

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

**WESTERN PARANÁ STATE UNIVERSITY
PROFESSIONAL MASTER'S IN ADMINISTRATION**

**COMPARTILHAMENTO DO CONHECIMENTO EM REDE E AS PRÁTICAS DE
INOVAÇÃO ORIENTADA PARA A SUSTENTABILIDADE EM ASSOCIAÇÕES
COMERCIAIS E EMPRESARIAIS**

**NETWORKED KNOWLEDGE SHARING AND SUSTAINABILITY-ORIENTED
INNOVATION PRACTICES IN TRADE ASSOCIATIONS**

[TRADUÇÃO INGLESA]

ANA CAROLINA DA SILVA PINATTI

CASCADEL/PR

2025

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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: Dra Elizandra da Silva

Dissertação apresentada ao Programa de Pós-Graduação 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): Dra Elizandra da Silva

CASCADEL/PR

2025

International Cataloging-in-Publication Data
UNIOESTE Library System

Pinatti, Ana Carolina da Silva
Networked knowledge sharing and sustainability-oriented
innovation practices in trade associations / Ana Carolina da
Silva Pinatti; Advisor: Elizandra da Silva, 2025.
148 f.

Dissertation (Degree in of Master of Science in Administration)
– Department of Administration, Western Paraná State
University, 2025

1. Knowledge Sharing. 2. Sustainability-Oriented Innovation 3.
Sharing Networks. I. Silva, Elizandra da. II. Title.



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Universidade Estadual do Oeste do Paraná
Reitoria
CNPJ 78.680.337/0001-84
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Tel.: (45) 3220-3000 - www.unioeste.br
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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:

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To my mother, my most outstanding example of strength and courage; to my father (*in memoriam*), my guardian angel and greatest love; and my fiancé, my haven and source of encouragement.

ACKNOWLEDGEMENTS

I would first like to thank God for the gift of life, for all the knowledge I have acquired throughout my life, and for His spiritual presence during all the difficult moments, which has sustained me through His word, which has served as a comfort to my heart. I am grateful for my persistence, dedication, and perseverance during my academic journey, trusting in my potential to achieve my goals.

I thank my father (*in memoriam*), my stepfather, my sister, and my brother for all their support during this intense period and, above all, my mother and my fiancé for not letting me give up, for listening to my complaints and tears, and especially for advising me and holding my hand, being my two angels from God on Earth.

I am also grateful to all the teachers who were part of my educational journey at school, college, and graduate school, allowing me to evolve academically and, above all, those teachers who became my friends and still share conversations with me today, holding a special place in my heart and serving as actual examples in their profession, for their affection, understanding, and teaching, showing their love for their profession. I thank all my master's colleagues for the exchange of knowledge, laughter, and support. I also appreciate my colleagues at the Commercial and Business Association of Marechal Cândido Rondon – ACIMACAR for their understanding of my moments of absence and for encouraging me to continue.

Finally, I would like to thank all the presidents who contributed to this research for dedicating their time to the interviews, sharing their knowledge with this study, and for their positive reception, which always helped whenever I needed it. They deserve all the success they have achieved.

RESUMO

Pinatti, A. C. S. (2025). *Compartilhamento do conhecimento em rede e as práticas de inovação orientada para a sustentabilidade em Associações Comerciais e Empresariais*. Dissertação de mestrado, Universidade Estadual do Oeste do Paraná, Cascavel, PR, Brasil.

O compartilhamento de conhecimento em rede favorece o desenvolvimento de novos produtos, serviços, processos e práticas organizacionais, ampliando a qualidade, a agilidade, a eficácia e promovendo a inovação e a sustentabilidade de forma acelerada. Considerando esse panorama, esta dissertação tem por objetivo identificar como o compartilhamento do conhecimento em rede auxilia no desenvolvimento de práticas de Inovação Orientada para a Sustentabilidade (IOS). Foram analisadas oito Associações Comerciais e Empresariais (ACEs) que fazem parte da Coordenadoria das Associações Comerciais e Empresariais do Oeste do Paraná (Caciopar). Trata-se de um estudo descritivo, de abordagem qualitativa, com pesquisa realizada por meio de entrevistas estruturadas, empregando a Análise de Conteúdo com uso do software Atlas TI web. Os achados indicam que, no que diz respeito ao compartilhamento do conhecimento na rede pesquisada, as categorias de Participação – que relata sobre a participação dos membros dentro da rede –, os Objetivos em comum – que concerne aos objetivos que a rede possui, bem como aos objetivos de cada ACE –, os Canais de comunicação – que apresenta os meios de comunicação utilizados pela rede –, e a Hierarquia e liderança – que traz aspectos de como os líderes da rede abordam a inovação orientada para a sustentabilidade –, contribuem para que os membros da rede desenvolvam e compartilhem suas práticas de IOS. Já a categoria de Confiança, que apresenta aspectos de confiança entre os membros da rede, foi identificada como um contribuidor para o compartilhamento do conhecimento, mas não trouxe evidências de sua colaboração para o desenvolvimento de práticas de IOS. Constatou-se que as ACEs desenvolvem prática de IOS em produtos e serviços por meio da Paraná Energia, Certificata, Pós-Grauação em ESG e treinamentos, palestras e cursos, processos mediante programas internos de separação de lixo, eliminação do uso de papel, utilização de cisterna e placa solar. Também através de práticas organizacionais, por meio de congresso sobre ESG, utilização de mão de obra local, palestras e arrecadações de doações para entidades, entre outros, tanto na rede da Caciopar, com práticas semelhantes entre as ACEs, quanto por iniciativas e parcerias que cada ACE desenvolve dentro de sua cidade, através do poder público e/ou com a rede privada. Para a realização de pesquisas futuras, sugere-se uma investigação acerca de como a diversidade dos membros das associações comerciais pode influenciar na criação e disseminação de práticas de IOS, podendo considerar aspectos como a região e porte da associação comercial e empresarial. Ainda, pode-se desenvolver indicadores para avaliar como as associações comerciais implementam e mantêm as suas práticas de IOS. Por fim, sugere-se a realização de estudos futuros que se aprofundem nas parcerias externas à rede das entidades, como aquelas estabelecidas com prefeituras, empresas e outras organizações, de modo a evidenciar como ocorre o processo de compartilhamento do conhecimento entre essas instituições para o desenvolvimento de práticas de IOS.

Palavras-chave: Compartilhamento do Conhecimento; Inovação Orientada para a Sustentabilidade; Redes de Compartilhamento;

ABSTRACT

Pinatti, A. C. S. (2025). *Networked knowledge sharing and sustainability-oriented innovation practices in trade associations*. Master's degree dissertation, Western Paraná State University, Cascavel, PR, Brazil.

Knowledge sharing in networks fosters the development of new products, services, processes, and organizational practices, thereby enhancing quality, agility, and effectiveness and accelerating innovation and sustainability. Considering this scenario, this dissertation aims to identify how knowledge sharing in networks facilitates the development of Innovation-Oriented Sustainability (SOI) practices. Eight Trade Associations (TAs) that are part of the Coordination of Commercial and Business Associations of Western Paraná (CACIOPAR) were analyzed. This is a descriptive study employing a qualitative approach, with research conducted through structured interviews and analyzed using Content Analysis with the Atlas .ti web software. The findings indicate that, regarding knowledge sharing in the network surveyed, the categories of Participation – which reports on the participation of members within the network –, Common Goals – which concerns the goals of the network, as well as the goals of each TA –, Communication Channels – which presents the means of communication used by the network – and Hierarchy and Leadership – which brings aspects of how network leaders approach sustainability-oriented innovation – contribute to network members developing and sharing their SOI practices. The Trust category, which encompasses aspects of trust between network members, was identified as a contributor to knowledge sharing; however, it did not provide evidence of its contribution to the development of SOI practices. It was found that TAs develop SOI practices in products and services through Paraná Energia, Certificata, Postgraduate Studies in ESG, and training, lectures, and courses, processes through internal waste separation programs, elimination of paper use, use of cisterns, and solar panels. It was also found that this undertaking occurs through organizational practices, conferences on ESG, use of local labor, lectures, and collection of donations for entities, among others, both in the CACIOPAR network, with similar practices among TAs and through initiatives and partnerships that each TA develops within its city, through the public authorities and/or with the private network. For future research, we suggest investigating how the diversity of trade association members can influence the creation and dissemination of SOI practices, considering aspects such as the region and size of the trade association. Furthermore, indicators could be developed to assess how trade associations implement and maintain their SOI practices. Finally, we suggest that future studies delve deeper into partnerships outside the network of entities, such as those established with city halls, companies, and other organizations, to highlight how the process of knowledge sharing between these institutions facilitates the development of SOI practices.

Keywords: Knowledge Sharing; Sustainability-Oriented Innovation; Sharing Networks;

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LIST OF ABBREVIATIONS AND ACRONYMS

TA	Trade Associations
CACB	Confederation of Commercial and Business Associations of Brazil
CACIOPAR	Coordination of Commercial and Business Associations of Western Paraná
FACIAP	Federation of Commercial and Business Associations of Paraná
SOI	Sustainability-oriented Innovation
NGO	Non-Governmental Organization
SEBRAE	Brazilian Macro and Small Business Support Service
SPC	<i>Serviço de Proteção ao Crédito</i> (Credit Protection Service)

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1 INTRODUCTION

The process of sustainability-oriented innovation and the pursuit of knowledge is entirely linked to networks and social relationships among members of an organization (Coenen & López, 2010). Innovation generated from expertise is crucial for an organization's sustainability development and the creation of a competitive advantage. Each organization needs to identify and be cautious of negative influences from the external environment while also identifying its strengths to seize opportunities and address new challenges (Penrose, 2009; Urbancová & Vrabcová, 2023). A concept that has emerged in the current literature concerns sustainability-oriented innovation (SOI), which involves innovations aimed at direct changes in organizational values, products, processes, or practices, with the intention of assessing the impacts of these actions on the social, economic, and environmental spheres. In this scenario, sustainability emerges as a crucial innovation initiative, becoming one of the pillars of a future business vision through the development of business solutions and enhancing economic development with a focus on sustainable development (Lima et al., 2020; Melo et al., 2023).

This search and the act of sharing knowledge can occur in an inter-organizational manner, involving actors connected in a sharing network. This interaction contributes to the development of new products, services, and processes with higher quality, speed, and efficiency, accelerating innovation, promoting sustainability, and generating competitive advantage (Alharbi & Aloud, 2024; Mustika et al., 2022; Park & Hong, 2022; Van Houten, 2023).

When acquiring knowledge for the development of sustainable innovations, it is often found to be dispersed among various members of society. Therefore, the participation of actors such as governments, universities, third-sector entities, and civil society is essential to promoting sustainability in a business (Goi et al., 2022; Wilke & Pyka, 2024).

Sharing and collaboration between organizations in a network, whether in the same industry or with complementary focuses, through accumulated learning and interactions and exchanges between suppliers, customers, partners, financial institutions, and government, has a direct link to the innovation process, promoting the dissemination of knowledge, the sharing of assets, and a possible reduction in risks, developing innovations and balancing the needs of stakeholders. Thus, organizations have control over their resources but make decisions about their use jointly (Lima et al., 2020; Melo et al., 2023; Nascimento et al., 2022).

For an entity to acquire knowledge about SOI, it is essential that it establishes means of cooperation and sharing with other organizations or sectors through collaborative networks. In this way, innovative actions, products, services, and processes developed and subsequently implemented can be guided by sustainability dimensions, favoring organizational development and success (Dzhengiz et al., 2023; Frempong et al., 2021).

In this vein, sharing knowledge within a collaborative network strengthens relationships between organizations, increases innovation, reinforces knowledge and capacity sharing, and fosters social change. Setting common goals among members, collaborating on projects, participating voluntarily, and promoting the autonomy of the group involved are the main characteristics of a network (Machado & Kuhl, 2023; Nova, 2023).

A field of study in which knowledge sharing occurs frequently is the network formed by Trade Associations (TAs). The primary activities of these institutions include integrating the business class, meeting the needs of members with high-quality products and services, promoting sustainability, and defending the sector's interests (Federation of Commercial and Business Associations of the State of Paraná [FACIAP], 2024).

In this context, these associations are an essential network within civil society, as they bring problems encountered in the private sphere into the public arena, reporting and seeking improvements to problems that affect society. Thus, social relations, the search for solutions to problems, and the sustainable development of society become the basis of a TA (Rajwani et al., 2015).

Innovation in this field is understood as a driver of sustainable development. For SOI to become a reality, institutions must constantly seek new knowledge. When carried out through sharing networks, this search can be a strategic path to promoting sustainability and driving organizational growth, whether by sharing knowledge already acquired or incorporating lessons learned from other network members (Pinto et al., 2020).

1.1 RESEARCH PROBLEM

The development of SOI can often involve high costs and organizational risks. In this scenario, the exchange of information through network collaboration and mutual assistance among the actors involved emerges as a practical strategy to minimize risks and seek competitive advantages, thereby enhancing the profitability of the entities participating in the process (Machado & Kuhl, 2023).

The diversity of the SOI process can also be a limiting factor for its adoption in organizations. The combination of technological, organizational, and institutional innovations in the transition to greater sustainability involves the development of new routines, the implementation of new management structures, and the diversification of new communication channels, making it difficult for organizations with little structure to develop SOI (Cholez et al., 2023) adequately.

With innovation being crucial for greater sustainability, many organizations are seeking ideas and solutions that can be developed into Sustainable Operations Initiatives (SOI). However, these ideas may not be easy to create alone, whether for incremental innovation, which involves simple changes in processes, products, or services, or radical innovation, which involves long-term changes and significant alterations within the organization. Both types of innovation tend to be more likely to be discarded in the innovation process, making the support of external agents in the SOI creation process a path to their development (Chen et al., 2023).

Thus, regarding the development of innovations within organizations, Machado and Kuhl (2023) identified that, when combined with collaboration and sustainability through a network, their results can enable the leveraging of added value to the products and services of the members involved. They also found that the main reasons entities share information with each other are associated with reducing costs associated with the innovation process so that this collaboration and development of actions focused on social, economic, and environmental dimensions can provide a greater balance for sustainability. Ultimately, the primary concern of these entities is the pursuit of new sources of knowledge and resources, as well as the identification of flaws, with the aim of promoting sustainability.

Given this, a network can be understood as the formation of autonomous organizations or entities located in a nearby region that share similar operations, culture, and objectives. Through mutual assistance and knowledge exchange, these entities seek to achieve common goals (Nascimento et al., 2022).

Knowledge sharing and exchange within a network can occur through meetings between managers, connections, and case presentations at meetings, debates, and discussions, among others, since the network facilitates the process of sharing, cooperation, and participation among individuals, to create actions and projects that address economic, social, and environmental demands that are lacking in their sector (Kumasaka et al., 2020).

However, this networked knowledge sharing may not be fully perceived by managers and participating members of the organization, resulting in important information and knowledge for decision-making and value creation for the entity not being properly exploited.

In this sense, mapping this knowledge and information is a relevant process for supporting decision-making, productivity, and innovation development (Jorge et al., 2023).

Networked knowledge sharing and the pursuit of sustainability have contributed to the popularization of innovation concepts and practices aimed at sustainable development among TAs as well. These entities seek to promote and defend the interests of the business class, to generate non-monetary value through the conscious and responsible development of products, services, and actions for their members. In addition, they promote the sustainable development of the associative system and the population in general, ensuring that sustainable innovations and the means to achieve them are directly aligned with the objectives of these institutions. (FACIAP, 2024).

Commercial Associations are third-sector entities focused on the Business Classes. Their primary activities involve integrating the Business Class, meeting the needs of their members with high-quality products and services, promoting sustainability, and advocating for business interests. Among their services are (Credit Protection Service [SPC]) and (Advisory Services S.A. [SERASA]), Sector Centers, digital certification, the (Brazilian Micro and Small Business Support Service [SEBRAE]) entrepreneur service point, room rentals, courses and lectures, health plans, promotional campaigns, fairs, and events (CACIOPAR, 2023).

The strategies adopted by third-sector entities to share knowledge include internal strategies, such as training and education of their members and information sharing through research and certifications. External strategies include relationships with public entities and civic practices within the community in which they operate, with the aim of legitimizing themselves in the eyes of society (Boléat, 1996; Frandsen & Johansen, 2018).

In addition to these strategies, TAs also act as agents for the dissemination and exchange of information, contributing to the generation of knowledge within a given locality. Furthermore, they play a regulatory role in commerce and industry in their cities, establishing voluntary standards of behavior for their members and acting as the “voice of industry” (Rajwani et al., 2015).

Despite this role as agents of knowledge dissemination, it has been observed that the performance of TAs varies significantly in terms of representativeness in their respective cities (Rajwani et al., 2015). Analyzing the representativeness index within the coverage area of Western Paraná, the field of this study, it is noted that the average representativeness varies from 35% in cities such as Marechal Cândido Rondon to only 17% in cities such as São José das Palmeiras (Paraná Institute for Economic and Social Development [IPARDES], 2019).

The central role of TAs in the development and maintenance of their member companies and the influence of these entities in shaping political processes in their environment, as well as their role as spokespersons in the pursuit of innovation, sustainability, and organizational development, allow authors and scholars to consider multiple approaches and theoretical lenses in research involving these entities, which are complex and diverse organizations (Barnett, 2009; Rajwani et al., 2015).

Studies by Boléat (1996), Barnett (2009, 2013), Frandsen and Johansen (2018), and Rajwani et al. (2015) highlighted the relevance of TAs as important agents for the development and innovation of the organizations around them, primarily through the dissemination and sharing of knowledge.

However, topics related to sustainability and SOI are still rarely addressed in the research analyzed, indicating a need for further study in this field, with the potential to generate positive impacts on the sector. Sustainability is one of the pillars of a TA, included within its objectives and principles.

Thus, exploring sustainability-oriented innovations that arise from knowledge sharing in the CACIOPAR network is relevant for entities to contribute positively to each other, that is, for TAs that are more developed and structured in terms of innovation and sustainability to assist smaller and less structured entities, aiming not only at the development of the city in which they are located but also the Western Region of Paraná as a whole (FACIAP, 2022).

Thus, the overall objective of this study is to evaluate the categories of knowledge sharing in networks and their relationship with strategies aimed at developing sustainability-oriented innovation in Commercial and Business Associations.

1.1.1 Research Question

The question that guides this study is as follows: How does knowledge sharing in networks contribute to the development of **innovation practices geared toward sustainability in trade associations?**

1.2 OBJECTIVES

1.2.1 General

The overall objective of this study is to investigate how networked knowledge sharing facilitates the development of sustainability-oriented innovation practices within trade associations.

1.2.2 Specific

To achieve the overall objective, the following specific objectives were defined:

- a) To characterize the CACIOPAR network, formed by the Commercial and Business Associations of Western Paraná;
- b) To survey the associations on their knowledge-sharing practices within the network;
- c) To survey the associations on practices aimed at developing sustainability-oriented innovation in products and services, processes, and organizations;
- d) To identify the categories of network knowledge sharing that contributed to the development of sustainability-oriented innovation practices in products and services, processes, and organizations in the associations.

