., 2014); more than knowing if an idea was chosen, the employee wants to know why (Thom, 2016). This disclosure of the candidate's performance in the program is a mechanism for promoting greater participation (Froehlich, 2016). Ferreira *et al*. (2019) understand that feedback is part of the idea enrichment process and that colleagues and/or experts on the same platform should give it where ideas are registered.

Feedback allows a continuous flow of ideas being created and improved, and it is essential that all participants receive feedback. It must be timely, relevant, and honest (Valdati *et al*., 2020). The conclusion is that the implementation phase of ideas is the most critical due to the need to provide financial resources, people, and time (Ida & Tumelero, 2021).

4.1.7 Evaluating the results of implemented ideas

The evaluation of results obtained in internal idea generation programs was the greatest limitation observed. Only three studies reported the importance of this stage and presented findings from their research, as shown in Table 20.

Table 20 Fundamental aspects for evaluating the results obtained with the implemented ideas

Fundamental aspects for evaluating the results obtained with the implemented ideas	
Metrics to evaluate gains from innovation: status, evolution, and maturity of the program	Borchardt & Santos, 2015; Sérgio *et al*., 2015.
Increase in the gross financial value generated after the implementation of an innovation	Ida & Tumelero, 2021.
Number of ideas developed Distribution per team Number of ideas implemented Percentage of not developed Number of collaborators with higher education degrees Enrolled in doctorate programs Number of researchers performing R&D and number of scientific publications How much is invested in human capital Early funding for implementation of ideas Percentage of profits divided by sales as a result of innovation R&D investments Number of new products divided by the rate of solutions introduced Intellectual property rights Number of hours employees spent to generate an innovation Listed degree of utility value an idea can have Value of the profitability it can generate Maturity value of an idea's concept Number of patents submitted and applications for trademark recognition	Sérgio *et al*., 2015.

Source: Research data (2022).

The negligence with this step is related to the lack of ability of companies to measure innovations due to the lack of metrics or tools available to assist in measuring innovation (Sérgio *et al*., 2015). Although there are difficulties in identification and measurement, it is important that metrics be established to demonstrate the status, evolution, and maturity of the program. It is not enough just to present the number of ideas proposed and in which stage of implementation they are since this isolated information does not allow assessing the quality of the program results (Borchardt & Santos, 2015).

It is necessary to verify the increase in the gross financial value generated after the implementation of an innovation, for the absence of these numbers indicates strategic failure in the process of measuring results (Ida & Tumelero, 2021). Other important control aspects in the innovation management process are the number of ideas developed, distribution by teams, ideas implemented, percentage of undeveloped, number of employees with higher education degrees, enrolled in doctoral programs, researchers performing R&D, and number of scientific publications (Sergio *et al*., 2015).

When it comes to financial issues, one can highlight how much is invested in human capital, the early financing for the implementation of ideas, the percentage of profits divided by the sale as a result of the innovation, the investments in R&D, the number of new products

divided by the rates of solutions introduced, intellectual property rights, and the number of hours employees spent to generate an innovation. In addition, one can include in the list the listed degree of utility value that an idea might possess, the profitability value it might generate, the maturity of an idea's concept, the number of patents submitted, and applications for brand recognition (Sergio *et al*., 2015).

4.1.8 Obstacles to innovation

The articles analyzed also highlighted obstacles to innovation. In total, the authors mentioned thirteen difficulties for the realization of idea management programs. These aspects can be divided into two levels: organizational and individual, as detailed in Table 21.

Tabela 21 Obstacles to innovation

Organizational Level	
Budget	Dorow *et al*., 2013; Quandt *et al*., 2014; Sérgio, Gonçalves & Souza, 2015, Díaz-Díaz *et al*., 2022.
Lack of planning	Dorow *et al*., 2013; Luqmani, Leacha & Jesson, 2017.
Lack of control and management	Dorow *et al*., 2013; Sérgio & Gonçalves, 2019; Ida & Tumelero, 2021.
Lack of incentive and resistance from immediate bosses and top management	Borchardt & Santos, 2015; Quandt *et al*., 2014.
Lack of communication	Quandt *et al*., 2014; Díaz-Díaz, López-Iturriaga, & Santana-Martín, 2022.
Values and beliefs that support innovation culture	Pimentel, Loiola, & Diogo, 2020.
Insufficient rewards	Quandt *et al*., 2014.
Immediatism of results	Ida & Tumelero, 2021.
Innovation risk and aversion to error	Ida & Tumelero, 2021; Díaz-Díaz, López-Iturriaga, & Santana-Martín, 2022.
Political connections	Díaz-Díaz, López-Iturriaga, & Santana-Martín, 2022
Individual level	
Fear of failure	Dorow *et al*., 2013.
Reduction of individual competitive advantages	Dorow *et al*., 2013.
Not enough time to share knowledge	Dorow *et al*., 2013; Borchardt & Santos, 2015; Asch *et al*., 2022.
Undermining the personal goal	Borchardt & Santos, 2015.

Source: Research data (2022).

The lack of budget was pointed out as the main difficulty at the organizational level. 64% of the companies analyzed in the research developed by Quandt *et al*. (2014) pointed out that the costs of implementing the program in relation to the expected results are an obstacle. The low budget allocated for implementing ideas is another complicating factor (Dorow et al.,

2013), and the financial resources for implementing ideas are another inhibiting aspect of innovation (Sérgio, Gonçalves, & Souza, 2015).

Lack of control and management were also recurrently cited (Dorow *et al*., 2013; Ida & Tumelero, 2021). Many organizations face difficulties in managing the process of evaluating and identifying ideas, especially if received from crowds (Sérgio & Gonçalves, 2019).

The absence of incentive and the resistance of the immediate bosses and the top management for the management process of the internal program of ideas for innovation to occur were highlighted (Borchardt & Santos, 2015; Quandt *et al*., 2014). In the view of one of the groups analyzed by Borchardt and Santos (2015), the bosses reject a proposition because of complacency, considering that the implementation of a new idea requires effort and increased workload, thus overloading the goals to be met.

At the organizational level, the difficulties mentioned by the studies were lack of organization (Dorow *et al*., 2013), communication failures (Quandt *et al*., 2014), insufficient rewards (Quandt *et al*., 2014), immediacy of results and risk of innovation, and aversion to error (Ida & Tumelero, 2021).

At the individual level, the most mentioned aspect was the perception that there is not enough time to share knowledge (Dorow *et al*., 2013; Borchardt & Santos, 2015). Other obstacles presented were fear of failure, feelings that individual competitive advantages would be reduced by sharing the ideas (Dorow *et al*., 2013), and the feeling that the time invested in generating the idea may compromise the delivery of the personal goal (Borchardt & Santos, 2015).

In a general context, this systematic review points out that the factors that most influence internal programs for generating new ideas are the reward program, internal communication, and environment with creative stimuli in adherence, with the argument that an environment prepared for innovation constitutes a pillar of support for its application (Rogers, 1995).

Regarding the stimulus techniques, the idea pool was the most cited motivator in this review, converging with the statement of Barbieri, Álvares, & Cajazeira (2009) that the internal generation of ideas is one of the main mechanisms for the development of innovation culture.

Finally, a large gap was identified in the aspect of ideas implementation and feedback. Companies have difficulties in this process and many do not contemplate the feedback in their ideas programs, which can be explained by the lack of planning and control structure and a lack of a specialized team to manage the ideas arising from the program. This goes against the concept of "innovation culture or improvement within practices", in which innovation is treated

as an ongoing process within organizations (Apekey *et al*., 2011). Therefore, it should receive attention, both in the sense of providing incentives for the innovation processes to be continuous and for the feasibility of adequate investments for its realization.

After the presentation and detailing of the eight most relevant characteristics for the good performance of an internal program of ideas for innovation, according to the systematic literature review, the next section presents the internal innovation program of the Cresol cooperative, object of this research.

4.2 THE RELATIONSHIP BETWEEN THE COOPERATIVE PRINCIPLES AND INNOVATION IN THE PERCEPTION OF EMPLOYEES AND LEADERS AT THE THREE LEVELS OF THE COOPERATIVE: CONFEDERATION, CENTRAL, AND SINGULAR

4.2.1 Description of the Cresol cooperative's innovation program

Cresol is a financial cooperative founded on June 24, 1995, in the interior of Paraná state. The system is today one of the leading in the credit segment in Brazil, with 693,000 members and 690 branches in 17 Brazilian states, and has a reference equity of R$2 billion (*Cooperativa de Crédito Rural com Interação Solidária*, 2022).

The cooperative acts with the perspective of being recognized as a solid, relevant and excellent cooperative financial institution in products and solutions for its members. Its mission is to provide financial solutions with excellence, through relationships, to generate development for the members, their businesses, and the community. According to the cooperative, the values that guide the company are proximity, ethics, credibility, simplicity, cooperativism, and sustainability (*Cooperativa de Crédito Rural com Interação Solidária*, 2022).

The structure of the system is composed of a Confederation, located in Brasilia, and four affiliated central offices: ASCOOB, based in Serrinha (BA); Cresol Baser, based in Francisco Beltrão (PR); Cresol *Central Brasil*, based in Chapecó (SC); and Cresol Sicoper, based in Passo Fundo (RS) (*Cooperativa de Crédito Rural com Interação Solidária*, 2022).

In an unstructured interview (Appendix A) with the innovation coordinator of the Cresol Confederation, in order to request authorization to conduct the research, information was provided about the basis of the innovation structure and authorization to access the internal

page, where ideas are registered. From this, it was possible to identify that innovation in Cresol occurs through the initiative of the *Confederation*, which has a team of seven people dedicated exclusively to the development of actions and projects related to the *Laboratório de Inovação* (Innovation Laboratory), which is part of its program of innovation and internal generation of ideas.

This structure is recent. Activities began in April 2021 and include actions to raise awareness of the culture of innovation through the validation of initiatives, diversified action among the areas of Cresol in projects, maintenance of the laboratory's website (as the main tool for communication with employees at Confederation, central and singular cooperatives), collaboration and involvement of those who propose the idea, actions in projects focused on the user (customer or employee), and the approximation between the singular cooperative and the Confederation through projects conducted internally (*Cooperativa de Crédito Rural com Interação Solidária*, 2022).

Throughout the year, employees can submit ideas through the Cresol intranet through the laboratory's link, called Cresol Lab, restricted to the internal public. The site informs the process that the idea goes through from the moment of registration to implementation and presents the completed projects, as seen in Figure 6.

Figure 6 *Cresol Lab's website, in Portuguese*

Source: *Cooperativa de Crédito Rural com Interação Solidária* (2022).

The process begins with the submission of the idea by filling out a form. There are three possible categories for new ideas: products, processes, or something totally new. In this way, employees are stimulated to present incremental innovations (to improve something that already exists) and disruptive innovations (something that does not yet exist).

When filling out the form, the employee needs to agree to a few terms. The first is that they will be supporters, which means that in addition to submitting the idea, they will be involved in the idea development process by dedicating at least 15% of their weekly working hours to the project. The second term is that the ideas submitted must meet the entire system. Finally, the last term refers to the non-guarantee that the laboratory will work on their idea.

The laboratory team does the evaluation process of the ideas. Next, contact is made with the participating employees to collect information and understand the context; in parallel, contact is made with the product owner (P.O.), responsible for leading a product development team or with the person responsible for the area that will be impacted by the idea. This cycle is weekly, but if contact with the employee is not possible within two working days after registration, the idea is put on hold and is no longer a priority for that cycle.

The next step is feedback. The employee is informed a) if the idea will be inserted in the prioritization process with other ideas, b) if it needs more detail and, consequently, a new form to be filled out, and c) if the idea or something very similar is already being developed within some area.