1.3 JUSTIFICATION AND CONTRIBUTION OF TECHNICAL PRODUCTION

Studying the sustainability of organizations within a network is justified by the environmental, economic, and social impact generated by their activities. These entities act as drivers of development in the environment in which they operate, and their innovations can bring positive results in terms of sustainability, which is essential for the continuity of their actions. Furthermore, it is essential to acknowledge their internal focuses, including efficient management, effectiveness, and organizational flexibility, as well as their external focuses through their stakeholders (Pinto et al., 2020).

With regard to the network, it shows positive results in terms of innovation and organizational performance, noting that entities that are part of a sharing network find it easier to achieve their objectives in terms of innovation, risk management, and partner relations. This evidence is particularly observed in smaller organizations, which have limited markets and resources, leading the network to act as a tool for expanding these aspects and generating greater understanding and knowledge to achieve growth (Mannes & Beuren, 2021; Santos, 2022).

Knowledge is a crucial resource and of interest to organizations. Therefore, understanding an entity's knowledge, the processes through which this knowledge is converted into innovative projects and actions, as well as the ability of these innovations to meet the demands of the environment in which they operate is fundamental to the success and development of organizations (Santos, 2022).

Linked to these entities, there is a need to be dynamic and develop new actions to maintain their economic stability, in addition to fulfilling commitments converted into objectives and goals aimed at social and environmental sustainability. In this context, SOI and the sharing of knowledge related to this theme within the network of entities require attention and focus in order to ensure greater efficiency in sustainable innovations and promote the dissemination of this knowledge among members (FACIAP, 2024; Pinto et al., 2020).

Within the existing literature, bibliographic studies have sought to understand the characteristics of international scientific production on the theme of sustainable innovation (Oliveira et al., 2020; Pinsky et al., 2015), in public administration (Silva & Souza, 2022), in manufacturing industries in Paraná (Machado & Kuhl, 2023) and the business context (Nova, 2023). They also addressed the term focused on SOI (Melo et al., 2023).

Finally, it was possible to locate studies that dealt with sustainability and innovation within the business environment (Lima et al., 2020; Melo et al., 2023; Ruggi et al., 2018); SOI within a network (Fiandrino et al., 2023); innovation within networks (Desidério & Popadiuk, 2015; Nascimento et al., 2022; Vieira et al., 2019); knowledge sharing in networks (McLeod et al., 2024); collaboration and SOI (Machado & Kuhl, 2023; Wilke & Pyka, 2024); and collaboration related to sustainability (Goi et al., 2022).

However, the direction of research on this topic remains unclear, underscoring the need to understand how knowledge sharing occurs within a network and how these organizations develop SOI (Pinto et al., 2020). Furthermore, there is a lack of studies that relate these themes in the context of networks formed by entities. The scarcity of studies on the platforms researched reinforces the relevance of choosing this network as the focus of the present study.

Furthermore, the present study complements existing publications that address knowledge sharing, innovation, and their influence on sustainability (Henriques & Borini, 2023), with a specific focus on TAs. This is justified by the fact that forward-looking organizations are beginning to consider sustainability issues as opportunities, ways to mitigate risks, and means to generate competitive advantage (Oliveira et al., 2020).

TAs play an external role in the community in which they operate, serving the business community, influencing government regulations and policies, and publishing opinions in

pursuit of the collective needs and objectives of their members. However, research related to sustainability and innovation pays little attention to this sector, meaning that in-depth research within these entities develops a clearer view of their purposes, influences, and impacts on the society in which they operate, reflecting their role and characteristics (Rajwani et al., 2015).

In this light, an in-depth study within a knowledge-sharing network and the strategies behind this act of sharing aimed at the development of SOI becomes relevant for the expansion of innovative and sustainable products, services, and actions of the members involved in this network, facilitating access to new knowledge through this sharing, as well as its development and that of the society in which they operate (Pinto et al., 2020).

In terms of practical contribution, there is the development of social skills and capacities of individuals who are involved in associations to which TAs belong, helping their members understand the importance of their organizations in society and sustainable development in the environment in which they operate, since they are based on principles such as solidarity, independence, democracy, citizenship, and volunteer work (Ferreira, 2008; Rajwani et al., 2015; Viegas, 2004).

The practical contribution also extends to the possibility of contributing to the mapping of the means adopted by TAs in the process of sharing knowledge within the network and its effect on the strategies implemented for the development of SOI. This mapping can also be replicated in other organizational segments in future studies.

1.4 DISSERTATION STRUCTURE

The dissertation contains five chapters. The first chapter comprises this introduction, providing a brief contextualization of the innovation process, SOI, and knowledge sharing in networks. Next, the research question guiding this study is presented, along with its general objective and specific objectives, as well as the justification and contribution of the study.

Chapter 2 presents the theoretical framework, addressing topics such as networked knowledge sharing, SOI, TAs, the field of this study, similar studies in Brazil and worldwide, and the categories analyzed.

Chapter 3 outlines the methodological procedures used, divided into subchapters for better understanding, and describes the research design, data collection procedure, proposed model, and data analysis procedure.

Chapter 4 presents the analysis of the data obtained that guided the answers to the research question and objectives. Finally, Chapter 5 presents the conclusions and results obtained, as well as the limitations and suggestions for future work.

2 THEORETICAL AND EMPIRICAL REVIEW

The theoretical basis of this study is knowledge sharing and SOI. Within the theory of knowledge sharing, initial concepts of the topic are presented, followed by concepts related to knowledge-sharing networks, the factors that comprise this network, and the identification of variables for each factor within the knowledge-sharing network. The second theoretical basis focuses on SOI, presenting its concepts and then describing the strategic positions within an organization that seeks to implement SOI, as well as the categories of SOI activities and the variables associated with each category.

2.1 KNOWLEDGE SHARING

Knowledge is formed through the relationship between a subject and an object; the creation of this new knowledge can involve both ideas and ideals initiated by an individual seeking to transform personal knowledge into valuable knowledge for the entire company, requiring intensive and laborious interaction, discussion, and sharing among the members of the group (Nonaka & Takeuchi, 1997).

The combination of information and an individual's human context forms knowledge. This enables an increase in a person's capacity for action, combined with their skills, experience, and interaction with other individuals, becoming an essential element for organizations in their pursuit of innovation, decision-making, performance, and value creation (Aldaheri et al., 2023; Al-Mawali & Al-Busaidi, 2022; Oliveira et al., 2015; Park & Hong, 2022).

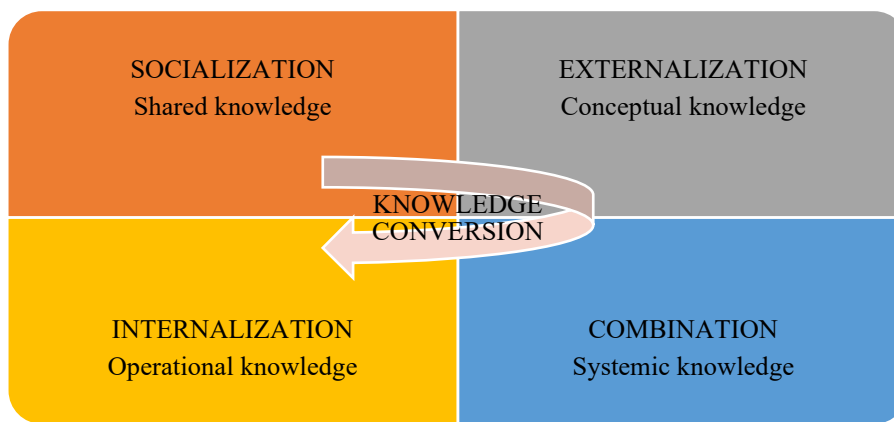
Knowledge can be shared explicitly or tacitly. Explicit knowledge is formal knowledge that is easily shared and communicated in the form of raw data, such as procedure manuals, computer memories, scientific formulas, universal principles, reports, and research findings. It concerns standardized knowledge that can be transmitted practically between people. Tacit knowledge, on the other hand, is highly personal, more challenging to share, formalize, and communicate, and more complex to share with others, as it refers to an individual's discernment, hunches, instincts, understanding, and personal conclusions, as well as emotions, values, or ideals (Angeloni, 2005; Nonaka & Takeuchi, 1997).

In this sense, tacit knowledge is visible, teachable, independent, distinguishable, and also easily replicable by competitors. The more intangible knowledge, that is, tacit knowledge,

is less teachable, observable, and more complex to separate from the person who created it within the context in which it was found (Senge, 1990).

These modes of knowledge conversion represent the stages through which individuals pass, functioning as mechanisms for articulating and transferring individual knowledge within the organization. It is a social process that expands in both quality and quantity. Thus, tacit and explicit knowledge complement each other, and their interaction is the primary dynamic for creating knowledge within an organization (Santos et al., 2001).

Figure 1 - *Knowledge conversion modes*



Source: the Author (2024).

For an entity to be able to generate knowledge, it needs to complete a “knowledge spiral,” moving from tacit to tacit, from explicit to explicit, from implicit to explicit, and finally from explicit to tacit (Santos et al., 2001).

In the socialization mode, experiences are shared tacitly through direct experience, observation, imitation, or practice among individuals. The first mode within the organizational landscape involves individuals taking walks, both inside and outside the organization, accumulating their tacit knowledge, and transferring it to another individual, also tacitly, thereby generating shared knowledge. Subsequently, in the externalization mode, tacit knowledge is converted into explicit knowledge and communicated to a specific group. In this case, it can be described as a stage of translating tacit knowledge through dialogue and reflection within the group, generating conceptual knowledge (Nonaka & Takeuchi, 1997).

In the combination mode, explicit knowledge and information are systematized and applied; that is, knowledge is standardized, transforming it into a company product, such as a manual or work guide, for example, formed through the collection and integration of this

knowledge, as well as its dissemination within the organization, generating systemic knowledge (Santos et al., 2001).

Finally, in the internalization mode, explicit knowledge is incorporated into tacit knowledge; that is, new people begin to internalize or share new knowledge in the company, simulate and conduct experiments, using this to increase, extend, and reframe their tacit knowledge through direct experience, generating operational knowledge (Nonaka & Takeuchi, 1997).

Thus, knowledge is created through the flow of information, that is, the flow of messages, which in turn is rooted both in the beliefs and culture of the individual who shares it and in those who receive that knowledge. In this context, knowledge is an element within the organizational environment that is entirely linked to the people involved in the process (Melo et al., 2021).

For knowledge to be shared, the involvement of at least two parties is necessary, both within and between organizations. The first involves the exchange of knowledge between people who work in the same company, i.e., knowledge is disseminated only within the company. The second occurs between two or more companies, through interaction between them, as they seek ways to innovate and improve internally through new knowledge (Scarabelli et al., 2022).

Learning and knowledge exchange in a team context is viewed as a process of aligning and developing team capabilities, aiming to create results desired by its members. This is achieved by building a shared vision through dialogue, enabling collective action in pursuit of these results (Senge, 1990).

Knowledge creation is developed through research and development (R&D) and training and is also influenced by the organization's history. Generally, for a company to conduct research and formal training, a significant investment is required, which often exceeds the organization's available resources. Therefore, learning through experience is a central element in the creation and sharing of knowledge, facilitated by informal exchanges between employees, guided by ethics and emotional intelligence (Andrade et al., 2023).

For knowledge to become valuable to the company, there needs to be ongoing discussion and sharing among its members. This knowledge can be transmitted explicitly through data, manuals, and reports, among others, or tacitly, being inherent to the individual and formed by guesses, instincts, personal conclusions, and values, among other aspects (Castaneda & Cuellar, 2021).

2.1.1 Knowledge sharing in organizations

Knowledge sharing within the organizational environment is considered inherent to the individual, as it is an attitude towards the transmission of knowledge in the business environment. Technical knowledge, ideas, experiences, expectations, and other forms of expression are related to the act of sharing since it depends on willingness, stimuli, and an appropriate space for employees to feel comfortable and secure in transmitting knowledge (Scarabelli et al., 2022).

Sharing knowledge is not just about the transfer process but also about how it will be understood between the sender and the recipient. Therefore, efficiency in sharing provides individuals, teams, and organizations with the opportunity to improve their performance, competitiveness, and development in creating new ideas and projects, given that this shared knowledge becomes a public product that all members involved can obtain and use (Cai & Ma, 2022; Xu et al., 2023).

The efficiency, effectiveness, and success of an organization depend on the quality and quantity of knowledge, as well as how it is made available to everyone, in other words, the quality of the relationship between the parties. With these elements defined and ordered, knowledge becomes a unique value for the development of products, services, and projects that are significantly different and innovative compared to their competitors, as well as for the effective use of available resources to improve their performance (Yeboah, 2023).

On the other hand, because it is a social interaction, knowledge can be hidden by individuals—a phenomenon known as knowledge concealment. This occurs when employees resist sharing their knowledge with other team members, resulting in adverse effects on creativity, trust, interpersonal influence, and innovative performance. For this reason, there must be both a willingness to share accumulated knowledge and experience and an openness to receive it (Cai & Ma, 2022).

For this reason, knowledge sharing is considered a critical element in knowledge management. Information that is conveyed incorrectly or incompletely can hinder the effectiveness of knowledge management, compromising both the individual's and the organization's learning processes and, in turn, impacting their performance, job satisfaction, and innovative capacity (Fischer, 2022).

Another point related to personal knowledge concerns self-efficacy. Self-efficacy refers to an individual's belief in their ability to possess specific knowledge and convey it accurately

to others. It is linked to the willingness to share and the confidence of knowing that one is sharing knowledge assertively (Mustika et al., 2022; Sarafan et al., 2022).

Individuals with a high level of self-efficacy are more likely to accept orders as they believe they possess the necessary knowledge and ability to perform the assigned task. In addition, self-efficacy influences the total utilization of knowledge; companies that share their knowledge tend to contribute more to their innovation, as the knowledge is fully utilized and transferred (McLeod et al., 2024; Mustika et al., 2022).

Motivation is a key element in the donation and receipt of knowledge, whether personal or company information and procedures, as well as in participation in activities. A motivated employee who expects a future return or reward and is confident about their organization's goals tends to exhibit reciprocity and greater motivation to share their knowledge with others (Van Houten, 2023; Xu et al., 2023).

In addition to motivation, the quality of interaction between individuals also directly influences knowledge sharing; in other words, interaction between individuals is fundamental for knowledge sharing to occur. How both individuals exchange information is entirely linked to their culture, personal values and beliefs, norms, and behavior towards other individuals, generating positive results when two different cultures share their knowledge in the formation of skills, development opportunities, and interventions in the face of unknown situations (Aldaheri et al., 2023; Kodai & Alzobeer, 2023).

In this vein, with regard to the individual, it is necessary for the organization to find ways to value and encourage collaboration and learning. Extrinsic motivators can be stimulated through unexpected rewards and/or benefits, and intrinsic motivators can be stimulated through motivation, self-efficacy, culture, and that person's intention to help others (Fischer, 2022; Zhou et al., 2023).

This interaction between individuals, whether intra- or interorganizational, allows for the exchange and improvement of knowledge necessary within the work environment, such as their views, experiences, methods, perceptions, and ideas. Furthermore, it facilitates the creation of products, services, and processes, strengthening relationships within and outside the company and can be understood as the driving force of the organization (Chua et al., 2023; Scarabelli et al., 2022).

Intra- and interorganizational sharing is divided into four units. First is the individual unit, which deals with the act of bringing a new experience or understanding to the recipient, that is, the person receiving the knowledge. At the team level, sharing occurs through interaction between the members of a given project and their leader. At the organizational level,

employees share ideas, information, and suggestions organizationally. Finally, at the interorganizational level, sharing occurs with partners, suppliers, customers, or in contractual relationships (Iftikhar & Lions, 2022).

Based on knowledge management theory, this sharing between different units is the fifth basic procedure. First, knowledge is diagnosed; second, knowledge objectives are determined; third, knowledge is generated; fourth, knowledge is economized; fifth, knowledge is shared; and sixth, knowledge is applied. Among these procedures, knowledge sharing serves as the strategic mediator of the operation, considered the most important stage and connecting the previous processes to the effective application of this knowledge in the business environment (Abdullah & Alqarni, 2022).

Studies addressing knowledge management theory and business performance in this context emphasize that knowledge plays a crucial role in organizational success, impacting the division of the four units, both intra- and interorganizational, and is a key component in business competitiveness and adaptation (Alharbi & Aloud, 2024).

Within the organizational scenario, knowledge is one of the most valuable resources, and to be capitalized on in the organizational environment, it must be shared. This sharing involves both explicit and implicit exchanges, aiming to develop new knowledge, and involves individuals with common goals who, in an articulated and practical manner, develop joint actions (Aldaheri et al., 2023; Iftikhar & Lions, 2022; Oliveira et al., 2015).

In today's information-based economy, knowledge is a vital and effective resource for enhancing a company's competitive advantage, delivering high-quality products and services to its customers, accelerating its innovation process, and expanding its financial resources. Furthermore, it plays a prominent role in creating and maintaining the relationships that form the foundation of a company, achieving a sustainable competitive advantage (Alharbi & Aloud, 2024; Mustika et al., 2022; Park & Hong, 2022; Van Houten, 2023).

In this sense, knowledge in a company is not limited to what it already has but involves, above all, the ability of its employees to continuously learn and manage this knowledge more effectively than their competitors, thus constituting a true competitive advantage (Alharbi & Aloud, 2024).

However, from a market perspective, analyzing this exchange between various organizations, whether in the same industry or with complementary focuses, the creation and sharing of knowledge has a positive growth and impacts cost reduction, reduction in development time, and completion of processes, products, and services, improves teamwork

performance and the capacity for innovation at low cost and in a short period (Andrade et al., 2023; Park & Hong, 2022).

Shared knowledge is generally understood in a unidirectional manner, when an individual teaches certain content or company procedures to another coworker, or when an employee records their knowledge in manuals and management controls. However, knowledge can also be shared bidirectionally and multi-directionally when more than one person collaborates to solve or understand a particular situation within the organizational environment, whether through team meetings or consulting processes (Fischer, 2022).

Improved collaboration and the development of innovations in projects and actions are elements that generate positive results from knowledge sharing through an organized set of relationships between individuals and companies. Thus, as organizations collaborate through a shared network to develop a particular project, they establish routines and processes throughout the organization, which can serve as the starting point for new research, actions, and development. Therefore, knowledge sharing affects the innovation capacity of companies (Li et al., 2023; Yeboah, 2023).

2.1.2 Knowledge sharing networks

Business networks are formed by companies, organizations, or autonomous entities that may be geographically close or dispersed and diverse in their operations, cultures, and objectives. Nevertheless, they collaborate with each other to achieve goals that are common or similar among their members (Nascimento et al., 2022).

Interorganizational networks are formed by the union of several companies that have common goals, whether in structure, culture, or values. These networks are important regardless of the size or segment of the company.

However, studies show that the success of a small business can be leveraged if it is part of a knowledge-based sharing network, which can bring benefits in terms of information flow, knowledge acquisition, and the pooling of necessary resources (Hall et al., 2022). Companies with quality relationships reflect positively on their strategic relationships.

The relationships that companies have directly affect the behavior of their employees, who in turn influence the company's performance. Thus, quality relationships between a company and its partners, considering behavioral factors such as trust and cooperation, as well

as environmental factors, can lead to improvements in organizational efficiency (Yue et al., 2022).

Business networks or groups are composed of independent companies that establish links with each other in order to share knowledge and resources and promote joint learning. These networks usually have a central organization responsible for coordinating and managing actions under the collective control of the network. Thus, companies are independent in their legal nature but interdependent through business ties, such as joint ventures, loans, board memberships, and social ties, providing tangible and intangible advantages, such as resources, technology, and shared development and knowledge (Özlem, 2022).

Sharing the knowledge that each individual possesses with other organizations through a sharing network is fundamental to the delivery and successful execution of projects, actions, and processes. Business partners such as research-focused institutions, business consultancies, media agencies, the public sector, and other stakeholders are organizations that can bring competitive advantage within a network through collaboration and sharing among its members (Penttinen & Frösén, 2022; Sarafan et al., 2022).

Factors such as mutual trust among network members, commitment to good partner performance, understanding of each member's individual needs, and a positive attitude toward the demands and actions of the business network are fundamental for it to thrive, generate positive results, and maintain lasting relationships (Yue et al., 2022).

Technology and knowledge within these operations between companies that make up the network enhance these elements internally, contributing to the efficiency of business operations, with a direct relationship between knowledge sharing and the ability to innovate, as well as providing a good reputation if the network in question has a beneficial relationship with visible gains (Özlem, 2022).

Another sustainable business sector is social networks formed by companies, groups, and people with similar social interests and views. These networks, which are often self-organized and can become formalized over time, aim to share information and tacit knowledge through socialization among individuals. In addition, they seek to support each other and acquire knowledge together, promoting the development of innovations in their contexts (McLeod et al., 2024).

The success of a network is directly related to the performance of its members. For this success to occur, it is essential that sharing between them allows for the exchange of complementary resources, strengthening business capabilities and competencies in the pursuit of innovation (Frempong et al., 2021).

In this context, when faced with strategic decisions such as whether to buy or collaborate on sustainability-related matters, partnerships between organizations have proven to be effective. Collaboration contributes to improving environmental, social, and economic aspects, reducing negative impacts, developing intra- and inter-organizational routines and learning, and promoting positive advances in their respective fields (Dzhengiz et al., 2023).

The establishment of networks of organizations enables social interaction and knowledge exchange among their members, encouraging institutional maintenance and fostering closer relationships between work and partners. In addition, it provides visibility for the actions carried out by the entities (Scarabelli et al., 2022).

Thus, cooperation between organizations can be observed through strategies to strengthen and act in different socioeconomic sectors. This cooperation may vary according to the segment in which they operate, the type of relationship between members (formal or informal, continuous or sporadic, strong or weak), and the field of activity or purpose. Among its guiding principles are cooperation, interaction, relationships, the need for adaptation, the complementarity of members, and mutual assistance (Scarabelli et al., 2022).

Another element linked to communication and collaboration within the network in terms of sharing refers to its status, that is, its position within the institution's hierarchy. Leaders and individuals at the top of the hierarchy tend to share and exchange information more easily, which also increases their motivation to share (Sarafan et al., 2022; Van Houten, 2023).

Leadership positions directly influence this exchange. A manager needs to understand the project being developed in order to formulate, interpret, and communicate their knowledge about the action being taken to their subordinates. Leadership skills such as emotional intelligence, the ability to share information, promote organizational culture, and encourage team enthusiasm must be well developed by managers (Li et al., 2023).

Given the importance of the leader's role, it can be concluded that knowledge sharing by network members is positively correlated with the duties, incentives, and beliefs of their leader (Xu et al., 2023). Furthermore, when it comes to the organization, its culture and values directly impact the way employees share and transmit knowledge to other members of the company and the network in which they operate. Thus, organizational culture has a direct influence on the knowledge-sharing process (Aldaheri et al., 2023; Kodai & Alzobeer, 2023; Melo et al., 2021).

This process of mutual exchange of tacit and explicit knowledge creates new knowledge together as individuals share experiences, information, and perceptions of practices related to the topic being addressed. This collaborative learning enables the development of new skills

within the organizational environment, including teamwork, leadership, cultural management, human resource practices, and sustainable innovations (Castaneda & Cuellar, 2021).

Furthermore, both the process of disseminating knowledge and the creation of new knowledge have positive results in the socialization and development of the organization, as this production and sharing of knowledge facilitates the learning process and improves strategic capacity and the development of innovations, enabling the company to achieve better results (Melo et al., 2021).

Another benefit of the network concerns the optimization of resources. When an organization shares knowledge, it is sharing a resource that it already has mastery of, minimizing the resources employed and favoring concentration on elements that require greater resources or attention (Melo et al., 2021).

All this knowledge sharing, based on the transfer of experiences and organizational knowledge, needs to be carried out through an environment or channels of communication between individuals, groups, and organizations. Conferences, knowledge networks, organizational learning, technological means, networking, social media, and face-to-face meetings are fundamental channels for this sharing (Andrade et al., 2023; Yeboah, 2023; Zhou et al., 2023).

How sharing occurs, and the communication channels used in a given environment influence this process. Whether in physical, virtual, or even mental environments, the individual needs to be conducive to creativity, development, growth, interaction, and transformation occurring positively, increasing the probability of success of its members (Schraiber et al., 2021).

Along these lines, within technological means, we find Information and Communication Technologies (ICT), which grew after the 1990s. This technology is based on the storage of explicit knowledge, aiming to assist in the efficiency and sharing of knowledge within and outside the organization. ICT involves various means of sharing this knowledge, which can be through collaborative online applications or social media tools used daily, such as YouTube, LinkedIn, Facebook, Twitter, and WhatsApp, expanding the participation of employees in sharing their knowledge beyond the hierarchical boundaries of the company or geographical barriers (Al-Mawali & Al-Busaidi, 2022).

In this scenario, products can be understood as ideas, raw materials as data, and the tool used is the human mind, with the success of an organization based on transforming knowledge into capital so that it is an intellectual asset rather than being considered only as a physical asset.

This transformation renders knowledge valuable and widely applicable in effective decision-making amid market uncertainties (Al-Mawali & Al-Busaidi, 2022; Abdullah & Alqarni, 2022).

Thus, based on the studies researched, factors that favor sharing on the network were identified and are presented in Chart 1.

Chart 1 - Sharing network factors

Sharing network factors	Authors researched
Participation	Srivastava, Bartol & Locke (2006) Jorge, Valentim & Sutton (2023) Machado & Kuhl (2023)
Common goals	Choo & Alvarenga Neto (2010) Machado & Kuhl (2023) Mannes & Beuren (2021) Hall, Ellis & McArthur (2022)
Trust	Choo & Alvarenga Neto (2010) Mannes & Beuren (2021) Hall, Ellis & McArthur (2022)
Communication channels	Darroch (2005) Schraiber, de Melo & Franzoni (2021) Busnello & Vieira (2021) Scarabelli, Sartori & da Cruz Uripa (2022)
Hierarchy and leadership	Senge (1990) Sarafan, Lawson, Roehrich & Squire (2022) Van Houten (2023) Li, Martins, Vasconcelos & Peng (2023)

Source: the Author (2024).

Network organizations should develop both internal and external strategies to enhance connectivity and information exchange, thereby facilitating increased knowledge sharing. The creation of bonds between members, the joint participation of collaborators in the network, and good relations within the network environment are positive aspects related to participation (Jorge et al., 2023).

For participation to occur, members must be committed to the practices, actions, and projects being developed, as well as to the principles and objectives of the network. In this way, a participatory network has a high level of collaboration and a sense of belonging, ensuring that the development of positive solutions in the environment in which they operate includes the vast majority of their members (Machado & Kuhl, 2023).

A network member who is constantly sharing and acquiring knowledge with other members, that is, who participates constantly in the network, helps to create common knowledge that is maintained among the team, allowing for better coordination among team members. In the long term, this participation causes members to recognize and develop learning

patterns, processing knowledge quickly, which is called collective intuition, when compared to individual information (Srivastava et al., 2006).

Sharing networks, based on common goals, are strategic means of collaboration between entities. Through them, it is possible to develop new products, services, or processes efficiently, generating positive results, reducing dependencies, and outlining favorable strategies for obtaining resources (Hall et al., 2022; Mannes & Beuren, 2021). In this sense, network collaboration offers a positive degree of structure and guidance for the activities developed by organizations. As a result, common goals come to represent a strategic direction in light of the needs of the members involved (Choo & Alvarenga, 2010).

Thus, it is understood that the common goals of various organizations are one of the main characteristics of the formation of a collaboration and sharing network. The goals must be of interest to all parties involved so that the combination of forces in carrying out a project or action can be realized and bring positive results to the network (Machado & Kuhl, 2023).

Trust plays a fundamental role within the network, as knowledge sharing only happens when those involved feel safe to share what they know and apply what they have learned. In addition, the generation of innovations aligned with the objectives and goals of the members, as well as the positive visibility of these actions, contributes significantly to strengthening trust among participants (Mannes & Beuren, 2021).

In this way, trust helps members to be open to new ideas, creating a safe and conducive environment for creation, which has a direct relationship with the social identity of members (Choo & Alvarenga, 2010). It also strengthens the reciprocal process of giving and receiving knowledge as each member's principles, values, and beliefs are related to the actions being developed (Hall et al., 2022).

Communication channels encompass all the means necessary for knowledge to be passed on among network members. This includes the environment in which communication will take place, whether physical or virtual (Scarabelli et al., 2022). The use of technology in knowledge sharing is a means of facilitating communication between members from different locations and helps speed up this communication in the face of market changes (Darroch, 2005).

In an organization, it is essential that communication channels are analyzed and mapped in order to avoid rework and failures. These channels must be correct and accessible to all members and can be physical, such as meetings, lectures, and technical visits; virtual, through information and communication technologies; or even mental, worked on internally by the employees themselves (Busnello & Vieira, 2021; Schraiber et al., 2021).

Finally, the hierarchy and leadership category have a direct influence on communication and collaboration among employees. It is up to leaders to pass on knowledge assertively, ensuring team understanding and encouraging the development of projects and actions through knowledge sharing, thus favoring the emergence of innovations (Li et al., 2023; Sarafan et al., 2022; Van Houten, 2023).

In this context, leadership in a learning-oriented organization takes on a new vision, with tasks that are more subtle and, at the same time, more elementary. The leader acts as a designer, administrator, and teacher, responsible for building an environment where employees continuously expand their understanding and learning capabilities, which characterizes shared leadership in learning organizations (Senge, 1990).

2.2 SUSTAINABILITY-ORIENTED INNOVATION

Innovation is considered a process of creative deconstruction, leaving behind old patterns and making room for new concepts. In the business environment, innovation is one of the main mechanisms for sustainability and economic development (Varadarajan, 2017).

Companies considered innovative are more productive, efficient, and contribute more positively to economic development compared to companies that are not innovative. Therefore, innovation is a crucial factor within an organization that has sustainability as one of its focuses, and for this to occur, intentional changes are necessary in the organization's values, products, services, and processes (Manzoor et al., 2023; Rocha et al., 2022).

The types of innovation within the business environment can be classified into four types: product or service innovation, process innovation, organizational innovation, and marketing innovation, and into two main types: product innovations and business process innovations (Organisation for Economic Co-operation and Development [OECD], 2018).

Product innovation refers to a new or improved good or service that differs from previous ones and has been introduced into the business environment and the market. Business process innovation, in turn, refers to the introduction of new or improved processes in one or more of a company's functions, which differ from previous ones and are actively used by the organization (OECD, 2018).

An innovative organization demonstrates the ability to improve its internal learning processes and competencies, generating benefits within its own structure. By passing on these innovations to other companies, it amplifies the positive impacts externally, characterizing

innovation as the ability to understand the scenario in which it operates, identify market opportunities, and create new knowledge that can be used internally and shared with its partners (Rocha et al., 2022).

In this sense, innovation emerges in the current scenario as a fundamental means for environmental adaptation and sustainable development, defined as the lifeblood of the business sector, bringing changes in products, processes, services, organizations, and their relationships to generate value within the sustainability tripod (Gil-Saura et al., 2024; Koval et al., 2022).

Globalization and the fast pace of contemporary life require everyone to cooperate on environmental issues and sustainable development. Terms such as “sustainable development” and “sustainability” have been discussed since the United Nations Conference in 1972 and consolidated by the Brundtland Report, which defines sustainable development as development that meets the needs of the present without compromising the ability of future generations to meet their own needs, and highlights business opportunities to create, adapt, and distribute environmentally friendly technologies through sustainability-oriented innovation (Salamzadeh et al., 2022).

The triple bottom line of sustainability brings the concept of sustainable development based on the balance of three basic pillars: economic, social, and environmental (Elkington, 1997). Economic sustainability deals with better management and allocation of public and private resources and investments, aiming at better economic efficiency, assessed holistically within society, and not only through microeconomic business profitability criteria (Sachs, 1993).

Social sustainability brings the concept of development based on a society-centered vision, seeking to build a civilization with greater equity in the distribution of income and assets, reducing the gap between individuals' living standards. In turn, environmental sustainability refers to causing as little damage to the Earth as possible, limiting the use of exhaustible natural resources, promoting their replacement with renewable resources, recycling, reducing pollution, advancing research into more efficient technologies, and defining standards for environmental protection (Sachs, 1993).

In order for companies to adopt innovations that are truly sustainable and based on the three basic pillars, an internal change is necessary so that sustainable criteria are correctly applied in this process. In this way, innovative practices oriented towards sustainability will be created, with the capacity to provide environmentally, socially, and economically sustainable benefits (Rubio-Andrés & Abril, 2023).

Traditional innovation and sustainability-oriented innovation, therefore, bring about technological changes in processes, products and services, operating procedures, practices, business models, and the mental structures of the agents involved. What distinguishes them is the proposal to integrate environmental, social, and economic aspects into the innovation process (Adams et al., 2016).

Sustainability-oriented innovation (SOI) refers to the emerging concept that addresses innovation with a focus on sustainable aspects. Like other types of innovation, it involves complexity and uncertainty in its development and implementation, with commitments linked to economic, social, and environmental aspects integrated into the company's activities, from its initial creation to the project's arrival at the customer (Chen et al., 2023).

An idea or knowledge oriented towards sustainability may be more likely to be rejected within a process due to its radical and disruptive characteristics in a scenario where organizations have resource constraints. For this reason, the selection of ideas must be thorough and well structured by the team responsible, so that relevant and promising projects stand out (Chen et al., 2023).

The initial phase of an SOI process begins with the generation of ideas. In this stage, unlike traditional innovation, the dimensions of sustainability are considered, encouraging the members involved to think patiently and creatively, highlighting the subsequent phases related to execution, so that the implementation process occurs following the procedures listed in the idea generation phase (Hallstedt et al., 2013).

Although the term sustainable innovation is more widespread in the literature, the term Sustainability-Oriented Innovation (SOI) more accurately reflects the nature of the innovation process, which is an innovation process geared toward improvements in sustainability. Thus, in this study, SSI is defined as the commercial introduction of a product or service, whether new or improved, as well as product-service system processes, comprising these activities and processes in pursuit of sustainability. Through qualitative or quantitative analyses, these bring environmental, social, and economic benefits throughout their life cycle, both in the short and long term (Cholez et al., 2023; Depetris-Chauvin et al., 2023; Fiandrino et al., 2023).

This concept is in line with the *triple bottom line* proposed by Elkington in 1997, emphasizing that companies need to adopt responsible means in their pursuit of success, leverage to enter new markets, green market reputation, and competitive advantage, as well as complying with regulatory requirements for each business sector, providing equivalence within the social, environmental, and economic dimensions in their decision-making processes. However, these dimensions must be addressed with caution and in the varied conditions and

contexts of each company, according to its specific characteristics (Fremont, 2007). environmental, and economic dimensions in their decision-making processes. However, these dimensions must be approached with caution and in the varied conditions and contexts of each company, according to its specific characteristics (Frempong et al., 2021; Yu et al., 2023).

Its application not only guides activities and processes to become sustainable and improve economic performance, but also generates positive changes and impacts within the social and environmental spheres, that is, it concerns achieving profit and financial sustainability while achieving social objectives. To this end, companies need to seek to expand their field of vision, bringing in partners and all stakeholders to form a network (Fiandrino et al., 2023; Harsanto et al., 2022).

In addition, technologies can also be seen as powerful allies in SOI. New sustainable technologies and sustainable entrepreneurship for the creation of innovations are approaches that should be adopted not only by startups with this innovative focus, but also by established companies, non-governmental organizations (NGOs), non-profit organizations, among others, given that sustainability and innovation must be present in all sectors of the economy (Gaudig et al., 2021).

As in other types of innovation, SOI manifests itself at various levels within organizations. Its focus is on the development of technologies and inventions applied to products, services, processes, and systemic structures, aiming at operational optimization, the strengthening of internal systems, and organizational transformation, encompassing organizational, institutional, and social innovations (Tura & Ojanen, 2022).

In this vein, among the various classifications, SOI is mainly involved in three groups. These groups are: direct changes in the organization, in products or services, and in processes, with the aim of assessing the impacts of their actions in the social, economic, and environmental spheres (Depetris-Chauvin et al., 2023; Melo et al., 2023; Oliveira et al., 2020).

To implement actions, organizations need to expand their environment, seeking support from their stakeholders to create value for sustainable innovations, involving partners, entities, government, citizens, addressing operational optimization, organizational transformation, and system building, doing more with less, in a positive and innovative way (Fiandrino et al., 2023).

Mass changes in products, services, processes, and organizations are greatly needed in the face of current environmental and social demands. To this end, companies must be attentive to opportunities that may arise amid these changes so that they can develop transformative and radical innovations in the long term, achieving sustainable development (Gaudig et al., 2021).

Strategic partnerships with different actors have proven to be an effective method for developing sustainability-related actions, which are crucial for advancing sustainable development in companies. Such partnerships are especially positive given the complexity of these actions, as joint work facilitates the implementation of more practical and agile solutions, in addition to reaching companies of different sizes and segments (Dzhengiz et al., 2023).

The implementation of SOI in the organizational environment presents strategic positions, which are: operational optimization, organizational transformation, and system building. Each company may find itself in one of these positions, based on the activities and ideas developed (Brunetto & Christopoulos, 2019; Neutzling et al., 2018). The three strategic positions that companies can take regarding the development of SOI reflect an idea of the evolution of these positions (Adams et al., 2016).

The initial position can be defined as “operational optimization,” dealing with innovation activities that are focused on efficient ways to respond to environmental issues. These innovations are incremental, that is, they bring small changes or improvements within the company, alluding to the concept of doing the same things, but in a better way (Adams et al., 2016; Miranda et al., 2023).