The ideas that enter the laboratory's wake are chosen based on some criteria, such as complexity and value of the idea for Cresol as a business, based on strategic projects. Ideas with lower complexity and higher strategic value are those with more chances of being prioritized.

The next step is the kick off meeting, when the idea is presented, what is expected of the project, and the roles of each team member. This meeting involves the supporter who brought the idea and the PO or the person responsible for the impacted area. The ideas that were not prioritized are kept in backlog until the next prioritization, which occurs annually.

In the first eight months of existence, in 2021, the recurrent themes in the proposed ideas were related to open banking, infrastructure, mobile, beehive (the cooperative's management system), internal process, assemblies, monitoring, and legal entity accounts. In this period, seven ideas were implemented and seventeen others are in progress. 53% of them are focused on technologies for the financial system, 35% are projects for the business area, and 12% are related to the area of social responsibility.

4.2.2 Singular Cresol employees' perception of the program

To enable the achievement of specific objective *c* (to evaluate the relationship between the principles of cooperativism and innovation in the perception of employees and leaders at the three levels of the cooperative - confederation, central, and singular), questionnaires were applied to 105 employees of a singular of Cresol (Appendix D), called Cresol *Progresso*, located in Cascavel - PR. The return was 50 questionnaires answered, within 15 days, which corresponds to 45% of the population of 105 employees. A census attempt was made and a response rate of 45% was obtained, thus configuring a convenience sample.

With regard to the level of knowledge about the innovation program of the confederation, the feedback showed that 42% of employees, who are the users of the program, consider it negative. The answers to question 2 indicate a possible reason: 48% of the respondents demonstrated not knowing enough about the functioning of the laboratory. In the literature, the lack of knowledge of the program characterizes a communication problem, given that the disclosure in the company's channels is considered a mechanism to influence the generation of ideas (Dorow *et al*., 2013; Froehlich, 2016; Vargas *et al*., 2017; Pimentel, Loiola, & Diogo, 2020; Ida & Tumelero, 2021).

With regard to participation, 92% of the respondents have never participated in the program, while 6% report having participated once. In addition to the low level of knowledge about the program methodology, as highlighted in the previous paragraph, the literature presents a second justification for low participation in innovation idea programs, which should also be considered, the individual perception of the employee. Research has pointed out that the fear of failure (Dorow *et al*., 2013), the feeling of reduced individual competitive advantage (Dorow *et al*., 2013), and the feeling that there is not enough time to share knowledge by suggesting ideas (Dorow *et al*., 2013; Borchardt & Santos, 2015; Asch *et al*., 2022) are obstacles for innovation to occur within organizations.

As for the level of knowledge about the innovative ideas implemented in the cooperative, through the internal program in the last year, 58% evaluated negatively, 38% remained neutral, and 4% evaluated positively. In this case, the literature points out, in award models, a possible way to make the implemented ideas known to all employees, the public recognition of the authors (Quandt *et al*., 2014; Thom, 2016; Ida & Tumelero, 2021), which can also be enhanced through a massified communication in the company's channels (Dorow *et al*., 2013; Froehlich, 2016; Vargas *et al*., 2017; Pimentel, Loiola, & Diogo, 2020; Ida & Tumelero, 2021).

However, even in the face of these difficulties in understanding the program and the low participation, when the subject is the general level of innovation of the cooperative, only 35% of the employees evaluated negatively, 22% remained neutral, and 43% evaluated positively. It shows a contradiction with the previous results and leads to the question: what is the level of understanding of the employees about organizational innovation?

In the aspect that stimulates innovation, 34% negatively evaluated the level of encouragement that the leadership exercises with the employees (in the first level - singular) so that innovative ideas are suggested in the confederation program, 20% remained neutral, and 46% evaluated positively. The considerable percentage of employees who do not consider the level of encouragement positive reinforces the low participation in the ideas program, proving that the leadership plays an important role in the process of influencing the generation of ideas for innovation (Dorow *et al*, 2013; Quandt *et al*., 2014; Rosa Vendler & Maçaneiro, 2018; Thom, 2016; Valdati *et al*., 2020; Ida & Tumelero, 2021; Batistic *et al*., 2022).

In regards to the creative stimuli that the cooperative (in the three levels) offers to the collaborators, 31% evaluated negatively, 22% remained neutral, and 47% evaluated positively. Although the group is divided, the results of the checklist, which will be presented below, indicate that the cooperative employs a high number of techniques pointed out by the literature as motivators for the generation of ideas. The cooperative performs 8 of the 11 suggested: innovation agents (although only in the confederation), hourly workload allocated to innovation (only for the confederation's innovation team), meetings outside of working hours to discuss innovation, brainstorming, idea pool, events, organization's value proposition, stimulating internal entrepreneurship (Dorow *et al*., 2013; Borchardt & Santos, 2015; Buchele *et al.*, 2014; Froehlich, 2016; Thom, 2016; Luqmani, Leacha, & Jesson, 2017; Vargas *et al*., 2017; Rosa Vendler and Maçaneiro, 2018; Pimentel, Loiola, & Diogo, 2020; Asch *et al*., 2022), and three more partially (forums, persona and empathy map, and questions and expressions) (Dorow *et al*., 2013; Borchardt & Santos, 2015; Ferreira *et al*., 2019; Valdati *et al*., 2020; Pimentel, Loiola, & Diogo, 2020; Batistic *et al*., 2022).

Still dealing with culture, 44% of the respondents consider the level of orientation to take risks, accept mistakes, and stimulate experimentation in their cooperative as positive, 38% evaluate it negatively, and 18% remained neutral. These percentages are indicators, once again, that the group is divided, which should be a warning sign for the cooperative, given that the difficulty of managing the risk of innovation is considered an obstacle to the creation of a culture of innovation (Ida & Tumelero, 2021; Díaz-Díaz, López-Iturriaga, & Santana-Martín, 2022).

Concerning the cooperative principles, the respondents understand that the processes that are connected to the 2nd principle - Democratic Member Control (pre-assemblies and OGAs, possibility to exercise the vote, and others) are being satisfactorily met, with 62% of positive evaluation, 27% negative, and 8% neutral.

The 3rd principle - Members' Economic Participation (share capital, interest payment, payment of surplus, and others), regarding the implemented innovations, was considered positive by 50% of the respondents, negative by 38%, and neutral by 12%.

Regarding the processes that connect with the 5th principle - Education, training, and information (annual performance report, sending a letter about interest and surplus payments, training programs for governance and employees in the context of the pandemic, LGPD, FATES management, and others), the level of innovation was considered positive by 63% of respondents, negative by 27% who consider it bad, and 10% presented themselves as neutral.

The level of innovations that refer to the processes that connect with the 6th principle - Cooperation among cooperatives (relationship with central and confederation, relationship with partner cooperatives, systemic integration, and others), was considered positive by 56%, negative by 30%, while 14% remained neutral.

Regarding the processes that connect with the 7th principle – Concern for the community (training programs for the community, registration of volunteers, socio-environmental responsibility, project management, a tool for launching and proving that actions have been carried out, and others), the level of innovation was considered positive by 61% of the respondents, 21% considered it negative, and 18% remained neutral.

The last question on the questionnaire was open, so that the collaborators could suggest improvements to the cooperative's innovation process. Of the 50 participants, 27 answered, and 18 presented some suggestions for improvement. The suggestions were contemplated in the proposal of actions for the improvement of Cresol's internal innovation program.

The next section presents the perceptions of the superintendents about the cooperative's internal innovation ideas program.

4.2.3 Perception of the superintendents of the singular companies that are part of the Cresol Baser central office about the innovation program

Also to allow the achievement of specific objective *c*, questionnaires were applied to the 22 superintendents of 22 singular superintendents of the Cresol Baser central office (Appendix E), operating in 18 Brazilian states. The return was 13 answered questionnaires,

which corresponds to 59% of the population of 22 superintendents. An attempt was made to carry out a census, and a response rate of 59% was obtained, thus configuring a convenience sample.

Considering that the superintendents are responsible for the top management of the cooperatives, the first question to them asked about the level of importance of innovation in the strategic planning of their cooperative and 100% considered it positive. This aspect is fundamental for the development of a culture of innovation, given that the absence of planning is pointed out by the literature as one of the biggest obstacles to organizational innovation (Dorow *et al*., 2013; Luqmani, Leacha, & Jesson, 2017).

As for the level of involvement of the executive management in encouraging the leadership to present ideas for continuous improvement, 85% considered the level of involvement positive and 15% negative. Although the leadership affirms that the level of involvement is high and positive, 34% of the employees do not feel this motivation from the direct leaders.

With regard to the level of encouragement exerted by the confederation to the individual companies to promote training and meetings to discuss innovation with employees, 31% of the leaders considered it positive, 46% considered it negative, and 23% remained neutral. A possible explanation for such different views is in the perception of the level of effectiveness and sufficiency of innovation promotion actions that the Innovation Lab of the confederation performs for the entire system. On this question, only 15% of the respondents consider it positive, 46% consider it negative, and 39% remained neutral.

The level of efficiency of the communication between the confederation and the individual companies, with regard to the innovation program and the ideas implemented, is also associated with the perception of encouragement offered by the central office. In this aspect, 16% of the leaders considered it positive, 46% considered it negative, and 38% remained neutral. Here, again, the opportunity is perceived to improve the dissemination of the innovation program through massive communication about the methodology, stimuli for participation, winning ideas, and results obtained through internal innovation.

Leaving the macro level, the superintendents were able to answer about the reality of innovation in each singular, although there are no local initiatives currently, only the local participation in the national program, regarding the stimulus for the participation of employees. Regarding the level of autonomy and trust offered to employees to present ideas to direct managers, 84% of the leaders consider it positive, while 15% consider it negative. In this aspect, the leadership understands that it has fulfilled the role of influencing the generation of

ideas through autonomy, presented in the literature as one of the main factors of influence in the process of internal innovation (Dorow *et al*., 2013; Thom, 2016; Pimentel, Loiola, & Diogo, 2020; Valdati *et al*., 2020).

The relationship between the sustainable growth of the cooperative and the contribution that innovation in products and systems brings was evaluated by 92% of the respondents as positive, while 8% remained neutral, demonstrating that the leadership at the first level (individual leaders) recognizes the potential of innovation as a fostering of cooperative development. The vision is proven in the following question, in which the leaders were asked to describe, on a scale of 1 to 5, how much they believe that innovation, from the innovative ideas that emerge from the collaborators, can affect the sustainable growth of the cooperative. The answers reveal that 77% considered it excellent (maximum score), while 23% considered it great. Demonstrating that the leadership of the unique cooperatives understands that innovation can bring, in addition to economic benefits, social achievements that ensure a favorable living and working environment for employees, members and communities, which translates into organizational sustainability (Japiassú & Guerra, 2017).

No que se refere aos 7 princípios do cooperativismo e sua relação com as inovações realizadas pela cooperativa, o nível de conexão percebido foi positivo para 69% dos respondentes, negativo para 23% deles e 8% se mantiveram neutros.

Regarding the products and processes that connect with the 2nd principle - Democratic member control (pre-assemblies and OGAs during the pandemic, possibility to exercise the vote, and others), the perception of the level of innovation was considered positive by 77% of the respondents, negative for 15%, and neutral for 8%. The good performance in this principle can be explained by the innovative efforts implemented by the cooperative to allow members to continue exercising their right to vote, even amid the limitations of the pandemic, in virtual assemblies.

The level of innovation in operations related to the 3rd principle - Economic participation of cooperative members (capital stock, interest payment, payment of surplus, and others) was considered positive by 46% of respondents, negative by 46%, and neutral for 8%. Regarding the processes that connect with the 5th principle - Education, training, and information (annual performance report, sending letter about interest payment, and surplus, training programs for governance and employees in the context of the pandemic, LGPD, FATES management, and others), the level of innovation was considered positive by 46%, negative by 46%, and neutral for 8%.