Next comes organizational transformation. At this level, the entity is moving towards becoming more sustainable, since it is at the strategic level, seeking to create value through a fundamental change in the understanding of the importance of sustainable innovation within organizations, bringing the concept of doing something good through new products, services, or organizational models (Adams et al., 2016; Neutzling et al., 2018).

The last stage concerns the positioning of system building, which is the most complete stage and still under construction or theoretical. In this phase, the organization brings about changes in society, making new proposals with other actors, such as shareholders, employees, the community, suppliers, institutions, and others, creating, through innovation, a positive impact on the society in which it operates, covering the economic, social, and environmental dimensions. Innovations go beyond the company, generating institutional changes (Brunetto & Christopoulos, 2019).

Thus, first, organizations seek to increase “technical fixes” in their activities, focusing on exploiting their internal capabilities and knowledge, aiming to reduce impacts to achieve strategic objectives linked to sustainability. Second, there is a change in the organization's mindset regarding sustainability, rooting it in the corporate culture and involving internal and external agents to generate SOI. Finally, in the system construction stage, entities work to develop sustainable innovations collectively, which is a paradigm shift (Neutzling et al., 2018).

In order for companies to move toward sustainable innovation, it is essential to develop sustainable practices applied to products and/or services, processes, and organizational structures. These practices enable progression through the levels of strategic positioning of SOI (Harsanto et al., 2024).

2.2.1 Sustainability-Oriented Innovation Practices

The introduction of SOI practices should promote organizational changes in processes and/or products and services based on clear objectives that have social and environmental value while generating financial returns for the organization. For these innovations to occur, the business model must undergo changes, with new behaviors and relationships among the members involved (Neutzling et al., 2018).

Process innovation practices focus on the technical levels of the organization and require the redesign of its operational mechanisms. The goal is to achieve greater efficiency in the use of resources, reduce energy consumption, and build an organizational culture based on eco-efficiency (Koval et al., 2022; Urbancová & Vrabcová, 2023).

Process innovation is a strategic means used by organizations to improve their competitive position in the market. It refers to the way in which an existing or new product or service is produced and is considered an internal renewal of organizational processes (Harsanto et al., 2022).

Innovative processes can be related to a product or service, the company's day-to-day activities, and also the systems used, encompassing the entire organization in the pursuit of sustainability. Improving internal learning processes, developing strategies to achieve new market opportunities, and introducing technologies that optimize production and administrative processes are possible ways to achieve process innovation. These actions contribute to making the organization more efficient, adaptable, and competitive in its segment (Cholez et al., 2023; Depetris-Chauvin et al., 2023; Fiandrino et al., 2023; Rocha et al., 2022).

In addition to process innovation, product and service innovation also plays a key role in promoting sustainable development. This involves introducing improvements to existing products and services, as well as creating new solutions that contribute to this goal (Koval et al., 2022). Product innovations refer to significant improvements in their components or materials, technical specifications, and other functional characteristics, such that the innovation employed makes them new or improved, with a focus on sustainability (Gaudig et al., 2021).

In this type of innovation, the company can work with the development of ecological design, such as the use of organic or recycled materials, involving the development of products that have high durability, low energy consumption within their process, and a low final product cost. Furthermore, it is necessary to develop environmental or sustainable technologies aimed at developing new products (Mukaromah et al., 2023).

On the other hand, service innovations involve the creation of a new service or the significant improvement of an existing one, providing organizational benefits and adding value to the customer. This value is related to the provision of an innovative service in a broader context, which differs significantly and originally from previous versions, generating long-term advantages for both the company and the customer (Gaudig et al., 2021).

Within social enterprises, the development of product and service innovations is geared toward creating affordable solutions that are priced low and aimed at meeting the needs of society as a whole. These innovations are based on social objectives, prioritizing more sustainable design and promoting concrete benefits for social and environmental life (Harsanto et al., 2022).

Furthermore, organizational innovation encompasses both internal and external aspects of the company, enabling openness to new ideas and being directly linked to organizational culture. This, in turn, is based on behavioral variables of individuals and the company's desire for transformation, involving elements such as business vision, strategic partnerships, stakeholder management, research and development (R&D) activities, learning processes, business model redesign, and promotion of employee well-being and development (Harsanto et al., 2022; Yu et al., 2023).

Its main essence is based on incremental and agile changes within the organizational structure, configuring itself as a process that demands continuous and dynamic interaction of individuals in the transformation and implementation of new ideas. For this to occur, it is necessary that the generation of ideas involves stages such as the digitization, interpretation, and conceptualization of these ideas; constant monitoring of the internal and external environments, with attention to the actors involved, enabling the identification of problems and the proposal of solutions on an ongoing basis; the analysis of organizational philosophy and values; the capture of value through the efficient orchestration of organizational resources and capabilities; and, finally, that there is a continuous renewal of innovations, ensuring the maintenance of competitiveness (Yu et al., 2023).

Thus, SOI practices encompass intentional changes in an organization's philosophy and values, its products and services, and its processes, serving the specific purpose of generating

economic, social, and environmental value (Kneipp et al., 2022). The practices addressed within each of the above levels are shown below in Chart 2.

Chart 2 - *Sustainability-oriented innovation practices*

Level of innovation	Definition	Practices
PROCESSES	Innovative practices within production processes or service-related processes, aimed at reducing their impact and improving sustainability.	Production processes that reduce environmental impacts.
		Proper disposal of unnecessary materials in production processes, reduction of wastewater discharges, and sewage control.
		Practices to reduce energy, water, and material/resource consumption and replace inefficient processes.
		Forms of transportation that contribute to reducing environmental impact.
PRODUCTS AND SERVICES	This involves creating, improving, or even eliminating a product or service that directly impacts the environment in which it operates.	Products or services that have a less environmentally aggressive design and reduce the use of raw materials.
		Labeling or services that explicitly state the adoption of sustainable actions, practices, and/or certifications.
		Ways of measuring resource consumption, environmental impacts, and waste release throughout the entire life cycle of a product or service, from raw material extraction to final disposal.
		Innovations that aim to reduce the amount of materials or replace them with sustainable ones.
		Use of reduced or reusable packaging.
		Fair trade practices that incorporate the use of organic products.
ORGANIZATIONAL	It addresses the reorganization of existing internal systems within the company, as well as new forms of management and operations, seeking to develop operating models that are aligned with sustainable development. Thus, this type of innovation involves services, delivery, and business models.	Certifications that guide its activities in favor of sustainability.
		Policies that promote environmental preservation.
		Environmental accounting instruments, i.e., records and controls that contribute to assessing the environmental impact of business activities.
		New processes that bring greater efficiency and contribute to sustainable practices.
		Use of local labor.
		Local facilities and acquisitions that reduce pollutant emissions from transportation.
		Multifunctional departments, teams, units, and/or committees responsible for sustainability.
		Involvement of various stakeholders, such as employees, suppliers, and the community, in sustainable actions.
		Involvement of employees in actions aimed at promoting sustainability.
		Concern for the health and safety of employees and stakeholders.
		Development and training for employees to perform activities related to sustainability.
		Standards that guide employee behavior toward sustainable practices within the organization.

Source: Prepared by the author based on Adams et al. (2016), Klewitz and Hansen (2014), and Kneipp et al. (2022).

SOI practices applied to processes, products, and/or services involve restructuring organizations' internal processes, encouraging the use of technologies that make production cleaner and more sustainable, promoting product eco-efficiency. In this context, it can be observed that innovation in processes and innovation in products and services go hand in hand, since, when implemented effectively and strategically, they contribute jointly to strengthening organizational sustainability (Mukaromah et al., 2023).

In turn, SOI practices in organizational innovation therefore focus on innovation management, i.e., developing means for the company to effectively and efficiently manage its innovations, as well as working with and using them inside and outside the organization, working across its boundaries, challenging companies to change their technologies to incorporate management systems that are focused on sustainability, known as environmental management systems (Mukaromah et al., 2023; Tura, & Ojanen, 2022).

It therefore seeks to integrate sustainability concepts into organizational culture, practices, and strategies within and outside the organization, focusing on value proposition, creation, and delivery and capture of value, seeking to reform business models, prioritizing sustainability, and focusing on the core of the problem. Within the organization, it seeks to change the nature of the final product or service sold, encompassing the social and environmental spheres, to achieve the economic sphere (Friedman & Ormiston, 2022).

As a result, values and practices are consolidated within the organization, aiming to achieve the goals developed in the economic, social, and environmental spheres, continuously improving through the development of a vision, mission, policy, goals, and objectives based on sustainability (Koval et al., 2022; Rotondo et al., 2023).

2.3 TRADE ASSOCIATIONS

Trade associations (TA) are non-profit, non-partisan, democratic, and reputable associations, with no political party affiliations, according to their bylaws. Their main function is to represent and defend the interests of their members and the business class they represent, with the aim of increasing the competitiveness of their members. Their involvement with public authorities revolves around advocating for the interests of the business community and seeking socioeconomic development (Bonassi & Lisboa, 2003).

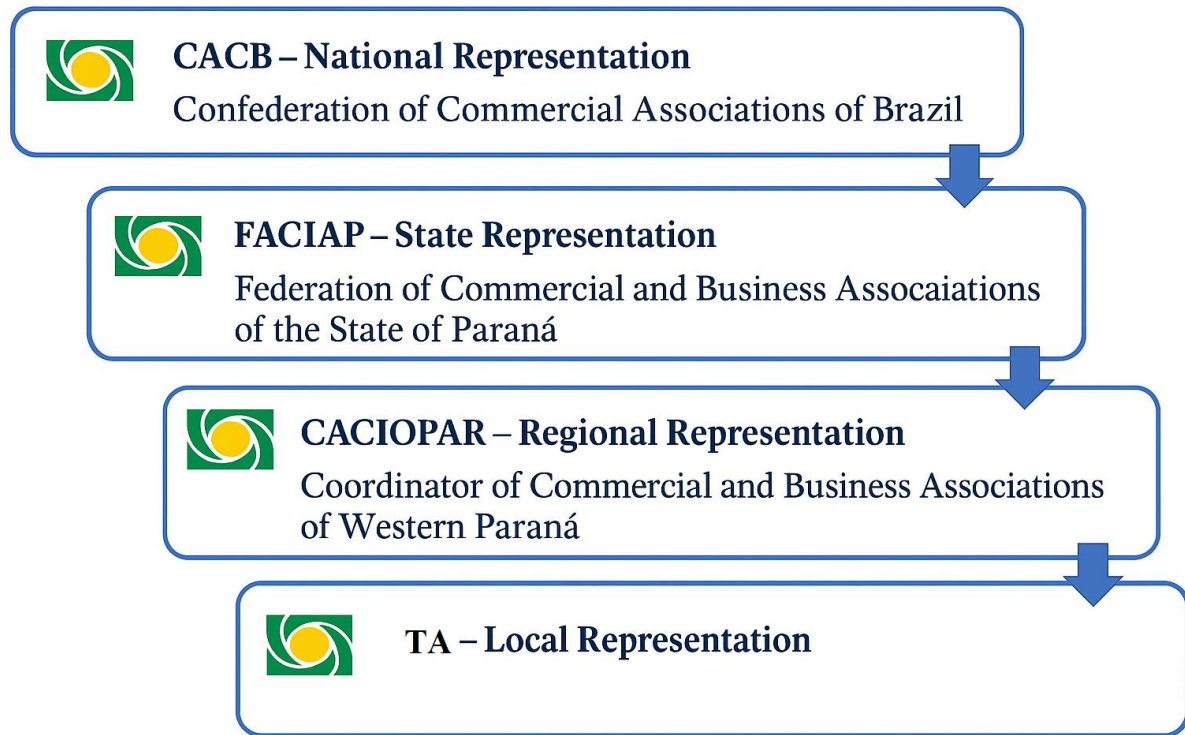
To achieve this goal, TAs operate in three strategic areas. The first focuses on promoting a culture of association by mobilizing and organizing member entrepreneurs. The second is the provision of services, contributing to the development of members and the sustainability of the entity. The third concerns the promotion of sustainable local development to create a favorable environment for its members (FACIAP, 2024).

TAs are entities of the associative system, which is one of the principles for the growth of a society. Governed by principles of freedom, democracy, and solidarity, with equality among its members and free membership or withdrawal, they symbolize the efforts of members in pursuit of the group's interests. Through an association system, its members gain greater social expression and seek improvements, cooperating with local development through actions developed within their community (Campos Junges & Campos, 2022).

Associativism essentially focuses on promoting economic activities in the regions where it operates, defending business interests and actively cooperating with public agencies and private entities, whether small or large. In addition, it fosters interaction between different sectors of the economy, taking on an intervening role in regional development (Bonassi & Lisboa, 2003).

The associative system has a hierarchy consisting of the confederation at the national level, the federation at the state level, the coordination at the regional level, and the association at the municipal level (Campos Junges & Campos, 2022; FACIAP, 2024). The following organizational chart, which can be seen in Figure 2, shows the hierarchy of the associative system in western Paraná, the field of study of this dissertation.

Figure 2 - Organizational Chart of Associations in Western Paraná



Source: the Author (2024).

The Confederation is made up of 27 federations representing the states, totaling 2,300 (two thousand three hundred) trade associations and more than two million members (Confederation of Trade Associations of Brazil [CACB], 2021). In Paraná, there are 295 TAs, comprising more than 60,000 member companies, divided into 12 regional coordination offices. In western Paraná, where CACIOPAR is located, there are 46 TAs, representing more than 14,000 member companies (CACIOPAR, 2020).

This organizational overview shows that such a hierarchical process is only viable through the consolidation of a solid system of associations, recognized by society, public and private institutions, and the community as an agent of sustainable development. This reinforces the need for investment in representative, democratic, and dynamic entities that act to defend and strengthen the business class (FACIAP, 2024).

2.3.1 Trade Associations and the development of sustainable innovations

Trade associations play a strategic role in promoting sustainable innovation, acting as bridges between the business sector and contemporary social, environmental, and economic

demands. Through their hierarchical structure, which ranges from confederations to local associations, these entities promote products, projects, and programs aimed at the development of their member companies, in addition to coordinating joint actions with other institutions present in their regional ecosystem (Campos Junges & Campos, 2022; FACIAP, 2024).

Associations are voluntary in nature, meaning that their members are part of the organization without receiving payment for their time or services, providing micro and macro social effects and maintaining a close relationship with the State. On a micro level, they develop specific skills in the social network in which they operate, assisting in the objectives of their individuals, and on a macro level, through social intermediation, assisting individuals and the State, reaching groups of different social distinctions, and achieving innovations in the social and environmental spheres (Ferreira, 2008).

The importance of trade associations, at both the macro and micro levels, is evidenced by their coordinated action with the State and their engagement in essential areas such as civil solidarity, health, and education. These entities contribute effectively by promoting and supporting initiatives related to workers' rights, peace, human rights, heritage and environmental preservation, as well as the defense of minority groups and the mitigation of social problems. Their work is anchored in values such as solidarity, fraternity, autonomy, democracy, citizenship, and the strengthening of volunteer work. In this context, it should be noted that the pillars of sustainability—social, environmental, and economic—are intrinsically present in the actions and strategies promoted by TAs (Viegas, 2004).

Innovative practices for sustainable development have been popularized in private companies, but above all in third sector organizations, which include the associative system. These organizations aim to promote social, educational, and political assistance, defending the interests of classes and philanthropic institutions (Fernandes & Cabral, 2017). Their contributions to the advancement of sustainable innovations are manifested through economic, social, cultural, and environmental initiatives, which include the implementation of education and training projects and the mobilization of their agents for the conscious use of available resources in their environment, promoting both individual and community development (Monteiro, 2004).

Furthermore, one of their greatest contributions is associated with their role as mediators between citizens and community problems and interests, aiming to improve the life of the community in which they operate by seeking solutions together with the public sector (Viegas, 2004) and seeking to minimize social exclusion through the creation of community ties and integration (Monteiro, 2004). From this perspective, when the focus is on SOI in trade

associations, they concentrate more strongly on sustainable social innovations, with socioeconomic initiatives that promote greater well-being for individuals in the face of existing social problems in the community (Oliveira Brasil et al., 2015; Rodrigues, 2007).

Adherence to practices related to sustainability requires a comprehensive vision in the corporate environment, addressing not only results focused on economic sustainability, but also the implementation of community-related actions involving social and environmental sustainability, which are very present in third sector entities (Hillman et al., 2018), such as trade associations, entities that need further exploration with regard to sustainable innovations (Varadarajan, 2017).

2.4 SIMILAR EXPERIENCES IN BRAZIL AND AROUND THE WORLD

The bibliographic basis of this study focused on Brazilian journals and the Web of Science and Scopus platforms. As a selection criterion for Brazilian journals, only journals with a Qualis rating above B2 were researched, namely: *Revista Organização e Sustentabilidade* (Organization and Sustainability Journal); *Reunir Revista de Administração, Contabilidade e Sustentabilidade* (Reunir Journal of Administration, Accounting, and Sustainability); *Revista Ciência e Sustentabilidade* (Science and Sustainability Journal); *Revista em Gestão, Inovação e Sustentabilidade* (Journal of Management, Innovation, and Sustainability); *Sustentabilidade em Debate* (Sustainability in Debate); *RAI: Revista de Administração e Inovação* (RAI: Journal of Administration and Innovation); *Revista Brasileira de Inovação* (Brazilian Journal of Innovation); and *Revista de Administração, sociedade e inovação* (Journal of Administration, Society, and Innovation).

After selecting studies from 2019 onwards, those related to two or more of the themes of sustainability, SOI, innovation, and/or knowledge sharing and business networks were identified. Some of the variables linked to each of the themes mentioned were identified and considered in this study. The main studies researched and selected are summarized in Chart 3 below.

Chart 3 - Research conducted on the topics covered in this study

Author(s) and year	Goal	Results
Goi, Hakeem, & Frendy, 2022	Investigate the ways in which “bridge scholars” enable partnership between stakeholders at global and regional levels in addressing sustainability challenges.	Academics facilitate the dissemination of knowledge among stakeholder groups. Interactions promoted effective communication, enabled knowledge extension, assisted in

		sustainable projects, and created shared values.
Wilke & Pyka, 2024	Verify whether the relationships between actors in a network at the macroinstitutional and microinstitutional levels yield results in sustainability-oriented innovations.	SOI innovation networks often have low levels of cognitive and micro-institutional systemic proximity. However, the study did not allow us to conclude whether this is sufficient for innovation networks to produce the expected results.
Nova, 2023	Identify factors associated with organizational innovation and learning capacity that can facilitate the development of responsible innovation in the business context.	Organizational learning and innovation capacity development can facilitate the implementation of responsible innovation in the innovation process of companies, contributing to the transition to a responsible and sustainable development model. This implementation can ensure greater competitive capacity, differentiating the products and services offered by companies in the market, in addition to aligning with the new demands of stakeholders, mainly employees and consumers who are attentive to new technological and socio-environmental realities.
Melo, Castro, Silva, & Gohr, 2023	Development of Dynamic Capabilities (DCs) aimed at sustainability-oriented innovations.	Readiness factors “interorganizational relationships and technologies for SOI” associated with collaboration capacity and technological capacity are the most influential in operational optimization, organizational transformation, and system building activities.
Lima, Costa, & Pereira, 2020	Analysis of the degree of innovation in small businesses and the development of actions related to sustainability.	The results indicate that there is a positive correlation between the development of innovation activities and the adoption of sustainable actions by the small companies surveyed, with the dimensions of solutions, supply, brand, and processes, from the Innovation Radar, being the most influential on the sustainable attitude of companies.
Nascimento, Machado, & Santos, 2022	Investigate the state of the art of international scientific production on the interrelationship between social innovation and collaborative networks.	The central themes and fields of research are related to social enterprise, in the form of cooperative networks, network innovation, and innovation results; stakeholders, with citizen participation, collaboration practices, and innovation systems.
Vieira, Barbosa, & Parente, 2019	Seek to analyze the importance of interorganizational networks for the development of social innovations.	Interorganizational networks were considered indispensable in defining and implementing strategies whose results became

		sustainable in the long term and in achieving a greater variety of impacted dimensions.
Fiandrino, Gromis di Trana, Tonelli, & Rizzato, 2023	Understand how different actors catalyze sustainability-oriented innovation in the knowledge ecosystem.	They identified that network design and framing are strategies for sustainability-oriented innovation. Network management and participation are management mechanisms that drive sustainability-oriented innovation. These elements support the search for sustainability-oriented innovation.
Cléo, Vaughan, Edwards, & Moita, 2024	Analyze the flows of content and process information that are sustained by knowledge sharing between managers and owners.	The network structure determines the flow of information between managers and owners. Owners receive the most information, while managers have more opportunity to correct and disseminate information within the network.
Gaudig, Ebersberger, & Kuckertz, 2021	Analyze how different types of organizations have addressed sustainability-oriented macro trends and to what extent they have focused on sustainability-oriented innovation activities.	Sustainability is perceived as a key driver of structural change in different types of organizations. These focus on multiple macro trends oriented towards sustainability while simultaneously focusing on a specific type of innovation, in which all three types of innovations (technological, marketing, and product and service innovations) can be integrated.
Machado & Kuhl, 2023	Analyze how collaboration for innovation is developed and its relationship with sustainability in manufacturing industries in Paraná.	Organizations have sought to develop new products and services, as well as improvements to existing ones, within the three dimensions of sustainability. Collaboration and sustainability are impact factors for innovation, and it can be concluded that organizations that collaborate, whether with business groups, subsidiaries, or others, tend to develop more actions related to sustainability.

Source: the Author (2024).

Linked to the theme of sustainability and innovation, Melo et al. (2023) sought to address the factors associated with collaboration and technological capacity to improve internal company processes, aiming at the development of sustainable innovations. The study by Lima et al. (2020) took a similar approach, addressing the degree of innovation for the development of sustainability-related actions, but focused exclusively on small companies. Innovations

related to technology, marketing, and product and service innovations were the topics most addressed by companies, according to Gaudig et al. (2021).

Fiandrino et al. (2023) discussed SOI in the context of networks, highlighting that the strategic framework of these networks is fundamental for the development of sustainable innovations. In this sense, studies such as those by Nascimento et al. (2022) and Vieira et al. (2019) reinforce this positive relationship between innovation and networks, addressing the role of interorganizational networks involving diverse stakeholders, including the active participation of citizens, as essential elements for driving the development of sustainable innovations.

The study developed by Nova (2023) provided a perspective on the capacity for innovation through organizational learning among company members, identifying that this process contributes to the implementation of socially responsible innovations. Complementarily, McLeod et al. (2024) address the topics of knowledge sharing and networks, pointing out that managers and owners maintain a direct relationship with the flow of information, both in receiving and identifying, correcting, and disseminating this knowledge to other members of the network.

Regarding collaboration and SRI, a literature review study was found that analyzes the relationships between actors in a network, both at the macroinstitutional and microinstitutional levels, and their impact on SRI outcomes. This study selects articles that discuss the emergence of sustainable innovations, describes the actors involved in this process, the interaction between them, and explains the flow of knowledge that sustains these innovations (Wilke & Pyka, 2024).

In addition, we found a dissertation linking the themes of SOI and collaboration in industries in Paraná, developed by Machado (2020), which identified that the improvement and development of new products and services occur in all three dimensions of sustainability, causing collaboration to have a positive impact on SOI.

Furthermore, focusing on the themes of collaboration and sustainability in partnership networks, there is the study by Goi et al. (2022), which sought to investigate the ways in which academics from higher education institutions enable partnerships between stakeholders at the global and regional levels in addressing sustainability challenges. In other words, they sought to answer whether this collaboration enables sustainability-oriented projects, how academics facilitate partnerships between stakeholders in addressing sustainability challenges, and what are the results of disseminating knowledge to a sustainability-oriented audience.

These studies address one or more central themes of the present research, linked to SOI, knowledge sharing, and the relationship between these concepts within a business network.

However, it was not possible to find studies that addressed the themes together, focusing on evaluating the categories of knowledge sharing in networks and their relationship with strategies aimed at developing SOI in trade associations, thus demonstrating the importance of the theme in question for the academic literature.

2.5 CATEGORIES ANALYZED

To meet the objectives of this research, categories were developed related to factors that influence knowledge sharing in networks and practices aimed at developing OIS. These categories correspond to the conceptual definitions of the themes that will be investigated and analyzed in this study.

Participation in a sharing network creates bonds between members and assists in the joint learning process in the search for solutions. Directors, employees, and stakeholders gain benefits related to technology, resources, and shared knowledge, generating greater willingness to develop innovations (Özlem, 2022). Thus, participating and sharing the knowledge that each individual has in the sharing network is fundamental for the successful execution and delivery of projects, actions, and new processes developed (Penttinen & Frösén, 2022).

The success of projects, actions, and processes developed in the network and shared among its members through active participation can yield positive results in terms of innovation and sustainability within the organization, team development, and value creation (Scarabelli et al., 2022).

For this innovation to be implemented, a multi-stage process is necessary so that new ideas created jointly, through the active participation of members in meetings created by the network, are actually transformed into processes and products or services based on strategic objectives within the three pillars of sustainability (Bonassi & Lisboa, 2003; Campos Junges & Campos, 2022; Hillman et al., 2018; Yu et al., 2023).

Sharing knowledge in a network is therefore a collective process based on the exchange of ideas, information, and suggestions in the search for solutions and innovations for the organizations involved (Srivastava et al., 2006). Aspects of participation and collaboration in innovation promote more balanced economic, social, and environmental development, elevating innovation beyond a simple financial return by also considering long-term social and environmental value (Machado & Kuhl, 2023). In this vein, the category of participation in

networked knowledge sharing can contribute to the development of innovation practices oriented toward sustainability.

A sharing network is formed based on organizations that share common goals and, based on these goals, develop innovations within their entities, whether in products or services, processes or organizational (Machado & Kuhl, 2023). In this sphere, there is a combination of diverse knowledge and personal experiences that, based on their common goals, create innovative practices through shared knowledge (Choo & Alvarenga, 2010).

Knowledge is only shared when there are collective interests, that is, when the network shares common goals for mutual benefit. Shared and jointly created goals and visions lead to better quality and greater knowledge sharing (Hall et al., 2022).

Machado and Kuhl (2023) investigated the main objectives related to innovation within organizations that collaborate with each other, finding that the main improvements made are based on objectives related to improvements in products and services, i.e., incremental innovations. Within the relationship between these innovation-based objectives and sustainability, in the economic dimension, the main objective was to take action to avoid customer complaints and returns; in the social dimension, it involved actions to prevent workplace injuries and illnesses; and in the environmental dimension, the goals are based on reducing material consumption in products and services.

In the study by Urbancová & Vrabcová (2023), sustainability motivates the creation of goals based on development within a company in 37% of cases, as well as assisting in the development of new products in 33% of cases surveyed, equivalent to one-third of companies. With regard to the development of new products, companies focus on incorporating sustainability into packaging and reducing the amount of waste generated, representing 68% of companies, with the main challenges being the materials used in packaging and collection and recycling, representing 59% of companies.

These changes with a focus on sustainability provide benefits to the organizations' objectives, especially in economic performance, through cost reduction, profit achievement, and operational optimization, and generate changes and positively impact the social and environmental spheres (Fiandrino et al., 2023).

The success of a network has positive results on the innovation capacity and performance of the organizations involved. Furthermore, the capacity of the network can be explained by the fact that companies that are part of a network are able to achieve common goals in relation to innovation, compared to companies that are not part of a network, showing

that such companies have a greater capacity to help each other in problem management (Mannes & Beuren, 2021).

Thus, the category of common goals in network knowledge sharing can contribute to the development of innovation practices oriented towards sustainability.

An individual's knowledge sharing is closely associated with their feelings, experiences, and emotions. A network member, whether in face-to-face or online meetings, only shares or receives knowledge if it relates to organizational issues mentioned in their vision, culture, and values, thereby generating individual trust in the network in which they operate (Choo & Alvarenga, 2010).

It is thus understood that knowledge sharing is more easily achieved when trust in the network is solid, having a positive influence on the search for solutions and the creation of stronger bonds, favoring better management of possible risks, involving its members and the relationship between partners, improving innovation capacity and performance (Mannes & Beuren, 2021).

Within a sharing network, encompassing small organizations in the same field of activity, the category of trust developed through strong personal relationships, together with social identity, that is, the sense of belonging to that group, is one of the main characteristics that favor knowledge exchange (Hall et al., 2022).

Hall et al. (2022) reported that trust in knowledge sharing can be divided between trust based on benevolence, arising from a belief in the integrity of other members, and trust based on competence, on a belief in the ability of other members. These two forms of trust generate greater cooperation for the development of innovations. This highlights that the capacity for innovation and performance in the network, through a strong sense of trust and collaboration, can also have positive results in sustainable practices, through jointly created knowledge (Machado & Kuhl, 2023).

The trust process initiates the construction of shared knowledge and the generation of innovation. This innovation may lead to practices related to sustainability, involving social, economic, and environmental dimensions. For this, it is necessary that the subsequent processes, the stages of knowledge-based idea construction, follow the initial procedures (Hallstedt et al., 2013). In this light, in order for SOI practices to be included in the network, they need to be based on clear objectives, created among members through good relationships and mutual trust within the network (Neutzling et al., 2018). Thus, the category of trust in networked knowledge sharing can contribute to the development of SOI practices.

Nonaka and Konno (1998) introduced the term “ba” into knowledge management, translated as a space for emerging relationships, with the aim of creating knowledge. These spaces can be physical, such as an office or a commercial space, virtual, such as emails or virtual meetings, and mental, encompassing shared experiences, ideas, or ideals. These three spaces are the basis for knowledge creation within a group.

The use of virtual means for sharing among network members helps to transfer this knowledge more quickly, increasing the proximity of organizations even if they are in different locations (Scarabelli et al., 2022). The most appropriate communication channels for knowledge sharing are electronic social networks, forming a joint platform for useful sharing among members (Hall et al., 2022). This context also includes the knowledge storage channel, called a database and network support, containing all the knowledge developed jointly, stored, and available to the organizations involved (Scarabelli et al., 2022).

The use of digital communication channels in knowledge sharing enhances internal elements of organizations, such as the efficiency of operations and the exchange of complementary resources, support, and opportunities generated through technological tools, enriching the network's capacity for innovation (Schraiber et al., 2021). Communication channels are the means used to share knowledge with all necessary parties in the network. Therefore, it is understood that the dissemination of knowledge through appropriate channels has a positive effect on the ability of organizations to respond to situations and challenges. Similarly, networks with the ability to generate responses to situations and challenges tend to be more positive in transmitting their knowledge to the network through communication channels (Darronch, 2005).

Busnello and Vieira (2021) conducted a study with companies associated with a trade association that operate in different sectors and found that, of the communication channels used, those that show the most positive results in knowledge creation and sharing are collaborative spaces and face-to-face meetings.

The use of communication channels, together with technology, can be seen as a powerful ally in the development of sustainable innovation practices, enabling greater openness on the part of the network of organizations in acquiring innovative technologies and inventions in products or services, processes, and organization, creating internal sharing systems with the use of digital channels to transform organizations (Tura & Ojanen, 2022). In this sense, the category of communication channels in network knowledge sharing can contribute to the development of innovation practices oriented towards sustainability.

Within a sharing network, the hierarchical position of a given member can affect communication and collaboration between members, as well as their act of sharing. Members who have high hierarchical levels in the network and people who have recently risen in their hierarchical level tend to feel more motivated to share their knowledge. Similarly, the length of time in a high position can have positive results in the accumulation of information and knowledge (Li et al., 2023; Van Houten, 2023).

The study by Nonaka and Konno (1998) and Srivastava et al. (2006) showed that leadership within a team, with regard to knowledge sharing, is positively related to the team's effectiveness and performance in innovations, projects, and actions carried out. Leadership needs to create an environment conducive to knowledge sharing, nurturing, supporting, and improving, creating the conditions necessary for knowledge to be shared and acquired by all members necessary for the development of innovations, projects, and actions.

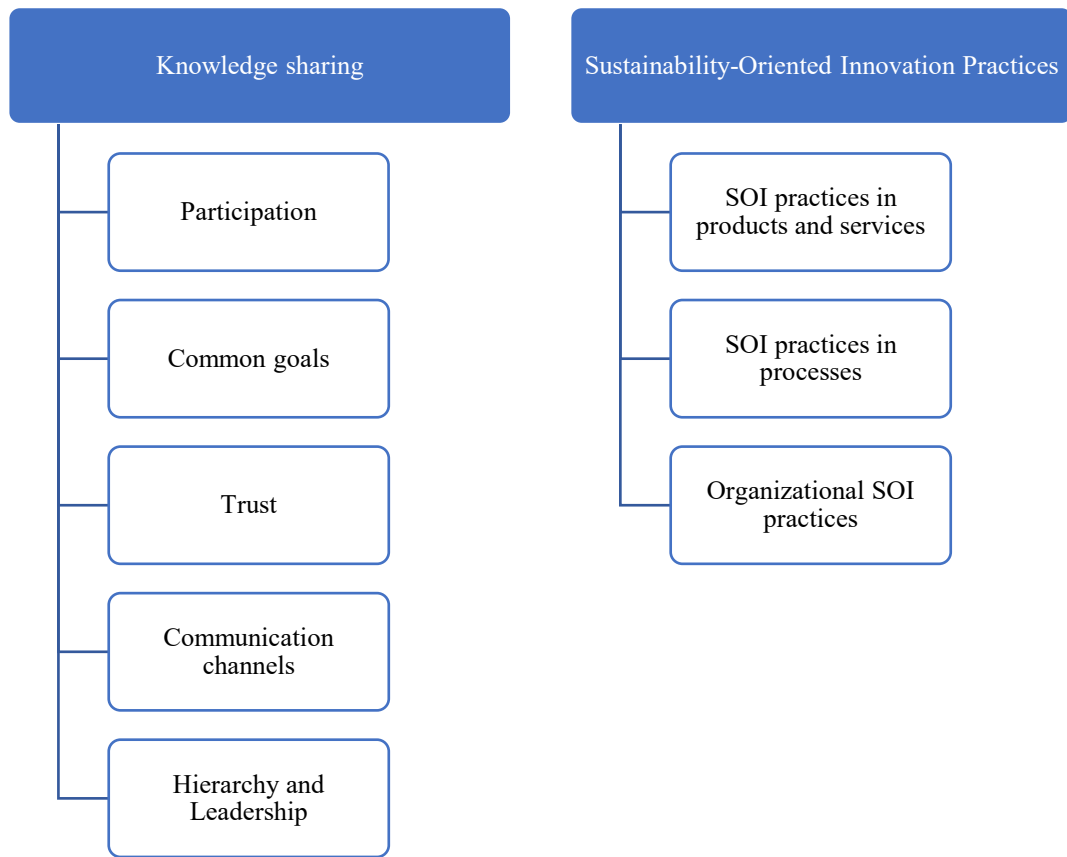
Sarafan et al. (2022) sought to evaluate the results of knowledge sharing in project-based delivery. The study identified that shared network management, in which members have mutual responsibility for identifying problems and sharing knowledge, was more effective and motivated its members to develop innovations in network projects, when compared to outsourced management, in which a specialized organization is hired to develop projects.

Leadership in an organization that seeks to learn cannot be based on traditional leadership, defining direction and making important decisions in an individualistic manner. It is necessary to have a new type of leadership, with more subtle and equally important tasks, through shared leadership, with the leader playing the role of designer, designing learning processes, administrator, managing the relevant visions shared by members, and teacher, teaching, developing, and fostering the knowledge learning process (Senge, 1990).

Leaders who make changes within the company's values and practices, through the creation of strategies focused on sustainability, directly affect the performance of their employees, presenting practices focused on sustainable innovations with a positive impact on employee engagement and their desire to remain in the organization, that is, on employee retention. In this regard, developing employee potential is an essential element of organizational innovation (Urbancová & Vrabcová, 2023). Meanwhile, the category of hierarchy and leadership in networked knowledge sharing can contribute to the development of SOI practices.

Thus, this study sought to understand how knowledge sharing in the network formed by Trade Associations helps to develop SOI practices. To this end, categories and practices to be analyzed in the network were developed, as shown in Figure 3.

Figure 3 - *Categories and practices analyzed in the network*



Source: the Author (2024).

Through categories linked to factors influencing knowledge sharing in networks and practices aimed at developing SOI, we seek to identify this relationship within a network.

3 RESEARCH METHOD AND TECHNIQUES

Just as important as the know-how and theoretical framework chosen to support the search for answers is the methodological approach adopted, i.e., the “how to do it,” which guides the path to achieving the proposed objectives. Thus, in order to clarify this question, this chapter presents the methodological approach used in the research.

3.1 RESEARCH DESIGN

The design of a research study involves its planning, considering the environment in which the data was collected, the tools used for this collection, and the control of the variables involved in this process, as well as the best strategy for analyzing and interpreting the data (Raupp & Beurer, 2006).

This study is characterized as qualitative research, as it seeks to study behaviors, experiences, and emotions within a specific group (Strauss & Corbin, 2008).

In terms of its objectives, this research is characterized as descriptive, since it seeks to understand the nature of the phenomenon studied, how it is established, and the characteristics and processes that comprise it (Gil, 1999).

As for the procedures involved, in order to align with the objectives established for this investigation, we opted to conduct interviews. This procedure involves directly questioning the public, seeking to understand their behaviors through interviews (Gil, 1999).

The population of this research was the Commercial and Business Associations of the Western Region of Paraná, affiliated with the Coordination of Commercial and Business Associations of Western Paraná (CACIOPAR), which comprises 46 affiliated commercial and business associations, representing more than 16,000 members.