The level of innovation in the processes related to the 6th principle - Cooperation among cooperatives (relationship with central and confederation, relationship with partner cooperatives, systemic integration, and others), was considered positive by 46%, negative by 46%, and neutral by 8%.

Regarding the innovations related to the 7th principle – Concern for the community (training programs for the community, registration of volunteers, socio-environmental responsibility, project management, a tool for launching and proving that actions have been carried out, and others), the level of innovation was considered positive by 62%, negative by 30%, and neutral by 8%.

The last question was open, so that the superintendents could comment on which are the biggest obstacles for innovation to occur in the cooperative. Of the 13 respondents, 10 presented their considerations. The 10 answers were analyzed and the most mentioned difficulties were extracted and grouped, presented in chapter 5, in a proposal of actions for the improvement of Cresol's internal innovation program.

The next section presents the analyses referring to the answers obtained by applying the checklist for the coordinator of the innovation program of the Cresol Confederation.

4.2.4 Results of the checklist application - evaluation model of the internal program of ideas for innovation at Cresol

Finally, in order to assess whether the perception of Cresol’s employees and superintendents is aligned with the head quarter’s objectives has with regard to the internal innovation program, an interview in the format of a checklist (evaluation model of the internal program of ideas for innovation) was applied to the program coordinator.

According to the respondent, innovation is considered important to the business, present in commitments such as Cresol's mission, vision, and values. He considers, from the standpoint of the confederation, that employees have autonomy to present new ideas and that the organization is an environment that offers psychological security for employees to innovate. The cooperative promotes socialization, group formation, and networking among employees in order to stimulate innovation.

The coordinator of the Innovation Laboratory believes that internal communication is effective in disseminating information about the innovation programs to the central and singular offices of the system. However, this is not the perception of employees and singular leaders, who are the users of the system, given that 46% of the leaders consider the dynamics

of communication for dissemination of the ideas program and the actions of the Innovation Lab negative or insufficient. 42% of the employees, who are the users, consider the level of information they have about the program negative, and 48% of the respondents demonstrated not knowing enough about the functioning of the Ideas Laboratory. This result helps explain the fact that 92% of them have never participated by suggesting ideas.

According to the person responsible for the laboratory, the cooperative (at all three levels) offers an environment with creative stimuli and training that stimulates the thinking of new alternatives for processes, products, and services. However, the results of the questionnaires also show dissatisfaction on the part of users: 46% of the leaders consider that the actions to promote innovation are insufficient, and 63% of the employees do not know enough about its functioning. The person in charge states that the leadership of the confederation stimulates, encourages, and welcomes the presentation of innovative ideas, and the organization has an orientation to take risks, accepts error, and encourages experimentation. The coordinator claims that there is encouragement to innovate and solve situations with new ideas, and initiatives are always exposed in working groups.

Regarding the promotion and encouragement of forums on innovation for employees and the existence of an award program, reward or potential stimulus for ideas, the confederation partially meets this requirement.

The confederation encourages meetings outside working hours to discuss innovation and has a professional responsible for mapping the market (competition, potential opportunities, and risks), as well as having an innovation sector. The organization also offers a period in the working hours exclusively for innovation. The person responsible for the sector claims that employees are also stimulated to set aside time to think of new ideas and initiatives that solve problems and implement new solutions.

The confederation uses the brainstorming technique to raise ideas and suggestions, has an idea pool, and holds internal innovation events (hackathons, journeys, and competitions). "We have working groups where these innovation actions are carried out, including participation in events that the market promotes," says the coordinator.

Although the confederation has and makes available to everyone its value proposition, the checklist items, empathy map, and personas are partially met. Besides, internal entrepreneurship is stimulated as a strategy for innovation.

With regard to stimulating innovative ideas, the confederation has evaluation and selection processes, disseminates the criteria used throughout Cresol and provides feedback to all participants. The ideas selected for implementation are disseminated throughout the system

by means of an internal periodical that reports on the progress of the initiatives. In this way, it is possible to follow the implementation status of each selected idea. The control over resources generated or saved from the implemented ideas is also carried out.

Regarding the cooperative principles, the innovations implemented in the last year are described in Table 22.

Table 22 Ideas of implanted innovations x cooperative principles

Principle	Implanted idea
1st - Open and voluntary membership	--
2nd - Democratic member control	100% digital assembly process, allowing everyone to participate.
3rd - Member economic participation	Application for issuing a personalized letter of communication for the distribution of surplus.
4th - Autonomy and independence	--
5th - Education, training, and information	LGPD compliance project.
6th - Cooperation among cooperatives	Strategic partnerships between the Centrals and the Confederation.
7th - Concern for the community	Improvements in the permanent program of agent training and financial education.

Source: Research data (2022).

Although they emerged as ideas, the innovations have turned into projects with the potential to influence a large number of people. The 100% digital assembly process makes the participation of all members more accessible (2nd principle), allowing someone who is not in a certain location on the day of an assembly to still vote, through a digital presence. The application that facilitates the process of issuing personalized letters to members who have surplus receivable from the last fiscal year makes the managers' routine more practical and improves the relationship with the members, given that the manager can issue letters for the accounts he or she serves, and can schedule hand delivery (3rd principle).

Complying with the 5th principle, the cooperative launched a project to adapt to the LGPD, which ensured more security to the cooperative members' data and generated a large amount of information and more knowledge about data protection and security, for employees and cooperative members.

As far as cooperation among cooperatives (6th principle) is concerned, there was not one, but several strategic projects connecting the three levels of the cooperative: individual cooperatives, central offices, and confederation. The 7th principle was impacted by the market intelligence work, developed by the innovation team. Faced with the need to improve and facilitate the community's access to the permanent training program for agents and financial

education, the cooperative started a lives tool project, interviewing the public of interest and mapping suppliers capable of offering the desired level of interaction for a better community experience with the cooperative's courses.

From the innovation checklist, the confederation fully meets 29 of the 32 items, which corresponds to 91%, and three items are partially met, adding up to 9%. With regard to innovations that specifically meet aspects related to the seven principles of cooperativism, the Cresol Confederation meets 100% of them, with the implementation of innovative projects or incremental improvements, in each of the principles, carried out in the last year.

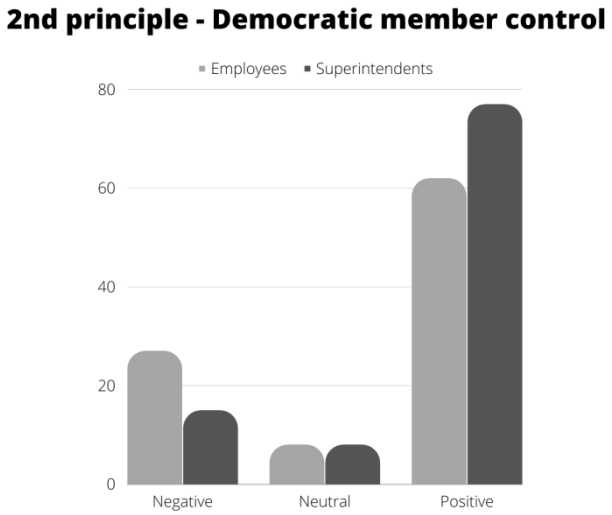
The next section presents the intersection of the perception between employees and leaders of the cooperative regarding the connection of the innovation program with the seven principles of cooperativism.

4.2.5 Cross referencing the perception of the relationship between the cooperative principles and innovation

Still meeting the specific objective c of this work, this section confronts the perceptions of employees and superintendents, users of the innovation program promoted and managed by the Cresol Confederation. To allow the evaluation, the answers were grouped into three levels of satisfaction, the first two alternatives being considered as negative, the middle alternative as neutral, and the last two as positive.

The vision about leaders and followers with regard to the second cooperative principle, which comprises operations linked to pre-meetings and Extraordinary and OGAs, the possibility of exercising the vote, among others, was presented as shown in Figure 7.

Figure 7 Perception of employees vs. superintendents about the level of innovation in the 2nd principle

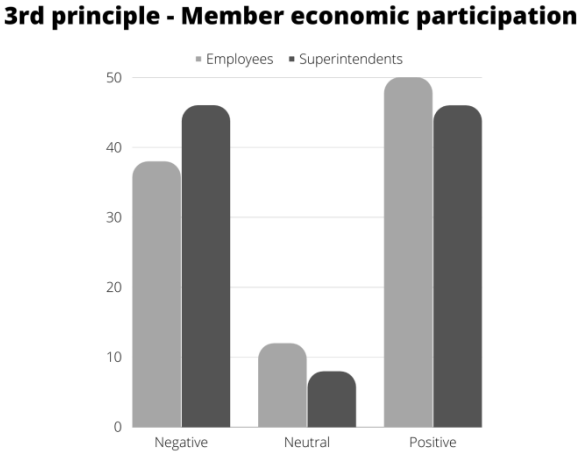


Source: Research data (2022).

62% of employees and 77% of superintendents agree that the performance of innovation in this area in the cooperative was positive. One factor that may explain this approval is the influence of the pandemic in this area, which forced the cooperatives to implement technologies that allowed the remote participation of members in pre-meetings and OGAs. It facilitated the voting of the members and possibly increasing the number of participations in events aimed at making decisions about the future of the cooperative, as reported in the checklist on the internal program of ideas for innovation.

The innovations related to the 3rd principle that impacts aspects such as capital stock, payment of interest, payment of surplus, among others, also had a positive evaluation, according to Figure 8.

Figure 8 Perception of employees vs. superintendents about the level of innovation in the 3rd principle

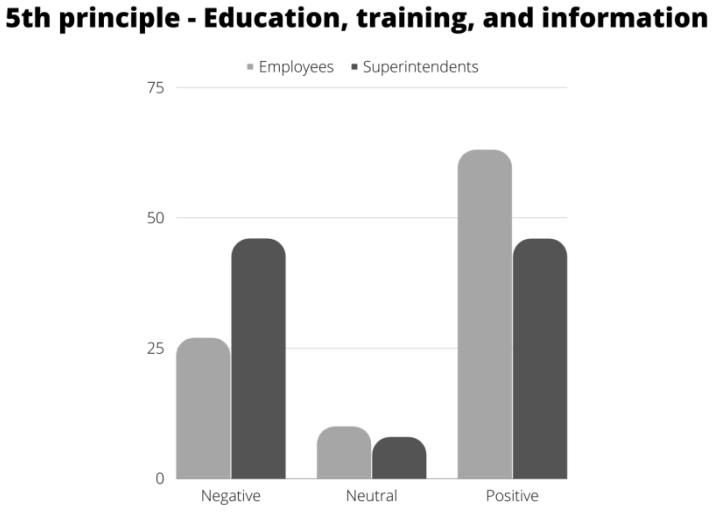


Source: Research data (2022).

The evaluation of the level of innovation in the 3rd principle caused division among the groups as presented in Figure 8.

However, the respondents reached a consensus regarding the 5th principle, which impacts issues such as annual performance reporting, sending a letter about interest and surplus payments, training programs for governance and employees in the context of the pandemic, LGPD, FATES management, among others, as per Figure 9.

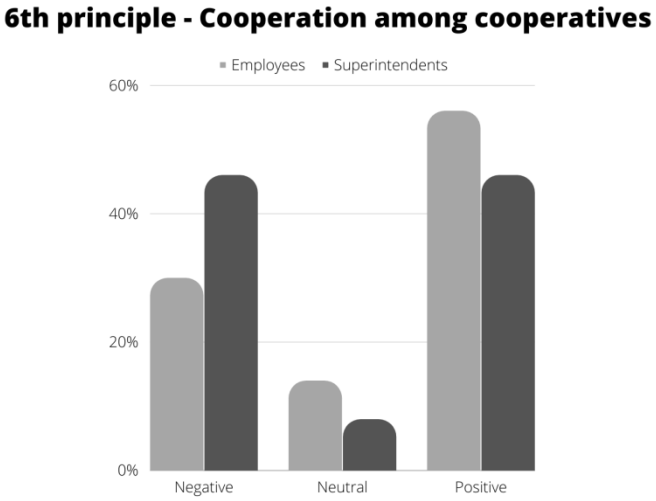
Figure 9 Perception of employees vs. superintendents about the level of innovation in the 5th principle



Source: Research data (2022).

The majority of both groups considered the innovative performance positive in relation to the 6th principle, which impacts the relations between central and confederation, relations with partner cooperatives (agribusiness, health cooperative, service cooperative, among others). Figure 10 demonstrates these results.

Figure 10 Perception of employees vs. superintendents about the level of innovation in the 6th principle

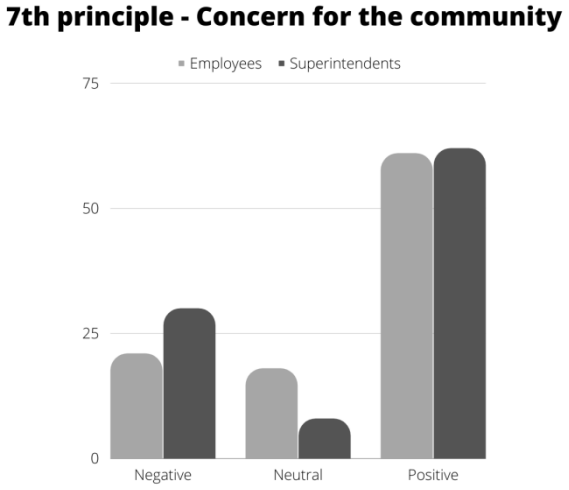


Source: Research data (2022).

The perception of the groups also showed division, although, by a small difference, the majority considers that the level of innovation in this area was positive.

The innovation performance evaluation regarding the 7th principle, which involves training programs for the community, volunteer registration, socio-environmental responsibility, project management (a tool for launching and proving the accomplishment of actions), among others, is highlighted in Figure 11.

Figure 11 Perception of employees vs. superintendents about the level of innovation in the 7th principle



Source: Research data (2022).

Concerning innovation performance in this area, most of the two groups reached a consensus, agreeing that the level of innovation was positive.

Thus, it can be seen from the data analysis that the principles most positively impacted by the cooperative innovation program were the 2nd principle – Democratic member control, the 5th principle - Education, training, and information, and the 7th principle – Concern for the community. On the other hand, the highest percentage of negative evaluation (bad) is related to the 3rd and 6th principles, as shown in Table 23.

Table 23 Principles with higher positive and negative evaluation of the innovation level

Principles with higher POSITIVE evaluation of the innovation level		
Principle	**Employees' evaluation**	**Superintendents' evaluation**
2nd Democratic member control	62% considered it positive	77% considered it positive
7th Concern for the community	61% considered it positive	62% considered it positive
Principles with higher NEGATIVE evaluation of the innovation level		
3rd Member Economic Participation	38% considered it negative	46% considered it negative
6th Cooperation among cooperatives	30% considered it negative	46% considered it negative

Source: Research data (2022).

In response to specific objective c, although the evaluation of the two samples regarding the level of innovation employed in each principle has divergences, the data indicate a possible relationship of the cooperative principles in the internal program of ideas for innovation and not for innovation as a whole. It is also important to highlight that there is no direct relationship

by all principles, given that the 1st and the 4th have no direct connection with products or services, but are related to the rule of conduct (1st principle) and jurisprudence (4th principle).

Next, the actions proposed to improve Cresol's internal innovation program are presented, based on the suggestions presented by employees and superintendents, and also considering the eight characteristics pointed out in the literature, based on the systematic review.

4.3 PROPOSED ACTIONS FOR THE IMPROVEMENT OF CRESOL'S INTERNAL INNOVATION PROGRAM

From the content analysis of the interviews and questionnaires, this research suggests the following categories of analysis, which were considered for the suggestion of actions for the improvement of Cresol's internal ideas program.

For employees on the front line, who work directly with member services at the branches, the suggestions for improvement are concentrated in two areas: organizational and operational. With regard to the culture of innovation and the operationalization of the program on a daily basis, it is necessary to increase the dissemination and attractiveness for the participation of employees. In addition, it is necessary to offer information about innovation, with training and specific events, to discuss innovation and select an innovation ambassador in each agency, decentralizing the knowledge and bringing the innovative action closer to each employee. With regard to operational improvements, related to systems, they suggest the implementation of new technologies in currently manual processes, to increase agility and continuous improvement in digital channels, as detailed in Table 24.

Table 24 Suggestions for improvements in the internal innovation program

Suggestions for improvement	Respondents	%
Organizational Improvements		
Increasing dissemination and attractiveness to attract the participation of employees	8	29
Having a person responsible for innovation in each branch	1	4
Offering training to employees so they can contribute more ideas	2	7
Operational Improvements		
Implementing more technology in the bureaucratic and manual processes, in order to bring more agility to operations	5	19
Continuous improvement of the digital channels	2	7

Source: Research data (2022).

The answers confirm the need to expand the dissemination of the Idea Laboratory with those who are the target audience, the employees at the top, who serve the cooperative members at the branches on a daily basis. Efficient internal communication is highlighted as a factor that influences internal innovation in organizations (Dorow *et al*., 2013; Borchardt & Santos, 2015; Froehlich, 2016; Thom, 2016; Vargas *et al*., 2017; Rosa Vendler & Maçaneiro, 2018; Valdati *et al*., 2020; Pimentel, Loiola, & Diogo, 2020; Ida & Tumelero, 2021).

The need to understand more about innovation is presented as a possible reason why most respondents have never participated in the program, and indicates a way to stimulate employees to think innovation in every process. The literature on internal idea programs indicates that providing training is key to creating a culture of innovation (Dorow *et al*., 2013; Borchardt & Santos, 2015; Froehlich, 2016).

The suggestion of having a figure that understands innovation and stimulates the team in the place where it works also meets the creation of stimuli for participation. The presence of innovation agents in different areas of the organization is an issue supported by the academia, considering that it fulfills the role of motivating and feeding the teams with market information that indicate possible ways to make the suggested ideas viable (Borchardt & Santos, 2015; Dorow *et al*., 2013).

26% of the respondents believe that there are still many manual processes for which the use of technology and innovation could bring more agility, reflecting in the satisfaction of the cooperative member. Moreover, the continuous improvement in digital channels, which has grown in acceptance among users, makes it easier and more practical to control finances, giving more autonomy to the cooperative member.

For the top leadership of the individual cooperatives, the main barriers and warning points for the improvement of the innovation program in the cooperative refer to investments, resistance to change, development of a culture of innovation, governance (difficulty of understanding about innovation among power instances), and lack of clear methodology, as detailed in Table 25.

Tabela 25 Top obstacles for innovation in the cooperative in the superintendents' view

Top obstacles	Respondents	%
Governance and relationship between instances with different levels of understanding of the importance of innovation	4	40
Investments	3	30
Development of a culture of innovation	3	30
Resistance to change	1	10
Lack of clear methodology	1	10

Source: Research data (2022).

Among the superintendents, 40% understand that the biggest obstacle to innovate in the cooperative is the different levels of understanding that governance has about the importance of innovation for business growth, considering that the cooperative has a governance model that involves executive management, board of directors, and supervisory board. These three levels exercise decision power over everything that happens in the cooperatives, which makes the group of decision makers large and heterogeneous. The lack of incentive and resistance from the immediate bosses and top leadership is one of the obstacles most often faced by organizations when it comes to the implementation of innovation idea programs and the development of an innovative culture (Borchardt & Santos, 2015; Quandt *et al*., 2014).

The budget restriction aimed at innovation was mentioned by 30% of the respondents as an obstacle, a recurring issue and supported in the literature on the subject (Dorow *et al*., 2013; Quandt *et al*., 2014; Sérgio, Gonçalves, & Souza, 2015).

The challenge of developing a culture of innovation in the cooperative was also present in the answers of 30% of the leaders, 10% highlighted the resistance to change, and 10% the lack of a clear methodology as a barrier to developing innovation in the cooperative.

With regard to resistance, academia indicates that this can occur on two levels, individual and organizational. At the individual level, the issues that impact are insufficient time to share knowledge (Dorow *et al*., 2013; Borchardt & Santos, 2015), the fear of damaging personal goal by setting aside time to think about innovations (Borchardt & Santos, 2015), the perception of reduced individual competitive advantages, and the fear of failure (Dorow *et al*., 2013). At the organizational level, some of the aspects that impact most are values and beliefs that support innovation culture (Pimentel, Loiola, & Diogo, 2020), immediacy of results (Ida & Tumelero, 2021), risk of innovation, and aversion to error (Ida & Tumelero, 2021).

Returning to the challenge of lack of clear methodology, issues such as lack of planning (Dorow *et al*., 2013), lack of control and management (Dorow *et al*., 2013; Sergio & Gonçalves, 2019; Ida & Tumelero, 2021), and communication failures (Quandt *et al*., 2014)

often impact how the internal innovation ideas program is perceived by employees, which can generate disinterest.

Given the findings in the literature, the demands presented by Cresol's employees and superintendents, and the aspects partially met by the institution, according to the checklist used in the interview, this research presents a proposal for actions to improve Cresol's internal innovation program, detailed in Table 26.

Table 26 Proposed actions to improve Cresol's internal innovation program

Continues

Demand	Origin of demand	Proposed action	Support in the literature
Increase publicity and attractiveness to attract employee participation	Survey with employees at singular	Use of internal social network, e-mail and support of the People Management team to disseminate at all levels and main channels of internal communication information about the innovation program on a weekly, biweekly or monthly basis, according to demand. Explore themes such as: 1) What is innovation? 2) What kind of changes and improvements innovative ideas can bring to the teams. 3) How to participate by suggesting ideas. 4) How innovation can arise from a small process adjustment and impact the routine of the whole cooperative. 5) Stimulate the collaborators to think what in their routine could be more agile if innovation was applied. 6) Innovation does not necessarily involve technology.	Dorow *et al*., 2013; Borchardt & Santos, 2014; Froehlich, 2016; Thom, 2016; Vargas *et al*., 2017; Vendler & Maçaneiro, 2018; Valdati *et al.*, 2020; Pimentel, Loiola, & Diogo, 2020; Ida & Tumelero, 2021.
Offer training to employees so they can contribute more ideas	Survey with employees at singular	There are at least two possible paths regarding the training of employees with respect to innovation: 1) Promote specific moments to qualify the team, training and discussing what is innovation, in events that can be conducted by the confederation. In this case, the event can be held for the whole house or, for reasons of limitations such as team size, free dates to gather the whole house, and even financial limitations regarding gathering everyone in one physical place or paying overtime. Another alternative is to offer the training only to employees who show interest in the theme of each singular, who sign up to participate, or even with the "ambassadors" of innovation of each singular, who would return from the event with the role of spreading the culture of innovation. A second way is to train while holding an innovation competition. Either Bootcamp (intensive training tracks in which solutions are elaborated throughout the challenge, with a project-based learning approach), or marathons, which are an intense training track, in which solutions are elaborated throughout the challenge, with a project-based learning approach. Or even in marathons, which are intensive innovation events, usually of short duration, in which teams try to solve a certain challenge presented by the organization of the event, provided they receive some kind of training on the basics for each stage of innovation, so that they are able to make an idea more qualified for a possible later implementation level. 2) Invest in permanent training of the whole house. One way to do this is through the massification of communication on the subject, as suggested in item 1 of this chart. Another way is to make short learning trails available in the internal university and to count on the support of the leadership so that they encourage the realization of these trails. Short, dynamic videos that use humor to teach are also great ways to disseminate information in a light and practical way in channels such as the cooperative's internal social network.	Froehlich, 2016; Vendler & Maçaneiro, 2018; Asch *et al.*, 2022.
Implementing more technology in the bureaucratic and manual	Survey with employees at singular	1º) Apply research with the internal public in order to identify the demands that most impact the operations. 2º) Based on the problems portrayed by the teams, open an innovation challenge to get ideas from employees to solve these demands.	Ida & Tumelero, 2021.