The CACIOPAR network was chosen because it is the oldest among the coordinating bodies that are currently part of the Federation of Commercial and Business Associations of the State of Paraná (FACIAP) (CACIOPAR, 2023) and also because the State University of Western Paraná (Unioeste) is located in this region.

Based on the survey population, participants were chosen from a portion of the selected group. The selection criteria for the TAs was to choose those with the highest and lowest membership rates in each of the four micro-regions in which they are located, i.e., the TAs with the highest and lowest representation. This indicator is normally used by TAs to identify their

representativeness at the local level by calculating the ratio between the number of companies in the municipality and the number of companies associated with the entity in that municipality. Regarding the TAs selected for the survey, three of them chose not to participate in the interviews and, as a criterion, the next TA that fit the criterion of highest or lowest association index was selected. The TAs selected to participate in the interview are shown in Table 1 below.

Table 1 - *Associations selected for interviews*

TAs affiliated with Western Paraná	Microregion	TA acronym	Companies 2022	Associates 2020	Association Index (%)
Matelândia	1	ACIMA	424	258	60
Foz do Iguaçu	1	ACIFI	7,090	1,550	22
Tupãssi	2	ACIATU	217	144	63
Corbélia	2	ACICORB	576	130	23
Marechal Cândido Rondon	3	ACIMACAR	1,938	1,643	86
São José das Palmeiras	3	ACISP	99	17	17
Três Barras do Paraná	4	TATB	271	132	53
Guaraniaçu	4	TAG	567	120	21

Source: the Author (2024).

The decision to interview the current presidents of each TA was based on the fact that this position represents each Association within CACIOPAR meetings and is directly linked to the field of study of this research.

3.2 DATA COLLECTION PROCEDURES

The data collection instrument was developed through interviews. This involves a meeting between two people, with the aim of one of them obtaining certain information about the subject being researched through conversation. In this technique, the researcher has more direct contact with the interviewee, learning their opinions on the topic being addressed (Marconi & Lakatos, 2017).

The information collection technique chosen was structured interviews, with pre-formulated questions, aimed at helping to conduct the interview in the best possible way. To conduct these interviews, from October 3 to 21, contact was first established with the TAs affiliated with CACIOPAR to explain the research proposal to the presidents and request their contribution to this research. After accepting the invitation, the TAs sent the direct contact information of the presidents of each entity, and then the interviews were scheduled, all online. The interviews took place from October 7 to 23, recorded through the Google Meet platform. Each interview lasted an average of one and a half hours. Of the eight interviews conducted,

seven were done remotely, and only one was done in person, at the headquarters of the president's Commercial and Business Association, also recorded by Google Meet for record-keeping purposes.

Each president received a code at the location of their name, in order to maintain the description and anonymity of the interviewees. The following table shows the date, location, code, and duration of each interview.

Table 2 - Codes and interviews conducted

Interviewee code	Date	Setting	Length of interview
President A	Oct. 9, 2024	Google Meet	1 hr 18 min 15 sec
President B	Oct. 23, 2024	Google Meet	53 min 23 sec
President C	Oct. 8, 2024	Google Meet	55 min 50 sec
President D	Oct. 7, 2024	Google Meet	50 min 46 sec
President E	Oct. 9, 2024	Google Meet	39 min 47 sec
President F	Oct. 8, 2024	Association Headquarters	1 hr 15 min 25 sec
President G	Oct. 9, 2024	Google Meet	51 min 08 sec
President H	Oct. 14, 2024	Google Meet	48 min 52 sec

Source: the Author (2024).

The structured interview guide was standardized, consisting of three blocks of questions, as shown in Chart 4.

Chart 4 - Categories analyzed for the interview script

GROUP 1 – Profile of interviewees and associations participating in the survey that make up the network	SOURCES USED
Profile of respondents and TA	-
GROUP 2 – Knowledge Sharing Categories	SOURCES USED
Participation	Bonassi & Lisboa (2003); Srivastava, Bartol, & Locke (2006); Hillman, Axon, & Morrissey (2018); Campos Junges & Campos (2022); Özlem (2022); Penttinen & Frösén (2022); Scarabelli, Sartori, & da Cruz Urpia (2022); Yu, Zheng, Lin, & Yuan (2023); Machado & Kuhl (2023).
Common goals	Choo & Alvarenga Neto (2010); Mannes & Beuren (2021); Hall, Ellis, & McArthur (2022); Machado & Kuhl (2023); Urbancová & Vrabcová (2023); Fiandrino, Gromis di Trana, Tonelli, & Rizzato (2023).
Trust	Choo & Alvarenga Neto (2010); Hallstedt, Thompson, & Lindahl (2013); Neutzling, Land, Seuring, & do Nascimento (2018); Mannes & Beuren (2021); Hall, Ellis & McArthur (2022); Machado & Kuhl (2023).
Communication channels	Nonaka & Konno (1998); Darronch (2005); Schraiber, de Melo, & Franzoni (2021); Busnello & Vieira (2021); Tura & Ojanen (2022); Hall, Ellis, & McArthur (2022); Scarabelli, Sartori, & da Cruz Urpia (2022).

Hierarchy and Leadership	Senge (1990); Nonaka & Konno (1998); Srivastava, Bartol, & Locke (2006); Sarafan, Lawson, Roehrich, & Squire (2022); Van Houten (2023); Li, Martins, Vasconcelos, & Peng, 2023); Urbancová & Vrabcová (2023).
GROUP 3 – Sustainability-oriented Innovation Practices	SOURCES USED
SOI practices in products and services	Adams, Bessant, Jeanrenaud, Bessant, Denyer, & Overy (2016); Klewitz & Hansen (2014); Kneipp, Gomes, Favarin, Motke, & Cassol (2022).
SOI practices in processes	
Organizational SOI practices	

Source: the Author (2024).

In the first section, questions were designed to identify the interviewee's profile. In the second section, questions related to knowledge sharing in networks and its relationship with sustainable innovation practices were asked. Finally, questions about the SOI practices carried out by the TAs were asked. The complete interview guide is provided in Appendix A.

Furthermore, to complement the research, information was collected from official websites and freely accessible documents provided by the TAs, such as statutes and news on the entities' platforms, to characterize the network and identify its products, services, actions, and projects carried out during 2024. To this end, in October 2024, the official websites of each of the eight entities interviewed were accessed in order to verify the statutes, the information described on the website itself, and the news published by each TA.

3.3 DATA ANALYSIS PROCEDURES

In the first stage of data analysis, during November 2024, the documents and content found on the official websites of each of the TAs that participated in the structured interviews were analyzed, as well as on CACIOPAR websites, such as freely accessible documents, statutes, and news related to actions, projects, certifications, and other procedures they develop. In this stage, the statutes of each entity were found, as well as news that the TAs published on their pages and explanatory texts about their services, actions, and projects on their websites.

As a result, the products and services, actions and projects, and policies and guidelines that the TAs have and carried out during the months of January to December 2024 were mapped and summarized in a table using three categories, characterizing and mapping the TAs that are part of the CACIOPAR network and what they have in common.

To verify the qualitative data collected through structured interviews, content analysis was carried out during November and December 2024. Content analysis is a set of communication analysis techniques that aims to obtain, through systematic procedures and

description of the content obtained in the interviews, indicators, which may be qualitative or quantitative, that allow for the inference of knowledge related to the conditions of production or reception of the content obtained in these interviews (Bardin, 1977).

The interviews were transcribed using the Discript platform. The transcription was literal and colloquial, containing possible noise, thus providing a faithful transcription of each interview recording. After transcription, a complete reading was carried out and all noise and language errors were removed in order to leave the text clean and easier to understand. Once this was done, a new reading was carried out in order to perform a more detailed analysis of the material, based on the eight categories of analysis created, which were based on the studies used in this dissertation and the propositions formulated.

For content analysis, we used Atlas.ti web software, which is a tool for qualitative data analysis that assists in the management and interpretation of collected data, organizing responses, recording data, and enabling the monitoring of records made. It contributes to the analysis of empirical data that were previously related within the ordered categories (Walter & Bach, 2015).

The interviews, already transcribed and free of language errors, were categorized with the help of the Atlas.ti web platform. For this stage, the previously defined and analyzed categories were identified in order to facilitate the analysis of the content of each factor of knowledge sharing. To categorize, some keywords were used for identification, since some topics and categories ended up complementing each other throughout the interview, containing important information from one category in another. Thus, this stage, using the Atlas.ti web platform, was important for mapping information about the categories of knowledge sharing and SOI practices. Chart 5 presents the keywords used in each category.

Chart 5 - *Analysis category and keywords for identification*

CATEGORIES	KEYWORDS FOR IDENTIFICATION
Factors influencing knowledge sharing and its relationship with sustainable innovation practices	
Participation	Frequency of participation in meetings, time spent participating, development or improvement of sustainable products and services, development or improvement of sustainable processes, development or improvement of internal policies or standards.
Common goals	Objectives of the CACIOPAR Network, advantages of the objectives for each TA, advantages of the network, development of objectives based on sustainability.
Trust	Trust in shared knowledge, trust in problem solving, trust in activities related to sustainability.
Communication channels	Face-to-face meetings, online meetings, information storage, social networks for sharing.

Hierarchy and leadership	Motivation on the part of leaders, leaders who share knowledge, rewards those being led.
SOI practices conducted by TAs	
SOI practices in products and services	Sustainable design, actions, practices, or certifications; measurement of resource consumption; product or service life cycle; reduction or reuse of materials.
SOI practices in processes	Reduction of environmental impacts in internal processes, proper disposal of materials, reduction of energy, water, and material consumption, replacement of inefficient processes, forms of transportation.
Organizational SOI practices	Certifications in sustainability, preservation policies, environmental accounting, sustainability committee, stakeholder involvement, training, behavioral standards.

Source: the Author (2024).

Based on the analysis categories framework, it was possible to map the topics relevant to each category analyzed in order to verify how knowledge sharing in networks helps develop SOI practices in TAs. After categorization, reports were generated on the Atlas.ti web platform for each of the mapped categories, facilitating the analysis stage. With the reports by category in hand, the analysis of the findings began.

3.4 LIMITATIONS OF RESEARCH METHODS AND TECHNIQUES

Among the possible limitations of research involving data collection, we can identify the emphasis on perspective, i.e., the researcher's point of view and expectations, the lack of depth within the study and social processes, and the limited concern with the process of change, since it is effective for less delicate problems and has little psychological or psychosocial depth (Prodanov & Freitas, 2013). For this reason, we opted to conduct structured interviews, with the aim of keeping the questions and answers within the scope of what we actually sought to analyze.

Regarding data collection through interviews, the limitations on the part of the interviewee include: lack of motivation on the part of the respondent, lack of understanding of the questions, the presentation of possible false or incomplete answers by the respondents, lack of sufficient information about the participants, inability to answer the questions asked, the influence of the interviewer on the interviewee, and the influence of the respondent's personal opinions on the information shared (Gil, 1999; Reio, 2024).

Given the known limitations, clear and objective questions were sought. Throughout the interview, the interviewer made clear to the interviewee the duration and stages of the interview. Similarly, after each set of questions, the interviewer asked the interviewee about the clarity of

the questions being asked. It was also necessary to change some words during the interview, as the level of knowledge of each interviewee regarding the question was observed, but without altering the objective of the question.

Another point taken into consideration was noise that could interfere with the interviews. For this reason, all interviews were conducted in a closed room with direct cable internet access and no people around. This practice was also requested of the interviewee, so that limitations related to external noise could be minimized.

It is understood that limitations must be addressed so that the quality of the responses collected is not compromised. In this sense, the person responsible for conducting the research devoted careful attention to planning, preparation, and execution, with a view to overcoming the problems presented (Gil, 1999).

4 ANALYSIS AND INTERPRETATION OF FINDINGS

The purpose of this chapter is to present the profile of the CACIOPAR network and analyze the evidence collected. The theoretical framework described in Chapter 2 is intended to guide the analysis and identify the relevant factors in this process.

4.1 NETWORK PROFILE OF CACIOPAR

According to information found on its website and documents made available online by the coordination office, the CACIOPAR network is a civil association, with legal personality under private law, without economic purposes and with an unlimited duration. It began its activities in 1976. It was created in response to a request from the then president of the Cascavel Commercial and Industrial Association (ACIC), Hylo Francisco, to represent the region and act as a spokesperson for the Commercial and Business Associations of the West (CACIOPAR, 2024).

Currently, CACIOPAR is the oldest coordination body within FACIAP. Comprising 46 TAs, representing more than 16,000 members and located in the city of Cascavel, its main objective is “the integration and socioeconomic strengthening of the Western Region of Paraná and the sustained growth of the Commercial and Business Associations it represents, as well as ensuring that ethical relations prevail in business and politics, with a view to the development of society as a whole.” It works in the interests of the community and for the constant strengthening of the Western Region (CACIOPAR, 2024).

Chart 6 - Strategic pillars of the network

Strategic pillars of the CACIOPAR network	
Mission	Integrate, strengthen, and represent Tas, aiming at the socioeconomic development of Western Paraná.
Vision	Be recognized by TAs and society as one of the main mobilizing entities and representatives of the business class, driving sustainable development with each new administration.
Values	Altruism, Supra-partisanship, Cooperation, Transparency, Respect, Commitment, Harmony in the associative system, Ethics, and Sustainable Development.
Strategic Pillars	Local development, Associative culture, Service Provision, and Management (Financial, market, internal processes, and people).

Source: Documents (2024).

According to the 11th Amendment to CACIOPAR's Statute (2023), the objectives of the CACIOPAR network are the following (our translation; original in Portuguese):

- I – To bring together and guide the class it represents;
- II – To conduct studies, planning, and coordination of activities, projects, and objectives of associated entities, aiming primarily at private property, economic freedom, fair wages, the legitimacy of profit, and the defense of the business class and private initiative;
- III – To represent its members, judicially and extrajudicially, using constitutionally guaranteed procedural institutions, and may even file collective writs of mandamus and other actions for which it is legally entitled to act, in court or out of court, collectively;
- IV – To establish joint plans with its Associates based in the Western Region, aiming at action oriented towards the defense of free enterprise for community development in the economic, social, sports, environmental, and cultural fields;
- V – To join the Federation of Commercial and Business Associations of the State of Paraná – FACIAP, a state body representing the interests of Paraná entrepreneurs and composed of all the Coordinating Bodies of Commercial and Business Associations of the State of Paraná;
- VI – To publicize the activities of any associated entity through the available media, provided that there is regional, state, or national interest;
- VII – To advise on economic, financial, legal, administrative, and political matters related to the activities of any of the associated entities in the pursuit of their respective corporate purposes;
- VIII – To advocate for regional, state, and national interests within the scope of the Federation of Commercial and Business Associations of the State of Paraná (FACIAP) and at its respective meetings;
- IX – To collaborate with public authorities in the preparation, implementation, protection, and execution of programs related to the development of the western region of the state, mainly regarding infrastructure projects, and advise them on the study of issues and problems related to the business community;
- X – To collaborate with private entities, when their objectives are consistent with the purposes of CACIOPAR, whether for the social, economic, sports, environmental, and cultural development of the Western Region of Paraná;
- XI – To maintain at its headquarters, on its own or through an agreement with another entity, an information and technical dissemination service of general interest, especially a specific press agency, periodically distributing such information to affiliated entities and similar entities;

- XII – To assist any similar entity in the country through campaigns, research, studies, and projects that are of regional, state, or national interest, for the defense and strengthening of the business class;
- XIII – To maintain unity and solidarity among all representative bodies of the business and labor classes that advocate for the progress of their communities;
- XIV – To demand, from the competent authorities, the resolution of problems or issues of interest to any associated entity;
- XV – To develop, promote, encourage, and carry out cultural, sports, educational, and research activities in order to contribute to the promotion of human dignity;
- XVI – To edit and produce periodicals, papers, magazines, and books of a technical, scientific, educational, and cultural nature related to the interests of the business community;
- XVII – To hold and participate in exhibitions, fairs, festivals, and shows of a business, rural, and cultural nature;
- XVIII – To organize courses, technical workshops, conferences, fairs, campaigns, seminars, lectures, congresses, missions, and cultural events;
- XIX – To promote environmental preservation measures;
- XX – To establish partnerships with health care plans with other entities whose beneficiaries are their employees and dependents and their associates, including persons linked to them, their officers, associates, and employees who adhere to these plans.

In order to achieve the aforementioned objectives, CACIOPAR offers business services and solutions in partnership with other FACIAP entities and services, which affiliated TAs can purchase and offer to their members, as well as carrying out projects and actions on an annual basis.

Chart 7 - Network services and solutions

Services and solutions available from CACIOPAR	
<i>Paraná Energia</i>	Cooperative that works to generate value for those who invest in power plants from any renewable source and for those who need to save on their energy bills. Through acquisition, energy is passed on to cooperative members at a more affordable cost than the utility company.
<i>Easy Dots</i>	Digital time card system through an app.
<i>Humana Saúde Sul</i>	Health and dental plan operator.
<i>Supera Sistemas</i>	Internal system for business solutions developed specifically for the Trade Association sector.
<i>Sindilojas Saúde</i>	Medical plan offering health and occupational health services, life insurance, health plans, and occupational safety and health consulting.
<i>Certificata</i>	Electronic document signing tool, replacing handwritten signatures.
<i>Safework Saúde Ocupacional</i>	Occupational health, environmental, and occupational safety services.
<i>Zion System</i>	Website development and solutions for companies.
<i>Global Soluções Empresariais</i>	Trademark and patent registration.
Services and solutions available in partnership with FACIAP	
<i>IMA FACIAP</i>	Mediation and arbitration institute to promote a culture of out-of-court dispute resolution.
<i>Promoaqui</i>	Management of sweepstakes, campaigns, and promotions approved by Sefel, with process automation and integration.
<i>Sancor Seguros</i>	Business and personal insurance to protect companies and employees.
<i>Supera Entidades</i>	Operations and functionality software (relationship management, financial, events, controls, billing, and integrated modules).
<i>Empreender Microcrédito</i>	Offering credit at reduced rates for micro and small businesses.
<i>Certificado Digital</i>	Electronic identity service for individuals and legal entities, granting legal validity.
<i>Canhoto fácil</i>	Delivery management solution and storage of stubs and tax document data through barcode reading.
<i>IPPEX Brasil</i>	Certificate of origin document services for the export of goods, free sale declaration, and internationalization of companies.
<i>Nota fiscal rápida</i>	System for issuing invoices.
<i>BCF</i>	FACIAP Central Credit Protection Database, offering the services of SPC Brasil and Serasa Experian, comprising the largest registration information network in Brazil.
<i>Nutricard/FACIAP</i>	Food and meal vouchers.
<i>Cresol/FACIAP</i>	Financial solutions for business growth.
<i>Ouvidoria Digital + FACIAP</i>	Intelligent tool for handling questions, suggestions, compliments, and complaints, with management indicators for decision-making.

Source: Documents (2024).