processes, with the aim of bringing more agility to operations.			
Continuous improvement of digital channels	Survey with employees at singular		
Having a person responsible for innovation in each agency	Survey with employees at singular	The presence of "ambassadors" or "innovation agents" is one way to generate a culture of innovation at each level of the cooperative. The process has the advantage that someone familiar with the working group will introduce the topic of innovation, and may use examples from everyday life to explain how innovation in that context could bring gains to the team. This actor would also be responsible for stimulating the team to discuss innovation and would be a kind of spokesperson for the confederation, transmitting or reinforcing communications on the subject.	Dorow *et al*., 2013; Borchardt & Santos, 2014; Luqmani, Leacha, & Jesson, 2017.
Governance and relationship between instances with different levels of understanding of the importance of innovation	Survey with Cresol's superintendents	When it comes to the cooperative's leadership, scientific research proves that it is critical for them to understand and support innovation in order to influence and affect those they lead to innovate. One possible path to this involves people management and the use of resources such as FATES. Offering top leadership first trainings that demonstrate the gains that innovation can bring to the organization is one way to initiate a culture of innovation. The trainings also need to extend to the entire leadership, at all three levels. In this way, the cooperative has more chances of being able to offer a greater and more complete understanding of innovation and its importance to the business, stimulating leaders and subordinates to think of innovation as a strategic tool for development and sustainable growth.	Pimentel, Loiola, & Diogo, 2020.
Larger Investments	Survey with Cresol's superintendents	The issue of investment allocation in a cooperative is something that involves medium and long term planning, considering that the resources are destined for the following year. In this way, the first step is the allocation of resources for the formation of leadership. The second is to allocate resources for the execution stages of the training and award programs for employees. And third, the forecast of resources that allow all the necessary structure so that the innovation team of the confederation can implement the ideas coming from the collaborators.	Dorow *et al*., 2013; Quandt *et al*., 2014*; Sérgio*, Gonçalves, & Souza, 2015, Díaz-Díaz *et al*., 2022.
Development of a culture of innovation	Survey with Cresol's superintendents	The development of a culture of innovation goes through all of the previous items in this proposal, starting with the training of top leadership, understanding the importance of allocating resources for the development of programs, events, and actions during the year, and the use of internal communication as a tool for massifying the theme, with the aim of generating greater connection with the routine of employees and understanding that innovation starts with what each one of them can do to improve their daily practice at the cooperative.	Dorow *et al*., 2013; Quandt *et al*., 2014*; Vendler* & Maçaneiro, 2018; Thom, 2016; Valdati *et al*., 2020; Ida & Tumelero, 2021; Batistic *et al*., 2021.
Resistance to change	Survey with Cresol's superintendents	The resistance to change is due to the lack of knowledge about the gains that the cooperative can have with the development of a culture of innovation that allows involving all agents in a process of finding better ways, not necessarily technological, to improve processes and products of the cooperative.	Borchardt & Santos, 2014; Quandt *et al*., 2014.

		Investments in training and massification of information about the gains of innovation should help reduce resistance at all levels, to the extent that innovation is understood as a vital process for the healthy continuity of business in times of high speed of change and permanent improvement of processes, products, and services in the financial market.	
Lack of clear methodology	Survey with Cresol's superintendents	The checklist evaluation showed that the innovation program of Cresol has a high level of methodological maturity, with 91% of the checklist items met. Thus, it is believed that the challenge refers to the need to make this methodology more accessible and known by all employees and leaders of the cooperative, through the massification of information in all channels.	Quandt *et al*., 2014; Díaz-Díaz *et al*., 2022.
Award program, reward, or potential stimulus for innovative ideas	Checklist - item partially met	The literature presents several possible award or reward models for internal innovation idea programs: awards for participation, for selected idea, for implemented idea. Cash awards, products, miles or travel. Individual or collective awards. And also non-financial recognition, such as: public recognition, time off, coffee with a president to talk about ideas, participation in national and/or international congresses, time off work to participate in graduate courses, training, specialized courses in their area of activity and visits to technical fairs in the industry. Another strategy that does not involve awards, but is a form of recognition involves the institution's career plan. The cooperative can inform employees that it starts to consider the innovative vision as a requirement for leadership, as a strategy to give continuity to a culture of innovation.	Quandt *et al*., 2014; Borchardt & Santos (2014)*;* Thom, 2016; Vendler & Maçaneiro, 2018; Ida & Tumelero, 2021.
Promoting or encouraging innovation forums for employees	Checklist - item partially met	The forums stimulate the exchange of knowledge by means of interaction among employees and are contemplated in the item employee training, being one of the possible event models.	Dorow *et al*., 2013; Borchardt & Santos, 2014; Valdati *et al*., 2020; Batistic *et al*., 2021.
Dissemination of empathy map personas to all employees	Checklist - item partially met	The creation of the persona, empathy map, and value proposition are highlighted as stages of the ideation and action plan processes. The first two occur in parallel, since by defining the persona the group humanizes the relationship of the idea with those who will use it or benefit from it. The third aspect aims to operationalize the idea through the identification of the necessary elements to meet the needs of the persona, thus, the disclosure of the personas of the cooperative, whether by segment or even in general, so that all employees understand who they serve and what the wishes of these profiles are can help not only in innovative thinking for continuous improvement, but also to promote better service on a daily basis. The collaborator has to have a deep knowledge of the customer, or in this case, the cooperative member. The cooperative's value proposition must also be part of each team's daily routine, guiding how the organization expects each collaborator to deliver their work, and what purpose should move them so that the value proposition is fulfilled in each step and process performed within the cooperative. The empathy map is how the value proposition should be delivered to the persona. Therefore, to advance in this work, the communication and people management teams must structure strategies. And the innovation team should use these personas, value proposition or empathy map in all stages of the innovation process developed with the employees, so that everything that is created occurs from these drivers.	Luqmani, Leacha, & Jesson, 2017; Pimentel, Loiola, & Diogo, 2020.

The proposal of actions, presented in Table 24, summarizes in a practical way ways and suggestions to remedy the objections presented by the participants of the program and the leaders of the cooperatives involved, and also considers the aspects not met or partially met in the checklist applied to those responsible for the program. Each suggestion presented is based on findings in the systematic literature review on the subject "internal program of ideas for innovation."

The actions can be contemplated in an annual planning for innovation, considering that in cooperatives the approval of the budget and of the work plan always takes place the year before they are carried out. It is important to consider that the measures indicated here can be easily adapted to the reality of the cooperative, since they are a guiding path to respond to the suggestions of the program participants.

The suggestions presented in Table 26 can also contribute by demonstrating objectively where the difficulties of the cooperative's internal program of ideas for innovation are, allowing a closer look at these issues so that the next actions can be directed to the resolution of barriers.

Once the proposed actions to improve Cresol's internal program of ideas for innovation have been carried out, the next chapter explains the theoretical, methodological, and social contributions of the research.

5 CONTRIBUTIONS TO PRACTICE

The theoretical contribution of the research is the observation that the relationship of the cooperative principles in the innovation program analyzed is not evident, in view of the fact that, from the ideas implemented, it is not possible to infer if the greatest motivator for their realization was the interest in meeting a cooperative principle or just to meet purely operational, tactical, or strategic demands.

The methodological contributions are given by the categorization of the main elements that make up an internal program of ideas and that are considered fundamental to the success of an initiative. Another contribution is the elaboration of the checklist (evaluation model of the internal program of ideas for innovation), which can be used to evaluate continuous improvement or even guide the implementation of an internal program of ideas in a cooperative that does not have one, with the necessary adjustments according to the segment in which the organization operates.

The social contributions of the research were presented in section 4.6 of this work, with the proposal of actions to improve the internal program of ideas for innovation. In it, 15 possible improvements were listed, which can be summarized in three major areas: investments, training, and communication.

Regarding investments, innovation needs to be part of the strategic planning of the cooperative, with specific goals regarding the development of a culture of innovation. In this way, it will be possible to prioritize its own budget for investments in training, stimulus programs for employees, and implementation of innovative ideas. It should be taken into account that in cooperatives the budget is approved for the following year; therefore, the anticipated budget forecast is essential for the innovation actions to be carried out.

Training on innovation is an action that needs to be developed jointly by the innovation team and the people management team. This alignment is fundamental for the choice of training sessions, which can be given by specialists from outside the cooperative. These, in turn, will develop training tailored to the needs of the cooperative as they have an agenda of what is important for the moment the organization is living in terms of innovation.

The training should begin with governance, which covers the executive board and the administrative and fiscal councils at each of the three levels of the cooperative, confederation, central, and individual members. This training will help to dissolve the doubts and different understandings about the importance of innovation for the organization. Then, the training

should be extended to the entire company, to generate an environment in which the discussion about innovation is permanent.

Another aspect is communication. Although Cresol's internal ideas program met 94% of the items on the checklist (evaluation model of the internal program of ideas for innovation) prepared based on the literature findings, ISO 56002/2019 and the seven principles of cooperativism, internally, there are still doubts about the methodology in a general context. 48% of the employees who responded to the survey said that the level of understanding of how the cooperative's internal innovation idea generation program works is poor, and one of the superintendents used the open space for suggestions to highlight that he considers the program's methodology unclear, which hinders participation.

Therefore, communication is an area that needs to be directly involved in the process, as a fundamental part for the creation of a culture of innovation in the cooperative. The dissemination of the program and of content that encourages employees to think about issues that are part of the universe of innovation should be part of the daily agenda in internal communication, using all existing channels to massify the repercussion of the subject, generating discussions among employees.

6 FINAL CONSIDERATIONS

This study aimed to answer the following research question: how do the seven cooperative principles relate to the innovation and internal idea generation program at a credit cooperative? The data obtained reveal that, although five innovations implemented by the innovation lab are related to the cooperative principles, the motivation for the implementation of some of them was external: market pressures (100% digital assemblies due to the Covid-19 pandemic) and legal pressures that impacted the market as a whole (adjustments to the LGPD). Thus, the conclusion suggests that the principles of cooperativism are related to the innovation program and internal generation of ideas, but are not the first or main motivation of the ideas selected and implemented. It is given by the fact that the cooperative needs to adapt to market realities, implementing actions that are sometimes purely focused on responding to operational or even strategic demands, to gain competitive advantage in the financial sector.

To answer the specific objective *a*, it was carried out a systematic literature review on the subject innovation programs and internal generation of ideas, which allowed the categorization of eight main aspects of a program of internal generation of ideas. In order to meet specific objective *b*, a checklist was developed, which is the presentation of an instrument to evaluate innovation programs in credit cooperatives, based on the seven principles of cooperativism, on the findings of the systematic review, and on the crossing of these characteristics with the ISO 56002/2019 standard.

In response to the specific objective *c*, the results indicate that there is a divergence of views in the three levels of the cooperative, especially with regard to knowledge of the operation and methodology of the program. While the coordinator of the innovation laboratory of the confederation considers that communication and dissemination is sufficient, employees and superintendents demonstrate not knowing enough, which influences the level of participation and influence in building a culture of innovation.

With regard to the practical contributions of the research for the organization, a proposal was prepared based on the limitations identified by means of a questionnaire applied to the employees, superintendents, and by means of a checklist answered by the current person responsible for the innovation sector of the confederation. In this proposal, actions were suggested for 15 demands, which can be summarized in three areas: investments, training, and communication.

Another practical contribution of this research is the fact that the checklist for evaluation of the internal program of ideas for innovation can be used in other credit cooperatives or even in other segments, with the necessary adjustments. The checklist is a tool that contributes to the continuous improvement assessment process and can be used as an initial guide for the structuring of programs in cooperatives that do not yet have them.

Regarding the limitations of the research, the low adhesion of respondents to the questionnaires is noteworthy. Another limitation was the impossibility of making a direct observation of the Innovation Laboratory's operation since it is located in another state.

For future studies, it is proposed the analysis of a wider audience, involving other levels of leadership, such as the administrative and supervisory boards, in order to understand how these groups that have greater decision-making power on the directions of the cooperative understand innovation, and also the cooperative members, to identify whether the innovations implemented are felt by them during the use of technological systems or in the services performed by employees. It is also proposed a quantitative study, which applies a non-parametric analysis, such as adherence test (adequacy), to assess whether there is in fact statistical significance in the tendency of responses to "positive" or if the frequency of responses is equally distributed among the categories, allowing to analyze the same phenomenon from the point of view of the possible influence that the implemented ideas may have on the economic performance of the cooperative.

Finally, it is worth pointing out the importance of further studies in the area of cooperativism and innovation, especially regarding tools that can help the sustainable growth of this business model that has social responsibility with the communities and with its cooperative members, the owners of the organization.

REFERENCES

Abramovay, R. (2012). Desigualdades e limites deveriam estar no centro da Rio+20. *Estudos Avançados, São Paulo*, (26)74, 21-33.

Alianza Cooperativa Internacional (2020). *Exploring the cooperative economy*. Available at: https://www.ica.coop/es/alianza-cooperativa-internacional.

Allaire, Y., & Firsirotu, M. E. (1984). Theories of organizational culture. *Organization studies*, 5(3), 193-226.

Andrade, T. T. F. S., Lago, S. M. S., & Stabile, M. L. R. (2022). Programas internos de ideias para inovação: Uma revisão sistemática da literatura. *In Anais do VII Congresso Brasileiro de Gestão de Negócios COBRAGEN*. Cascavel, PR.

Apekey, T. A., Mcsorley, G., Tilling, M., & Siriwardena, A. N. (2011). Room for improvement? Leadership, innovation culture and uptake of quality improvement methods in general practice. *Journal of Evaluation in Clinical Practice*, 17(2), 311-318.

Asch, D. A., Bellini, L. M., Desai, S. V., Darragh, D., Asch, E. L. & Shea, J. A. (2022). An innovation tournament to improve medical residency. *Healthcare*, 10(1), 1-7.

Associação Brasileira de Normas Técnicas (2019). NBR ISO 56002. Innovation management - Innovation management system - Guidance. Genebra: ISSO. Rio de janeiro: ABNT. Available at: https://www.iso.org/standard/68221.html.

Barbieri, J. C. (2007). Organizações inovadoras sustentáveis. In J. C. Barbieri, & M. Simantob. (Eds.) *Organizações inovadoras sustentáveis: uma reflexão sobre o futuro das organizações*. São Paulo: Atlas.

Barbieri, J. C., Álvares, A. C. T., & Cajazeira, J. E. R. (2009). *Gestão de ideias para inovação contínua*. Porto Alegre: Bookman.

Batistic, S., Kenda, R., Premruc, M., & Cernec, M. (2022). HR systems and leadership attachment affecting idea generation and implementation: An experiment and two-source multi-level study. *European Management Journal, 40(4)* 532-545

Bignetti, L. P. (2011). As inovações sociais: uma incursão por ideias, tendências e focos de pesquisa. *Ciências Sociais Unisinos*, 47(1), 3-14.

Bocken, N. M. P., & Geradtsc, T. H. J. (2020). Barriers and drivers to sustainable business model innovation: Organization design and dynamic capabilities. *Long Range Planning*, 53(4).

Borchardt, P., & Santos, G. V. (2015). Gestão de ideias: um estudo empírico na Universidade Federal de Santa Catarina. *Revista Eletrônica de Estratégia & Negócios*, Florianópolis, 8(2), 155-180.

Bothos, E., Apostolou, D., & Mentzas, G. (2012). Collective intelligence with web-based information aggregation markets: The role of market facilitation in idea management. *Internet Research*, (39), 1333-1345.

Brasil. Ministério da Ciência, Tecnologia e Inovação (2015). *Estratégia nacional de ciência, tecnologia e inovação 2012-2015*. Balanço das atividades estruturantes: 2011. Brasília, DF. Available at: capa_frente.pdf (ufg.br).

Brasil. Presidência da República. Casa Civil. Lei Nº 5.764, de 16 de dezembro de 1971. (1971). Define a Política Nacional de Cooperativismo, institui o regime jurídico das sociedades cooperativas, e dá outras providências. *Diário Oficial da União*, Dec 16 1971. Brasília, DF. Available at: https://www.planalto.gov.br/ccivil_03/leis/l5764.htm.

Brem, A., & Voigt, K. I. (2007). Innovation management in emerging technology ventures: the concept of an integrated idea management. *International Journal of Technology, Policy and Management*, Olney, 7(3), 304-321.

Bretos, I., & Marcuello, C. (2016). Revisiting globalization challengens and opportunities in the development of cooperatives. *In Annals of Public and Cooperative Economics*, 88(1), 47-73.

Buchele, G. T., Teza, P., Dandolini, G. A., & Souza, J. A. (2014). Gestão de ideias para inovação: transformando a criatividade em soluções práticas. *Revista de administração e inovação*, 11(1), 203-237.

Canquerino, Y. K., & Bertolini, G. R. F. (2019). A discussão científica sobre o cooperativismo e o desenvolvimento local. *Informe Gepec*, 23(2), 9-28.

Cooperativa de Crédito Rural com Interação Solidária (2022). *Dados institucionais*. Available at: https://cresol.com.br/institucional/. Correia, A. M. M., & Santos, P. K. (2021). Educação corporativa e metodologias ativas: estudo de caso com design thinking em uma instituição bancária. *Revista EDaPECI*, São Cristóvão (SE), 21(2), 32-43.

Creswell, J. W. (2010). *Projeto de pesquisa: métodos qualitativo, quantitativo e misto*. Porto Alegre: Artmed.

Damiani, R. M., & Tumelero-cleonir, C. (2020). A Influência do Intraempreendedorismo na Aceleração da Transformação Digital em uma Instituição Financeira. XLIV Encontro da Anpad – EnANPAD.

Delfino, I. A. D. L., Land, A. G., & Silva, W. R. D. (2010). A relação entre valores pessoais e organizacionais comparados aos princípios do cooperativismo. Gerais: *Revista Interinstitucional de Psicologia*, 3(1), 67-80.

Denzin, N. K., & Lincoln, Y. S. (2006). *O planejamento da pesquisa qualitativa: teorias e abordagens*. Trad. de Sandra Regina Netz. Porto Alegre: Artmed.

Díaz-Díaz, N. L., López-Iturriaga, F. J., & Santana-Martín, D. J. (2022). The role of political ties and political uncertainty in corporate innovation. *Long Range Planning*, (55) 1. A 102111.

Dobni, C. B. (2008). Measuring innovation culture in organizations: the development of a generalized innovation culture construct using exploratory factor analysis. *European Journal of Innovation Management*. 11(4), 539-559.

Dorow, P. F., Medeiros, C., Souza, J. A., & Dandolini, G. A. (2013). Barreiras e facilitadores para geração de ideias. *Revista Eletrônica de Estratégia & Negócios*, (6)3, 105-124.

Endesley, S. (2010). *Innovation in action: a pratical guide for healthcare teams*. London: BMJ Books.

Estrada, M. M. P. (2005). A Internet Banking no Brasil, na América Latina e na Europa. *Revista do Programa de Mestrado em Direito do UniCEU*, 2(1), 138-166.

Ferreira, E. P., Aguiar Filho, A. C., & Ziviani, F. (2019). As características interdisciplinares da relação: ambiente político-legal, cadeia de valor da inovação e ecossistemas de startups. *Pesquisa Brasileira em Ciência da Informação e Biblioteconomia*, (14)2, 119-129.

Ferreira, E. P., Aguiar Filho, A. S., Correa, F., Ribeiro, J. S. A. N., & França, R. S. (2021). A influência do ambiente político-legal sobre a cadeia de valor da inovação do ecossistema de startups do estado de minas gerais. *Informação & Informação*, (26)4, 342-368.

Ferreira, M. A. T., Sales, V. V., Paiva, R. V. C., & Ziviani, F. (2019). A gestão de ideias no âmbito da gestão do conhecimento: catalisando a inovação nas organizações. *Ciência da Informação*, 48(1), 41-60.

Flynn, M.; Dooley, L.; O'sullivan, D.; & Cormican, K. (2003). Idea management for organisational innovation. *International Journal of Innovation Management*, (7)4, 417-442.

Fonseca, J. J. S. (2002). *Metodologia da pesquisa científica*. Fortaleza: Federal University of Ceará.

Frade, E. S., & Oliveira, M. L. (dez. 2018). Cooperativismo de crédito: uma alternativa de desenvolvimento socioeconômico. *Revista do Direito Público*, (13)3, 153-174.

Franco, M. L. P. B. (2008). *Análise de conteúdo*. 3. ed. Brasília: Líber Livro.

Froehlich, C. (2016). O programa de ideias para inovação em uma empresa do segmento químico. *Revista de Administração IMED*, (6)2, 191-205.

Godoy, A. S. (1995). Introdução à pesquisa qualitativa e suas possibilidades. *Revista de Administração de Empresas*, (35)2, 57-63.

Ida, L. C., & Tumelero, C. (2021). Boosting technological innovation and innovation culture from an idea generation program: the experience of a Brazilian bank. *International Journal of Innovation: IJI Journal*, 9(3), 474-495.

Instituto de Estudos para o Desenvolvimento Industrial (2019). *A indústria do Futuro no Brasil e no Mundo*. Available at: https://iedi.org.br/media/site/artigos/20190311_industria_do_futuro_no_brasil_e_no_mundo.pdf.

Japiassú, C. E., & Guerra, I. F. (2017). 30 anos do relatório Brundtland: nosso futuro comum e o desenvolvimento sustentável como diretriz constitucional brasileira. *Revista de Direito da Cidade*, 9(4), 1884-1901.

Jarude, J. N. D. M., & Silveira, D. (2021). O sistema financeiro aberto (open banking) sob a perspectiva da regulação bancária e da lei geral de proteção de dados (LGPD). *Revista Jurídica da FA7*, 18(2), 77-90.

Juliani, D. P., Juliani, J. P., Souza, J. A., & Harger, E. M. (2014). Inovação social: perspectivas e desafios. *Revista Espacios*| (35)5, 23.

Keeley, L., Pikkel, R., Quinn, B., & Walters, H. (2015). *Dez tipos de inovação - A disciplina de criação de avanços de ruptura*. São Paulo, SP: DVS Editora.

Khosravi, P., Newton, C., & Rezvani, A. (2019). Management innovation: A systematic review and meta-analysis of past decades of research. *European Management Journal*, *37*(6), 694-707.

Kilian, A. P. V. (2005). *O processo de geração de ideias fundamentado no pensamento lateral: uma aplicação para mercados maduros*. (Master's Dissertation) Centro Tecnológico, Federal University of Santa Catarina, Florianópolis, SC, Brasil,

Kosinski, D. S. (2021). A digitalização dos meios de pagamento: o pix e as centrais *bank digital currencies* em perspectiva comparada. *Textos de Economia*, 24(1), 1-26.