All available services and solutions are the result of partnerships between the CACIOPAR and FACIAP networks and other organizations, enabling TAs affiliated with the network to use the services internally and offer them to their members. In addition, as a way to achieve its objectives, the CACIOPAR network carries out annual projects and formulates actions in the Western Region. These are mapped, described, digitally stored, and made available to all affiliated TAs at the start of each new presidential and executive term. All these projects and actions are forwarded, in the form of motions, to the competent bodies and entities, with the aim of reinforcing the demands and claims of the West, namely: the Presidency of the Republic, relevant ministries, the Federal Senate, the Federal Chamber of Deputies, the

Confederation of Trade Associations of Brazil (CACB), the Government of the State of Paraná, relevant secretariats, Related agencies and institutions, Legislative Assembly of Paraná, FACIAP (Association of Municipalities of Western Paraná [AMOP]), Partner professional associations, and Commercial Associations of the West.

Among the projects and actions that were requested, demanded, and achieved in partnerships with previous administrations and the competent agencies are: Guaira Bridge, Ferroeste, highway duplication, Unioeste, the University Hospital, the West Beltway, and the duplication of BR-163 between Toledo and Marechal Cândido Rondon. The projects and actions demanded in the current 2023/2024 administration are shown in Chart 8:

Chart 8 - CACIOPAR 2024 Motions

CACIOPAR 2024 Motions		
Motion 1	Microphones 1, 2, 3, and 4	Infrastructure and Logistics (Road, rail, energy, and connectivity)
Motion 2	Microphones 1, 2, 3, and 4	Respect for fundamental constitutional rights (Right to property and time frame)
Motion 3	Microphones 1, 2, 3, and 4	Employability
Motion 4	Microphones 1, 2, 3, and 4	Itaipu, its participation and importance in the West
Motion 5	Microphones 1, 2, 3, and 4	Reforms and legal certainty
Motion 6	Microphones 1, 2, 3, and 4	Public safety
Motion 7	Microphone 1	Improvements to the BR-277 highway and paved access
Motion 8	Micro 1	New district, more attention to the productive sector, and partnerships with Itaipu
Motion 9	Micro 2	Road works to ensure safety and development
Motion 10	Micro 2	Investments to improve the quality of energy supply
Motion 11	Micro 3	Recovery and duplication of highways
Motion 12	Micro 4	Road and infrastructure works

Source: Documents (2024).

The motions developed seek to assist in the ongoing process of expanding indicators in western Paraná (CACIOPAR, 2023). This is in line with Bonassi and Lisboa (2023), who report that the network formed by the TAs aims to promote socioeconomic development by advocating for the interests of those they represent and taking on the role of regional development intervener. Campos Junges and Campos (2022) discuss the importance of the network in seeking greater social expression and cooperation in the struggle for improvements through the development of actions and projects.

Continuing this role of intervention in regional development, the three strategic pillars described by FACIAP (2024) stand out, which guide the objectives of the TA network. These

pillars involve the mobilization and organization of members based on a culture of association, the strengthening of partnerships with entities to offer services and solutions, and the promotion of an environment conducive to strengthening the business sector.

4.2 PROFILE OF TRADE ASSOCIATIONS

The data were collected from searches on the TAs' websites and from interviews with the current presidents of each selected entity. The interviews were conducted by contacting each selected TA directly via WhatsApp, using a pre-formulated text highlighting the theme and purpose of the research, the ethical commitment to the data collected via the interview, and other elements that would contribute to the accuracy and reliability of the evidence and reports collected. After acceptance by the Association, the interview was scheduled directly with the president of each entity. From that point on, a total of eight interviews were conducted, taking place between October 7, 2024, and October 23, 2024, totaling approximately 390 minutes.

In order to preserve the anonymity of the interviewees, their real names were replaced by letters. Chart 9 presents the profile of the presidents interviewed from each of the eight TAs selected for the research.

Chart 9 - Profile of the presidents interviewed

Profile of the presidents interviewed	
President A	Male, 65 years old, with a degree in Economics, specializing in Marketing and Advertising and Business Administration and Strategy. He has been actively involved in the association for over 30 years, serving on the board of directors, as chairman of the superior council, and now as president of TA.
President B	Male, 48 years old, with an academic background in Business Administration and Law. He has been on the board of directors of the entity for 12 years, holding the positions of member of the fiscal council, vice president, treasurer, and now president.
President C	Male, 46 years old, with an academic background in Law. He has been active in the association for three years, joining the board as president.
President D	Female, 43 years old, with an academic background in Mathematics. She has been active in the association for eight years, joining the board four years ago and beginning her first term as president in 2024.
President E	Male, 27 years old, with technical training in Automotive Maintenance. He has been active in the association for five years, beginning his term as president in 2023.
President F	Male, 51 years old, with an academic background in Accounting and a specialization in Financial Accounting. He has been active in the association for eight years, serving on the board for seven years, holding the positions of fiscal advisor, member, vice president, and beginning his first term in 2023.
President G	Male, 40 years old, with a high school diploma. He has been active in the association for 14 years, serving on the board and now as president.
President H	Female, 51 years old, with a degree in Business Administration. She was a member of the association from 1998 to 2000 and rejoined three years ago, serving as vice-treasurer and president.

Source: Research data (2024).

The presidents interviewed belong to eight TAs located within the four micro-regions belonging to CACIOPAR, which have the highest and lowest rates of association in each micro-region. The data were collected through visits to the websites of each association, to the CACIOPAR website, and through interviews with the presidents.

The oldest TA among those interviewed is Foz do Iguaçu, founded in 1951, currently 73 years old. The newest TA is São José das Palmeiras, founded in 1989, currently 35 years old. In terms of the number of members, the largest TA is in Foz do Iguaçu, with 2,640 members, and the smallest is in São José das Palmeiras, with 46 members.

All the presidents interviewed reported that they did not know the exact date their TA joined the CACIOPAR network, but that they have been participating in the network since they joined the entity and since the entity has existed. Chart 10 below shows the profile of the TAs.

Chart 10 - Profile of Trade Associations

Microregion	TA	Establishment	Membership in CACIOPAR	Employees in 2024	Members in 2024	Directors in 2024	Prevailing sector	% of associations
1	Matelândia	1977	About 47 years ago	5	400	26	Trade and industry	60%
1	Foz do Iguaçu	1951	48 years ago	21	2,640	14, 83 with boards	Services	22%
2	Tupãssi	1983	About 41 years ago	3	190	17	Trade	63%
2	Corbélia	1977	About 47 years ago	3	213	12	Trade and services	23%
3	Marechal Cândido Rondon	1968	About 48 years ago	19	2,152	38	Trade	86%
3	São José das Palmeiras	1989	More than 26 years ago	1	46	6	Trade	17%
4	Três Barras do Paraná	1984	More than 13 years ago	3	179	22	Individual Micro-entrepreneur (MEI) in trade and services	53%
4	Guaraniaçu	1982	About 42 years ago	2	118	8	Trade	21%

Source: Research data and documents (2024).

The average age of establishment of TAs is 48 years, and the average number of members is 742. With regard to the number of employees, the average is seven employees, with an average of 27 directors, and commerce is the most prevalent sector among TAs.

4.2.1 Affiliation of TAs to CACIOPAR

TAs affiliated with CACIOPAR must comply with its rules and regulations. The document contains rights and duties, as well as penalties for non-compliance with the established rules.

The rights of each TA correspond to enjoying all the benefits, actions, services, and promotions offered by CACIOPAR, participation in ordinary and extraordinary general meetings with voting rights, participation in board meetings, request for CACIOPAR intervention in matters concerning the development of the communities to which they belong, and request for the creation of committees for matters that are necessary and important to the network. The duties include: respecting and complying with the bylaws and decisions of network meetings, paying monthly membership fees, attending meetings and assemblies, providing information requested by the board that is relevant to the network, and ensuring the conservation of assets involving the CACIOPAR network.

If any entity fails to comply with the aforementioned duties, it may be penalized with a warning, suspension, or exclusion from membership. Although the penalties are mentioned in the CACIOPAR Statute, it is possible to see from the statements of the presidents interviewed that, within the relationship between TA and CACIOPAR, there is no culture of punishment, but rather a peaceful relationship. The Coordination is seen as a fundamental partner for the development of associations, as reported by President F:

CACIOPAR stands out in the state for having this very close connection between associations and also between associations and their leaders. They have an open door for us within the deliberative council, with specific meetings with presidents, which allows the presidents to get to know each other more deeply, because when you hold business meetings, they are open to any businessperson or anyone from the community who wants to participate, and then you don't have that closeness between those who are actually managing the trade association and those who are managing CACIOPAR. So, it is important to have these deliberative council meetings because we have the

opportunity to further improve contact between us and the sharing of ideas (Presidente F, 2024, our translation).

4.2.2 Mission, Vision, and Values of TAs

In the corporate world, it is common practice to disclose an organization's mission, vision, and values. These elements define the purpose of each entity, where it wants to go, and the principles it upholds (Koval et al., 2022; Rotondo et al., 2023). Several of the presidents interviewed shared images of the entity's mission, vision, and values through posters hung within the TA's physical space. In addition, by searching the associations' websites, it was also possible to map them, since the websites of entities affiliated with CACIOPAR are standardized in terms of layout, structure, and services provided. Chart 11 shows this data.

Chart 11- *Mission, Vision, and Values of Trade Associations*

TA	Mission	Vision	Values
Corbélia	To represent the business community, promoting activities to strengthen associations, entrepreneurship, and local and regional development.	To be a benchmark as a representative entity for the business community by 2024.	Transparency in management, maintaining ethics, valuing members, associative principles, and commitment from everyone.
Foz do Iguaçu	To promote and represent the interests of the business community, with an emphasis on strengthening members and contributing to the sustainable development of Foz do Iguaçu.	To be a benchmark for the business strength of Foz do Iguaçu through results-oriented association, promotion of local development, and excellence in service delivery by 2025.	Valuing and respecting members, commitment to members, transparency in actions, pluralism of ideas, social and environmental responsibility, ethics in everything we do, and political impartiality.
Guaraniaçu	-	-	-
Marechal Cândido Rondon	To promote business activity, represent and strengthen members, stimulating community development.	To be a national benchmark through excellence in performance and commitment to sustainable development.	Commitment to the mission, vision, and values of the entity, quality of products and services, ethics in fulfilling values, honesty and transparency of intentions and purposes, equal treatment of members, non-partisanship, and preservation of associative principles.
Matelândia	To stimulate, develop, and integrate the business community and the	To be a state benchmark in associative culture, providing business	Non-partisanship, ethics, professionalism,

	community through association.	solutions, self-sustainable, and an agent of socioeconomic development.	transparency, credibility, and commitment.
São José das Palmeiras	To represent the business class and promote its strengthening, improve competitiveness, provide quality services, participating in the promotion of local development.	In 2024, to be structured to better serve and represent entrepreneurs in São José das Palmeiras.	Proximity to entrepreneurs, mutual assistance, acting based on needs, commitment, respect, impartiality, and quality service.
Três Barras do Paraná	To represent and strengthen the business community through unity and hard work, seeking recognition for the excellence of the products offered.	-	-
Tupãssi	To meet the needs of entrepreneurs, promote association and business development in Tupãssi.	To be structured with good technical support and attractive, serving as a point of reference for entrepreneurs.	Transparent management, maintaining ethics, valuing members, associative principles, and commitment from everyone.

Source: Research data and documents (2024).

Through an analysis of the mission, it is possible to identify that all TAs, except for the TA of Guaraniaçu, which does not present a mission, vision, and values, have as their mission to represent and strengthen the business class, aiming at local development. This mission is also reflected in the mapped mission of CACIOPAR, emphasizing the joint commitment of the network members.

In terms of vision, the TAs seek to be references for their members, as well as being structured to better serve and represent entrepreneurs. In this regard, they are also aligned with CACIOPAR's vision, aiming to be recognized by their affiliates as an entity that mobilizes and represents the business community and promotes sustainable development.

In terms of values, transparency, commitment to members, political neutrality, and associative principles are also present in all TA descriptions, except for the entity in Três Barras do Paraná, which does not have a mapped vision and values. These values are in line with CACIOPAR, through non-partisanship, cooperation, commitment, and harmony in the association system.

Through this mapping, it can be said that the institutional identities of the TAs that are part of the CACIOPAR network are homogeneous, that is, their mission, vision, and values are shared and similar. This joint role of the network generates a positive bond and integrates the

network with collective interests (Monteiro, 2004), improving the search for solutions to the problems and interests of its members and the community in which they operate (Viegas, 2004).

4.2.3 Services offered by TAs

The services offered by TAs are usually referred to as business solutions, as they contribute to the development of their members and to the financial sustainability of the TAs themselves. Most of the services offered come from CACIOPAR and FACIAP, which means that TAs offer similar services.

Information about the main services offered by TAs was obtained by analyzing the content of each institution's website. If the information could not be found or the website was out of date, the president interviewed was asked to list the services offered by their TA. Data collection on the websites took place from October 2, 2024, to October 6, 2024, and was confirmed through interviews conducted from October 7, 2024, to October 23, 2024. The data obtained were tabulated for better visualization, as shown in Table 3.

Table 3 - Business Services for Associations

	Business services available	C o r b é l i a	F o z d o l g u a ç u	G u a r a n i a ç u	M a r e c h a l C . R o n d o n	M a t e l â n d i a	S ã o J . d a s P a l m e i r a s	T r ê s B . D o P a r a n á	T u p ã s s i
1	<i>ACIFI Energia</i>		X						
2	<i>ACIFI Microcrédito</i>		X						
3	Legal Advice				X				
4	<i>Banco de Talentos</i>			X	X		X		
5	<i>Certificado Digital</i>	X	X	X	X	X	X		X
6	Business campaigns				X				
7	Advertising campaigns	X	X	X	X	X	X		
8	Real Estate Certificate		X						
9	<i>Certificado de Origem</i>		X		X		X		
10	<i>CERTIFICATA</i>	X	X		X		X		
11	<i>COB ONLINE</i>				X	X			
12	Legal Collection			X					
13	Educational Agreements	X		X	X		X	X	X
14	Medical Agreements	X	X	X	X	X		X	X
15	Courses, Training, and Lectures	X		X	X	X		X	
16	<i>Easy Dots</i>	X				X	X		
17	<i>Empreender – Núcleos Setoriais</i>	X	X		X	X			
18	<i>Expos and fairs</i>	X		X	X				
19	<i>Fomento Paraná</i>	X			X				
20	<i>GARANTIOESTE</i>		X						X
21	<i>Itamed Plano Empresarial</i>		X						
22	Office rentals	X	X	X	X	X		X	
23	Motivational messages				X				
24	<i>Nutricard</i>		X		X	X			X
25	<i>Paraná Energias</i>	X			X	X			
26	<i>Ponto de Atendimento ao Empreendedor SEBRAE</i>				X			X	
27	<i>PROE – Programa de Estágio</i>	X				X			X
28	Network of Agreements and Partnerships	X	X	X	X	X			
29	Trademark Registration				X				
30	<i>SPC</i>	X	X	X	X	X	X	X	X
31	<i>Saúde Livre Vacinas</i>				X				
32	Occupational Health			X	X				
33	Life Insurance	X							
34	<i>Sind Lojas Saúde</i>	X		X		X			X
35	<i>Nota Fiscal Eletrônica</i>		X			X			
	Total Business Services available	17	16	13	24	15	8	6	8

Source: Research data and documents (2024).

As shown in the table, the business services with the highest number of TA members are: SPC, Digital Certificate, Health Insurance, Education Insurance, Promotional Campaigns, and Room Rentals.

Most of the services offered are the result of partnerships between the CACIOPAR and FACIAP networks and other organizations, such as SPC, Digital Certificates, and Medical Plans. There are also services sought by the TAs themselves to increase the number of benefits for their members, such as Promotional Campaigns and Room Rentals.

Since most of the services are similar, it is important for the network to share its knowledge, pool the resources necessary for the implementation of projects, actions, and innovations, and create common goals, forming a union between entities of different sizes in the pursuit of their success and development (Hall et al., 2022).

4.3 KNOWLEDGE SHARING FOR THE DEVELOPMENT OF SUSTAINABILITY-ORIENTED INNOVATION PRACTICES

After characterizing the profile of the CACIOPAR network, the presidents interviewed, and the TAs participating in the research, we sought to understand how they behave in the network and which knowledge sharing factors play a role in assisting the development of innovation practices geared toward sustainability.

In order to verify the presence of knowledge sharing in the development of SOI practices in the CACIOPAR network, presidents of eight TAs that make up the network were interviewed, selecting entities with the highest and lowest levels of association, that is, representativeness in their municipality. The guiding questions are listed in block B of Appendix A, with questions directed to the interviewees based on the five factors of knowledge sharing and the development of SOI practices: participation in the network, common goals, trust in the network, communication channels, and hierarchy and leadership. In addition, a survey was conducted on the websites of CACIOPAR and the TAs that participated in the survey to map information related to the theme of this study in 2024.

Based on the interviews and the use of the Atlas.ti web platform, the following codes were defined, Table 4, for the analysis of the interview content.

Table 4 - Codes generated for the analysis of interview content

Category	Code	Number of citations from interviewees linked to the code
Participation	Participation in CACIOPAR meetings	21
	Participation outside CACIOPAR network meetings	17
	Sustainability topics at CACIOPAR meetings	29
	Sustainability topics at meetings outside the CACIOPAR network	27
Common goals	Agreement with CACIOPAR's objectives	15
	Sustainable practice objectives of each TA	17
	Advantages of being part of the CACIOPAR network	7
Trust	Trust in the CACIOPAR network	16
	Trust in problem solving	7
Communication channels	Communication channels used by the CACIOPAR network	15
	Dissemination of activities through communication channels	14
Hierarchy and Leadership	Encouragement from CACIOPAR leaders	10
	Motivation generated in the form of awards by CACIOPAR leaders	14
	Topics addressed by CACIOPAR leaders	3
	Help from leaders in problem solving	6
Total	15	218

Source: Research data (2024).

Based on the categories and codes defined in the interviews, we analyzed the content of each factor related to knowledge sharing in the CACIOPAR network. In addition, codes referring to topics external to the network were included, considering that TAs maintain partnerships with local entities in their respective municipalities, which allows for the implementation of actions and projects in the context in which they operate, as described by Viegas (2004) and Monteiro (2004).

4.3.1 Participation in network knowledge sharing

One of the relevant factors for knowledge sharing in networks is the participation of members in meetings and activities carried out by the network, in the pursuit of development and growth of the environment in which they operate (Özlem, 2022). Therefore, it was possible to understand the frequency of participation in meetings and events, in addition to the topics discussed.

It was identified that there are four types of meetings in the network. Business meetings, which take place every two months; and deliberative council meetings, which also take place every two months, alternately. Business meetings are open to TAs that are part of the network,

and both the president and employees of each TA can participate. Deliberative council meetings are exclusively for presidents and discuss issues related to the internal management of TAs.