Lasserre, G. (1972). *O cooperativismo*. Mira-Sintra, Portugal, Euro-América, 1977. 120p.

Luqmani, A., Leach, M., & Jesson, D. (2017). Factors behind sustainable business innovation: The case of a global carpet manufacturing company. *Environmental Innovation and Societal Transitions*, (24), 94-105.

Machado, D. D. P. N., & Carvalho, L. C. (2013). Ambiente favorável ao desenvolvimento de inovações: proposição de um modelo de análise organizacional. *Revista de Administração*, 48(3), 592-607.

Majaro, S. (1992). *Managing ideas for profit: The creative gap*. USA, McGraw-Hill.

Meinen, Ê., & Port, M. (2014). *Cooperativismo financeiro*: percurso histórico, perspectivas e desafios. Brasília, DF, Confebras.

Mendes, R. M., & Miskulin, R. G. S. (jul./set. 2017). A análise de conteúdo como uma metodologia. *Cadernos de Pesquisa* (47)165, 1044-1066.

Meyer, A. D. S. (2020). *A influência da cultura de inovação em um programa de geração de ideias de um banco comercial*. (Master's Dissertation) Universidade Positivo, Curitiba – PR, Brazil.

Moricochi, L., & Gonçalves, J. S. (1994). Teoria do desenvolvimento econômico de Schumpeter: uma revisão crítica. *Informações Econômicas*, São Paulo, 24(8), 27-35.

Nelson, R. R. (1985). *An evolutionary theory of economic change*. Cambridge, Massachusetts, EUA, Harvard University Press.

Oliveira, D. C. D. (2008). Análise de conteúdo temático-categorial: uma proposta de sistematização. *Rev. enferm. UERJ*, 569-576.

Oliveira, M. P., & Malagolli, G. A. (2016). O impacto da tecnologia da informação na evolução dos serviços bancários. *Revista Interface Tecnológica*, 13(1), 39-52.

Onzi, V., Nesello, P., Chais, C., Ganzer, P. P., Radaelli, A. A. P., & Olea, P. M. (2017). Startups fintechs: uma análise a partir do radar da inovação. *Revista E-Tech: Tecnologias para Competitividade Industrial*. 10(1), 3-21. ISSN-1983-1838.

Organização das Cooperativas do Brasil (2021). *Anuário do Cooperativismo Brasileiro. 2021*. Brasília, DF. Available at: https://www.anuario.coop.br/.

Organisation for Economic Co-operation and Development (2018). *Oslo Manual 2018: Guidelines for Collecting, Reporting and Using Data on Innovation (4th ed.)*. The Measurement of Scientific, Technological and Innovation Activities, OECD Publishing, Paris/Eurostat, Luxembourg.

Organisation for Economic Co-operation and Development (2020). *Manual de Oslo 2020: Guidelines for Collecting, Reporting and Using Data on Innovation*. The Measurement of Scientific, Technological and Innovation Activities, OECD Publishing, Paris/Eurostat, Luxembourg.

Petticrew, M., & Roberts, H. (2008). *Systematic reviews in the social sciences*: a practical guide. New Jersey, EUA, John Wiley & Sons.

Pimentel, R. (2019). Cultura de inovação em uma escola de negócios: Um estudo inspirado pela teoria da prática. *Revista Eletrônica de Ciência Administrativa*, 18(1), 63-84.

Pimentel, R., Loiola, G. F., & Diogo, T. M. (2020). Cultura de inovação e aprendizagem: o programa clube dos apaixonados por desafios. *RAM - Revista de Administração Mackenzie*, 21(4), 1-25.

Pinheiro, M. A. H. (2008). Cooperativas de crédito: história da evolução normativa no Brasil. Brasília: BCB, 2008.

Porto, S. B., & Ferreira, M. V. (2015). Cooperativismo e desenvolvimento socioeconômico: uma análise da cooperativa de crédito rural de economia solidária – Solicred. *Cadernos Gestão Social*, 5(2), 323-337.

Quandt, C. O., Silva, H. D. F. N., Ferraresi, A. A., & Frega, J. R. (2014). Programas de gestão de ideias e inovação: as práticas das grandes empresas na região sul do Brasil. RAI - *Revista de Administração e inovação*, 11(3), 176-199.

Rogers, E. M. (1995). Lessons for guidelines from the diffusion of innovations. *The Joint Commission journal on quality improvement*, 21(7), 324-328.

Rosa Vendler, M. H., & Maçaneiro, M. B. (2018). Elementos da cultura de inovação do ambiente interno que contribuem para adoção de estratégias de ecoinovação para competitividade: análise de empresas industriais do setor da construção. *Ciências da Administração*, 20(51), 120-137.

Rovani, B. P., Marchesan, J., Ramos, F. M., & Vargas, L. P. (2020). Desenvolvimento Socioeconômico e Cooperativismo de Crédito no Município de Concórdia/SC. *Desenvolvimento em Questão*, 18(52), 308-323.

Samian, M., Saadi, H., Asadi, M., Mirzaei, K., Ansari, E., Ahmadihagh, E., & Soleymani, A. (2017). The role of fishing cooperatives on social–Economic and cultural development of rural areas of Bord Khun city of Bushehr, Iran. *Journal of the Saudi Society of Agricultural Sciences*, 16(2), 178-183.

Schneider, J. O. (2012). A doutrina do cooperativismo: análise do alcance, do sentido e da atualidade dos seus valores, princípios e normas nos tempos atuais. *Cadernos Gestão Social*, 3(2), 251-273.

Schreiber, D., Silva, D. F. G., & Nunes, M. P. (2021). Uma análise reflexiva da ISO 56002–Gestão da Inovação e Sistema de Gestão da Inovação à luz da teoria sobre inovação. *COLÓQUIO-Revista do Desenvolvimento Regional*, 18(3, jul/set), 63-86.

Sérgio, M. C., & Gonçalves, A. L. (2019). Análise e interpretação de ideias: proposta de um modelo. *Perspectivas em Ciência da Informação*, (24)2, 54-71.

Sérgio, M. C., Dandolini, G. A., Souza, J. A., & Gonçalves, A. L. (2015). Indicadores quantitativos de inovação como suporte ao processo de gestão de ideias. *Revista E-Tech: Tecnologias para Competitividade Industrial*. 8(1), 69-86. ISSN-1983-1838.

Sérgio, M. C., Gonçalves, A. L., & Souza, J. A. (2015). Um modelo para auxiliar na tomada de decisão no domínio de gestão de ideias. *Future Studies Research Journal: Trends and Strategy*, 7(2), 95-118.

Serra, F. A. R., Fiates, G. G., & Alperstedt, G. D. (2007). Inovação na pequena empresa-estudo de caso na tropical Brasil. *Journal of Technology Management & Innovation*, 2(2), 170-183.

Stal, E., Nohara, J. J., & Chagas Jr, M. F. (2014). Os conceitos da inovação aberta e o desempenho de empresas brasileiras inovadoras. *RAI - Revista de Administração e Inovação*, *11*(2), 295-320.

Szalavetz, A. (2020). Digital transformation–enabling factory economy actors' entrepreneurial integration in global value chains?. *Post-Communist Economies*, 32(6), 771-792.

Taborda, A. (1933). Os 28 Tecelões de Rochdale. História dos probos pioneiros de Rochadale. Trad Holyoake, G., J. Rio de Janeiro: Livraria Francisco Alves.

Tellis, G. J., Prabhu, J. C., & Chandy, R. K. (2009). Radical innovation across nations: the preeminence of corporate culture. *Journal of marketing*, 73(1), 3-23.

Terra, J. C. C. (2007). *Inovação: quebrando paradigmas para vencer*. São Paulo: Saraiva, 23-39.

Thom, N. (2016). Dados e perspectivas na gestão de ideias: fatores internos e externos que influenciam de forma positiva a eficiência da gestão de ideias. *Revista em Gestão, Inovação e Sustentabilidade*, 2(2), 164-175.

Tidd, J., & Bessant, J. (2015). *Gestão da inovação*-5, Porto Alegre, Bookman.

Tigre, P. (2014). *Gestão da inovação: uma abordagem estratégica, organizacional e de gestão de conhecimento*. Rio de Janeiro: Elsevier Brasil.

Tigre, P. B. (2006). Gestão da inovação: a economia da tecnologia no Brasil. Rio de Janeiro. *Campus/Elsevier*, 282.

Tropman, J. E. (1998). *The management of ideas in the creating organization*. Santa Barbara, California, USA: Greenwood Publishing Group.

Valdati, A. D. B., Souza, J. A. D., Leite, A. D. O., & Rados, G. J. V. (2020). Caracterização do processo de gestão de ideias no contexto do Frontend da inovação: uma revisão integrativa. *Perspectivas em Gestão & Conhecimento*, 10(3), 205-225.

Vandenbosch, B., Saatcioglu, A., & Fay, S. (2006). Idea management: a systemic view. *Journal of Management Studies*, 43(2), 259-288.

Varandas Junior, A., Salerno, M. S., & Miguel, P. A. C. (2014). Análise da gestão da cadeia de valor da inovação em uma empresa do setor siderúrgico. *Gestão & Produção*, 21(1), 1-18.

Vargas, S. M. L., Gonçalo, C. R., Ribeirete, F., & Souza, Y. S. D. (2017). Práticas organizacionais requeridas para inovação: um estudo em empresa de tecnologia da informação. *Gestão & Produção*, 24(2), 221-235.

Vaz, C. R & Maldonado, U. R. (2017). *Empreendedorismo, inovação e sustentabilidade: uma integração dos conceitos*. In *Empreendedorismo, inovação e sustentabilidade: origem, evolução e tendências.* Florianópolis: UFSC.

Ven A. H. V., Angle, H. L., & Poole, M. S. (Eds.). (2000). *Research on the management of innovation: the Minnesota studies*. New York: Oxford University Press on Demand.

Ven, A. H. V, Polley, D. E., Garud, R., & Venkataraman, S. (1999). Mapping the innovation journey.In Ven, A. H. V., Polley, D. E., Garud, R., & Venkataraman, S. *The Innovation Journey*. New York: Oxford University Press. 21-25.

Voigt, K. I., & Brem, A. (2006, June). Integrated idea management in emerging technology ventures. In *International Conference on Management of Innovation and Technology* (v. 1, pp. 211-215). IEEE.

Yin, R. K. (2001). Estudo de caso: *planejamento e métodos*. Trad. Daniel Grassi, 2. ed. .ed. - Porto Alegre: Bookman.

Zanella, L. C. H. (2009). *Metodologia de estudo e de pesquisa em Administração*. Florianópolis: Departamento de Ciências da Administração/UFSC, 129-149.

APPENDIX A - SEMI-STRUCTURED INTERVIEW WITH THE PERSON IN CHARGE OF CRESOL'S INNOVATION LAB

This interview was conducted with the purpose of understanding the dynamics and functioning of Cresol's innovation laboratory and its connections with the system's central and individual offices. It is part of a scientific research and does not identify the respondents, and the data reported in it will be used exclusively in this research, as a way to combat misuse of purpose.

1 How does the structure of the innovation program of the cooperative work?

2 Do the individual members and central offices participate in the structuring stages of the program or only in the suggestion of ideas, as users of the innovation laboratory?

3 How many people in the central office team manage the innovation lab?

4 What activities are performed by the innovation lab team of the Cresol Confederation?

5 How do the central and singular collaborators have access to information about the laboratory and submit their ideas for innovation in the cooperative?

6 What is the flow between the registration of ideas and implementation?

7 What were the most recurrent themes in the ideas proposed during the first year of existence of the innovation laboratory?

8 How many ideas were implemented in the first year of the laboratory?

9 Which areas were contemplated with these implemented ideas?

APPENDIX B - SEMI-STRUCTURED INTERVIEW WITH THE SUPERINTENDENT OF THE SINGULAR CRESOL *PROGRESSO*

This interview was conducted in order to understand which products and services could be linked to each cooperative principle. It is part of a scientific research and does not identify the respondents, and the data informed in it will be used exclusively in this research, as a way to combat misuse of purpose.

1 Which products and/or services offered by the cooperative are related to the 1st cooperative principle?

2 What products and/or services offered by the cooperative are related to the 2nd cooperative principle?

3 What products and/or services offered by the cooperative are related to the 3rd cooperative principle?

4 What products and/or services offered by the cooperative are related to the 4th cooperative principle?

5 What products and/or services offered by the cooperative are related to the 5th cooperative principle?

6 What products and/or services offered by the cooperative are related to the 6th cooperative principle?

7 Which products and/or services offered by the cooperative are related to the 7th cooperative principle?

APPENDIX C - CHECKLIST/MODEL FOR EVALUATION OF THE INNOVATION PROGRAM AND INTERNAL GENERATION OF IDEAS IN COOPERATIVES

This questionnaire consists of 32 multiple-choice questions, which aim to identify whether Cresol's internal innovation and idea generation program meets the mentioned aspects totally, partially or not. It is part of a scientific research that aims to analyze whether Cresol's innovation and idea generation program is aligned with the recommendations of the literature on the subject, of ISO 56002/2019 and what the seven principles of cooperativism indicate.

Checklist - Program for innovation and internal generation of ideas in Cooperatives				
1 Factors influencing the production of innovative ideas in the organization	**Yes**	**No**	**Partially**	**Observations**
1.1 Mission, vision, and values of the organization contemplate innovation				
1.2 Employees have the autonomy to come up with new ideas				
1.3 The organization is an environment that offers psychological security for employees to innovate				
1.4 The organization promotes socialization, group formation and networking among employees				
1.5 The internal communication is effective in disseminating information about innovation programs				
1.6 The organization offers an environment with creative stimulus				
1.7 The organization offers training that stimulates thinking about new alternatives for processes, products and services				
1.8 The leadership stimulates, encourages, and welcomes the presentation of innovative ideas				
1.9 The organization is risk-oriented, accepts mistakes, and encourages experimentation				
1.10 The organization has some type of award, reward, or potential stimulus program for innovative ideas				
1.11 The organization has a sector or professional responsible for mapping the market (competition, potential opportunities and risks)				
2 Internal idea generation techniques	**Yes**	**No**	**Partially**	**Observations**
2.1 The organization promotes forums to stimulate conversation about innovation among employees				
2.2 The organization encourages meetings outside working hours to discuss innovation				
2.3 The organization has innovation agents or a responsible person or an innovation sector				
2.4 The organization offers some time in the workload for employees to devote to thinking about innovations				

2.5 The organization usually does brainstorming to raise ideas and suggestions				
2.6 The organization has an Idea Pool				
2.7 The organization holds innovation events (hackathons, days, competitions)				
2.8 The organization has defined personas and empathy maps that are accessible to all employees				
2.9 The organization has and is available to everyone the Value Proposition				
2.10 The organization encourages employees to act and think like owners (internal entrepreneurship)				
3. Idea management processes	**Yes**	**No**	**Partially**	**Observations**
3.1 The organization has an idea evaluation and selection process				
3.2 The criteria for the selection of ideas are clear and disseminated to all				
3.3The organization provides feedback to all participants in the idea generation program				
3.4 Deployed ideas are disseminated to everyone				
3.5 It is possible to track the implementation status of ideas				
3.6 The organization has control over the resources generated or saved from the implemented ideas				
4. Seven principles of cooperativism	**Yes**	**No**	**Partially**	**Observations**
The projects implemented in the last two years include:				
4.1 The projects implemented in the last two years contemplate 2nd Democratic Member Control (pre-meetings and OGAs during the pandemic, possibility to exercise the vote, and others)				
4.2 The projects implemented in the last two years contemplate 3rd Member Economic Participation (capital stock, payment of interest, payment of surplus, and others)				
4.3 The projects implemented in the last two years include 5th Education, training, and information (annual performance report, sending a letter about the payment of interest and surplus, training programs for governance and employees in the context of the pandemic, LGPD, FATES management, and others)				
4.4 The projects implemented in the last two years include 6th Cooperation among cooperatives (relationship with the central and confederation, relationship with partner cooperatives, agro-industrial, health cooperatives, service cooperatives, etc.), systemic integration, and others)				
4.5 The projects implemented in the last two years contemplate 7th Concern for the community (programs of formation for the community, registration of volunteers, socio-environmental responsibility, project management				

(launching tool and proof of accomplishment of actions) and others)				
Total				

APPENDIX D - QUESTIONNAIRE TO SUPERINTENDENTS

This questionnaire is composed of fifteen questions, six of which are multiple-choice and one open-ended. It is part of a scientific research that aims to analyze the perception of the executive board about the contribution of the program of innovation and internal generation of ideas for the sustainable growth of the cooperative. The questionnaire does not identify the respondents and the data provided in it will be used exclusively in this research, as a way to combat misuse of purpose.

When it comes to innovation, consider not only technological innovations, but also improvements in processes and products to make them more efficient or suitable for the market.

1 - On a scale of 1 to 5, what is the level of importance of innovation in the strategic planning of your cooperative?
( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5

2 - What is the level of involvement of the executive board in encouraging leaderships to present ideas aimed at continuous improvement?
( ) bad ( ) good ( ) neutral ( ) great ( ) excellent

3 - What is the level of encouragement exercised by the confederation to singular for the promotion of training and meetings to discuss innovation with employees?
( ) bad ( ) good ( ) neutral ( ) great ( ) excellent

4 - What is the level of effectiveness and sufficiency of the actions to promote innovation that the Innovation Lab of the confederation carries out for the entire system?
( ) bad ( ) good ( ) neutral ( ) great ( ) excellent

5 - How efficient is the communication between the confederation and the individual companies regarding the innovation program and the ideas implemented?
( ) bad ( ) good ( ) neutral ( ) great ( ) excellent

6 - Looking at your singular, how is the level of autonomy and trust offered to employees to present ideas to direct managers?
( ) bad ( ) good ( ) neutral ( ) great ( ) excellent

7 - In your perception, what is the level of contribution that innovation in products and systems brings to the sustainable growth of the cooperative today?
( ) bad ( ) good ( ) neutral ( ) great ( ) excellent

8 - On a scale of 1 to 5, how much do you believe that innovation from innovative ideas arising from employees can affect the sustainable growth of the cooperative?
( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5

9 - Regarding the seven principles of cooperativism and the innovations performed by the cooperative, what is the level of connection you perceive between them?
( ) bad ( ) good ( ) neutral ( ) great ( ) excellent

10 - Regarding the processes that are connected to the 2nd Democratic Member Control (pre-meetings and OGAs during the pandemic, possibility to exercise the vote, and others), how is the level of innovation?
( ) bad ( ) good ( ) neutral ( ) great ( ) excellent

11 - Regarding the products and processes that are connected to the 3rd Member Economic Participation (capital stock, payment of interest, payment of surplus, and others), how is the level of innovation?
( ) bad ( ) good ( ) neutral ( ) great ( ) excellent

12 - Regarding the processes that connect to the 5th Education, training, and information (annual performance report, sending a letter about the payment of interest and surplus, training programs for governance and employees in the context of the pandemic, LGPD, FATES management, and others), how is the level of innovation?
( ) bad ( ) good ( ) neutral ( ) great ( ) excellent

13 - Regarding the processes that connect to the 6th Cooperation among cooperatives (relationship with the central and confederation, relationship with partner cooperatives, agro-industrial, health cooperatives, service cooperatives, etc.), systemic integration, and others), how is the level of innovation?
( ) bad ( ) good ( ) neutral ( ) great ( ) excellent

14 - Regarding the processes that are connected to the 7th Concern for the community (programs of formation for the community, registration of volunteers, socio-environmental responsibility, project management (launching tool and proof of accomplishment of actions) and others), how is the level of innovation?
( ) bad ( ) good ( ) neutral ( ) great ( ) excellent

15 - Comment on what, in your perception, are the biggest obstacles for innovation to occur in the cooperative.

APPENDIX E - QUESTIONNAIRE FOR EMPLOYEES OF THE SINGULAR COOPERATIVE

This questionnaire consists of 14 questions, eight multiple-choice and one open-ended. It is part of a scientific research that aims to analyze the perception of employees about the innovation program of Cresol. The questionnaire does not identify the respondents, and the data provided in it will be used exclusively for this research, as a way to combat misuse.

When it comes to innovation, consider not only technological innovations, but also improvements in processes and products to make them more efficient or suitable for the market.

1 - What is your level of knowledge about the existence of the Innovation Lab of the confederation?
( ) poor ( ) regular ( ) good ( ) great ( ) excellent

2 - What is your level of knowledge about the operation of the Innovation Lab of the confederation?
( ) poor ( ) good ( ) neutral ( ) great ( ) excellent

3 - What is your level of participation in the innovation projects of the confederation?
( ) I have never participated ( ) I have participated once ( ) I have participated twice ( ) I have participated three times ( ) I participate whenever I can (more than three times)

4 - What is your level of knowledge about the ideals implemented by the laboratory in the last year?
( ) bad ( ) good ( ) neutral ( ) great ( ) excellent

5 - In your opinion, what is the level of innovation of the cooperative?
( ) bad ( ) good ( ) neutral ( ) great ( ) excellent

6 - In your opinion, what is the level of stimulus and encouragement that the leadership exercises with the employees so that innovative ideas are suggested?
( ) bad ( ) good ( ) neutral ( ) great ( ) excellent

7 - In your opinion, what is the level of creative stimulus that the cooperative offers to the employees on a daily basis?
( ) bad ( ) good ( ) neutral ( ) great ( ) excellent

8 - In your opinion, what is the level of orientation to assume risks, accept errors and stimulate experimentation of your cooperative?
( ) bad ( ) good ( ) neutral ( ) great ( ) excellent

10 - Regarding the processes that are connected to the 2nd Democratic Member Control (pre-meetings and OGAs during the pandemic, possibility to exercise the vote, and others), how is the level of innovation?
( ) bad ( ) good ( ) neutral ( ) great ( ) excellent

11 - Regarding the products and processes that are connected to the 3rd Member Economic Participation (capital stock, payment of interest, payment of surplus, and others), how is the level of innovation?
( ) bad ( ) good ( ) neutral ( ) great ( ) excellent

12 - Regarding the processes that connect to the 5th Education, training, and information (annual performance report, sending a letter about the payment of interest and surplus, training programs for governance and employees in the context of the pandemic, LGPD, FATES management, and others), how is the level of innovation?
( ) bad ( ) good ( ) neutral ( ) great ( ) excellent

13 - Regarding the processes that connect to the 6th Cooperation among cooperatives (relationship with the central and confederation, relationship with partner cooperatives, agro-industrial, health cooperatives, service cooperatives, etc.), systemic integration, and others), how is the level of innovation?
( ) bad ( ) good ( ) neutral ( ) great ( ) excellent

14 - Regarding the processes that are connected to the 7th Concern for the community (programs of formation for the community, registration of volunteers, socio-environmental responsibility, project management (launching tool and proof of accomplishment of actions) and others), how is the level of innovation?
( ) bad ( ) good ( ) neutral ( ) great ( ) excellent

14 - Comment on what could or should be improved in the innovation process of the cooperative.