In addition, there are meetings of the four micro-regions that make up the network. As shown in Table 1, the 46 TAs that are part of the CACIOPAR network are divided into four micro-regions according to their geographical proximity, and each micro-region holds closed meetings with the TAs in its group once a month. Finally, there are CACIOPAR board meetings. These are closed meetings that take place as needed and therefore do not occur on a regular basis. The board members and people invited to attend based on the topic discussed participate in these meetings.

Both in the meetings of each micro-region and in the CACIOPAR business meetings, the presidents reported that they usually bring the executive and, depending on the subject matter, some TA employees. The deliberative council and board meetings, on the other hand, are exclusively for the presidents and other invited guests.

With regard to the frequency of participation in the four types of meetings, it was found that the highest participation is concentrated in the micro-region meetings, which take place once a month. Five presidents reported participating frequently, and three said they participate, but not as often.

Regarding the deliberative council meetings and CACIOPAR meetings, two presidents said they participate frequently and six said they participate, but not so frequently. As for the board meetings, as they occur on demand and by invitation, it was not possible to map participation, as only President F reported having participated once.

The active or intense participation of members is in line with the literature of Özlem (2022), which emphasizes the importance of participation in creating a bond between them and in ensuring that common problems are resolved in a lasting manner.

When asked about the reasons for the low attendance at CACIOPAR meetings, the presidents interviewed mainly pointed to the difference between the issues discussed and local demands, as well as the difficulty of reconciling the duties of the presidency with their professional activities. President A reported: “We don’t have 100% attendance. We explain that the issues discussed are very different from our demands.” President B said: “I have attended very few meetings because it is difficult to reconcile my work with the presidency of the association, so it ends up taking a lot of time.”

These reports corroborate the study by Bonassi and Lisboa (2003), which distinguishes that grouping by geographical location is advantageous due to complementary and similar relationships, favoring the development of coordinated actions, sharing of processes and

information, and partnerships for products and services, making members located in close proximity more likely to actively participate in the network.

In this context, President D reported that frequent participation in the CACIOPAR network contributed significantly to her personal growth:

It's a really cool experience, it's very significant personal growth. I joined recently and people ask me what my goal is there, and I say it's knowledge. And that's definitely true, I'm gaining knowledge that I wouldn't be able to get anywhere else. It's very rewarding, it's really cool. And I plan to run for at least two more years as president of the Association (President D, 2024, our translation).

Participation in the network provides benefits through training, communication with other entities, and special needs, generating personal and professional growth (Özlem, 2022). This point is identified in the report by President D, through her personal growth.

The other presidents who frequently participate in CACIOPAR meetings also described the meetings as an excellent opportunity to exchange knowledge and information between TAs and to acquire new information that is passed on by CACIOPAR members. According to President F:

I think that the main thing when we talk about associations is participation. The more you participate, the more you feel part of a larger movement. When you only go occasionally, you feel like you can't integrate, you can't feel part of that movement. And participation brings that feeling that you are actually part of a much larger and more relevant structure (President F, 2024, our translation).

This report converges with the study by Campos Junges and Campos (2022), who argue that the constant and active participation of members is a central element for the development of collective actions. Such involvement strengthens the promotion and survival of organizational networks, contributing to the realization of activities aligned with sustainable practices. The maturation of individual thinking toward collective thinking is crucial for the sustainable development of a locality.

With regard to the topics addressed at the meetings, according to the interviewees and official news released on the CACIOPAR website, it was found that the business meetings,

board meetings, and deliberative council meetings follow agendas previously defined by CACIOPAR itself. At the micro-region meetings, in addition to the agendas established by the entity, suggestions for topics proposed by the TAs are also included. The topics covered range from strategic planning, accountability, presentation of successful TA cases in different areas, products and services, partnerships and ongoing projects, solutions for the business environment, and other topics relevant to the association system and the interests of the business sector.

4.3.1.1 Participation in knowledge sharing outside CACIOPAR meetings

One of the categories that emerged from the interviews was the participation of TAs in meetings outside CACIOPAR, through partnerships in the municipality with representative entities. One of the objectives of the associative system is to join forces in pursuit of common goals (Campos Junges & Campos, 2022) and, in this way, TAs have representation beyond the CACIOPAR network.

Entities that make up the third sector of the economy, such as TAs, act strategically in contexts where there are market failures or limitations in government action. Their objective is to contribute to collective well-being and social progress by promoting actions and services in partnership with other institutions (Hillman et al., 2018).

In line with the literature on the importance of partnerships, it was found that the main collaboration between the TAs analyzed is with the municipal government. This cooperation takes the form of projects, actions, and events through participation in specific departments, such as the Department of Industry and Commerce, mentioned by President B, the Entrepreneur's Office, mentioned by President D, the Public Safety Council, mentioned by President G, and also contributions to the municipality's Master Plan, as reported by President H.

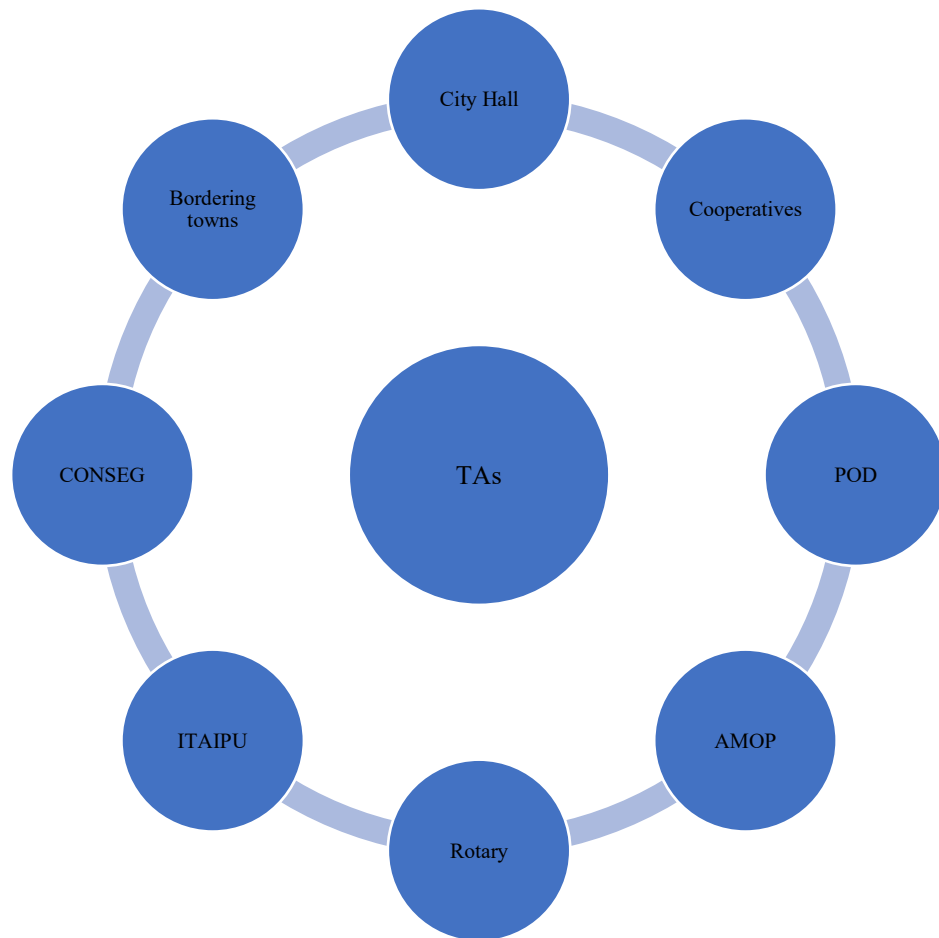
In addition to the city hall, President A reported participation with Amop, which is a political forum representing 58 municipalities in the western region of Paraná and the largest and most organized municipal entity in the state of Paraná. It is headquartered in Cascavel and develops permanent initiatives in defense of the interests of its member municipalities. Among its main achievements are the production railway, free public higher education, a University Hospital, and the Guaira Bridge (AMOP, 2024).

President A and President F stated that they participate in TA through the *Programa Oeste em Desenvolvimento* (Western Development Program) (POD), which seeks to promote sustainable economic development in western Paraná through the collective efforts of institutions in projects and actions to structure the growth of the 55 municipalities in the region (POD, 2024), where, according to President A: “it has a very effective participation because it deals with issues on a macro level and with border involvement, which are broader issues than those dealt with in CACIOPAR” and also the partnership with the Cooperatives of each city.

In addition, President A's TA participates in the Council for the Development of Neighboring Municipalities, which aims to promote the development of the urban and rural areas of the region it comprises, through a partnership with Itaipu Binacional (Council for the Development of Neighboring Municipalities, 2024).

President B commented on TA's participation in the Community Security Council, discussing the resolution of problems related to public security in the municipality. President C reported on participation with Itaipu, creating and developing social projects. Finally, President E mentioned participation with the city's Rotary Club, an entity that brings together members to develop actions in the community.

Figure 4 - *Network of Trade Associations beyond CACIOPAR*



Source: Research data (2024).

All of the partnerships mentioned have had positive results for the TAs, as they enable the exchange and complementarity of ideas for the development of joint actions and projects with other entities, acting beyond the associative system and assisting with the demands of the society in which they operate. President A emphasized that none of the partnerships are formed with the aim of generating competition, but rather to bring together organizations that complement each other's ideas, making it possible to achieve a macro level of representation:

There is no overlap between them, and it is important to highlight this because it means that everyone recognizes that we are the region with the best organization and alignment of ideas regarding demands. Ultimately, this is a positive point that we have (President A, 2024, our translation).

It is worth noting that CACIOPAR also has partnerships with many of these entities, which means that, in addition to CACIOPAR meetings, it is involved, together with the TAs that are part of it, in meetings and partnerships with other entities representing western Paraná, in order to join forces for the development of the region.

4.3.1.2 Sustainability-related topics addressed at CACIOPAR meetings

Among the topics discussed at CACIOPAR business meetings in 2024 and at micro-region meetings, the issues most frequently mentioned by presidents were those related to the governance management process of TAs and the presentation of successful *case studies*, i.e., projects carried out by an TA that, due to their positive results, are shared with other TAs at these meetings.

For the discussion of topics within the network to occur effectively, its members must share a minimum basis of homogeneity, that is, they must have common thoughts, values, and knowledge, which is essential for the development of joint activities and the active participation of members (Özlem, 2022). In this sense, it can be observed that topics related to management and governance represent this point of convergence, given that they are recurrent and considered relevant by all TAs that make up the network.

According to research carried out on the CACIOPAR website, some topics from these meetings were shared in news articles. Regarding the micro-region meetings, the topics for 2024 were: leadership paths, agreements between municipalities and TAs for the use of the SPC, emotional intelligence, emergency credit lines from Fomento Paraná for municipalities affected by floods, floods in Rio Grande do Sul and the delivery of water and urgent items to help, employability, energy, dissemination of the culture of association, security, and training for TA directors and employees. In addition, information was shared about training conducted with TAs on the importance of effective communication for companies.

The board meetings held throughout 2024, which were announced by CACIOPAR, covered topics such as the presentation and analysis of the previous year's results and current management planning. With regard to business meetings, the topics covered were: emergency credit lines from Fomento Paraná for municipalities affected by floods, campaigns for association week, and the awarding of seals from the Management Certification program for 2023, in which 21 TAs received bronze, silver, and gold certificates. This certification was

developed so that entities could use management tools to improve performance and results, with the aim of generating a better return for members and the community.

It should be noted that all the topics found in the surveys conducted on the CACIOPAR website were mentioned by the presidents. Furthermore, it is worth noting that the debates took place according to the demands of each micro-region and CACIOPAR.

Among the main topics discussed by all presidents, when asked about issues related to sustainability, the CACIOPAR Congress, held in September 2024 in the city of Cascavel, stood out. The event's central theme was “ESG: the challenge of generating opportunities with creativity and sustainability” and brought together around 300 businesspeople. The choice of theme and participation in the congress highlight the growing importance of sustainability as a strategic agenda within the network, reinforcing the role of TAs in promoting practices aligned with economic, social, and environmental pillars. The congress addressed technical aspects, the importance, and the impacts of concepts related to Environmental, Social, and Governance (ESG) in the daily lives of companies.

In addition to the theoretical topics presented, the congress brought in three business leaders to report on their results from incorporating ESG into their companies' daily operations, emphasizing that it is possible to combine business profits with sustainable goals. According to President A, this presentation of results connected sustainability in a way that is closer and more accessible to companies:

This is a more dynamic way, in the sense that you can actually show that anyone can practice sustainability, whether it be a small company, a larger company, or you as an individual, from recycling to composting, in short, everything (President A, 2024, our translation).

After the Congress, President H mentioned that another topic related to sustainability was the presentation of an online postgraduate course focused on ESG offered by CACIOPAR to TAs and their members, through a partnership with the Anhanguera institution, with special conditions and prices for entrepreneurs linked to TAs.

In addition to the CACIOPAR Congress, President C commented on collective agendas, such as the fight for fair toll prices in the Western Region, a cause championed by CACIOPAR. President D also mentioned the sharing of information related to new laws and goals discussed at micro-region meetings, which help her TA develop and stay well informed, as well as

management models, which were also mentioned by President F, so that TAs are focused and have good internal organization, given that smaller entities have greater difficulty in managing the TA, so that this sharing of knowledge and the processes adopted help in this development.

Following the interviews, there was a discussion about products and services, with five presidents highlighting CACIOPAR's partnerships with Certificata and Paraná Energias, bringing these two new services to the entities' portfolio. Certificata deals with the electronic signing of documents, replacing physical signatures. According to President F, the agenda for reducing paper is always mentioned by CACIOPAR:

Today, especially when we talk about reducing paper, there is a strong push to go digital. In almost all services, both CACIOPAR and the commercial association have also sought to reduce the production of this type of material. This automatically results in savings for the commercial association and also avoids the production of disposable waste materials (President F, 2024, our translation).

In turn, Paraná Energia is a cooperative that invests in renewable energy power plants, enabling energy to be passed on to cooperative members at a more affordable price through the acquisition of quotas, generating savings in the final price of electricity for businesses and promoting the use of renewable energy sources. This service has also been positively received by the TAs. According to President G, this issue is always mentioned by CACIOPAR.

In addition, the presidents highlighted several actions developed individually by each TA, demonstrating local commitment to social causes and community engagement. Awareness campaigns such as Pink October, Women's Day, and Blue November were frequently mentioned, as well as initiatives aimed at commerce, such as prize draws held on commemorative dates such as Christmas, Mother's Day, and Father's Day, mentioned by four of the presidents interviewed.

President D cited an initiative developed by her TA that originated from an exchange of information at a micro-region meeting: the presentation of an award for outstanding achievement. This award recognizes the best entrepreneurs of the year in their respective business segments and is a way to recognize and promote local commerce. For her, the entire model of the event, from suppliers, question systems, band contacts, and events, was developed with the help of other TAs that already hold this event, making the whole process more accessible and agile. This action demonstrates the assistance and positive exchange of TAs in

the pursuit of development and social actions carried out in the community with the aim of strengthening local commerce.

In addition, President D highlighted the internship program developed by CACIOPAR and implemented by TA, which aims to facilitate the entry of young people into internships at local companies. This initiative has already enabled the hiring of interns at TA itself and is in the process of being expanded to include other member companies.

A final topic mentioned in the interviews was the invasion of land by indigenous peoples in cities in the Western Region. President F stated that CACIOPAR has been seeking ways, through its meetings, to present solutions so that both the indigenous people and the citizens and the community that owns the land can benefit fairly, through a time-bound agreement that allows for the transfer of land to indigenous people who were in that location during a certain period of time.

This model of offering services and developing actions linked to sustainability practices within trade associations is not based on profit. On the contrary, they seek ways to generate benefits for the public they serve and the community in which they operate, creating what the literature calls a “win-win” process through the creation of visible and meaningful sustainability-related actions (Hillman et al., 2018).

According to the interviews and the literature presented, it can be seen that sustainability issues occur in various ways within the CACIOPAR network, ranging from products and services to various actions in the Western Region. The presidents interviewed agree that sustainability-related topics have been included in CACIOPAR meetings in recent times and will be more present from 2024 onwards. However, for President D, sustainability issues are not yet widely seen by the TA, because, according to her, CACIOPAR “addresses issues at the national level. And so, perhaps, we are more focused on observing and understanding the issue than on actually doing something.”

Another important point raised by President A was the assistance of more structured TAs to smaller TAs. According to him, CACIOPAR has a very positive training and information sharing program on sustainability issues, but he feels that if larger TAs provided more support to smaller TAs, the results would be greater and better for everyone.

This point is in line with the literature by Campos Junges and Campos (2022), who describe the organization of associations as a process of uniting members, helping to minimize regional inequalities and problems, and providing direct returns to individuals.

4.3.1.3 Sustainability-related topics outside CACIOPAR meetings

In line with what was mentioned by the presidents, all of them have a partnership with the city government to carry out actions and projects for the benefit of the region. Entities seeking sustainability may carry out broad social actions with other entities, seeking to reinvest the profits generated to achieve multiple financial results, generating social and environmental benefits (Machado & Kuhl, 2023).

Among the actions developed in 2024, President E reported a partnership with the government to collect and filter resumes for job openings in the city, working as mediators in the process between the employee and the company, seeking to reduce the number of job openings and the number of unemployed people. President F also mentioned tree planting throughout the city.

Another action in favor of the community was mentioned by President G, through a partnership with the city's Autism Association, through awareness talks with businesspeople and lectures with psychologists about the inclusion of this population in the workplace, aiming at the social inclusion of this group and the transmission of important information to businesspeople who have autistic workers.

Regarding participation with Itaipu, President C highlighted a project carried out on waste collection, through an education program for the entity's members on the correct separation, collection, and distribution of waste, with the aim of highlighting the importance of waste separation inside and outside companies, so that it is disposed of correctly. In addition, the president highlighted an initiative carried out in conjunction with the Association of Parents and Friends of Exceptional Children (APAE), with financial assistance for events to raise funds for the organization.

Regarding all the actions carried out, President F emphasized the importance of passing on what is being done to the members of the board and the organization's members. For him, “all actions are taken to the board so that they are aware of what has been done, because it is important that they know and spread the word about the actions being taken,” enabling the commitment to and implementation of sustainability actions and practices to continue beyond TA.

President G and President F described the collection of food and materials for those left homeless by the floods in Rio Grande do Sul, in partnership with the fire department and the city government. Another social action reported by President F was developed at the city's Waste Pickers Association. According to the president, there was a fire in the warehouse where

the waste pickers sorted materials, burning the structure, conveyor belts, and presses. As a result, TA, in partnership with the city's cooperatives, planned to donate food baskets to families working at the association, seeking to partially offset the loss of income these workers suffered until the site was rebuilt.

President H also highlighted a sustainable practice focused on products and services, through work with individual microentrepreneurs (MEIs), providing guidance and assistance to these entrepreneurs in issuing invoices, SPC services, and other necessary matters. The aim is to help this sector, which, according to the president, is growing rapidly in the city and needs more attention, as it is not as well structured as larger companies with more employees.

A project linked to the Technical Chamber of Employability was mentioned by President A, involving environmental preservation actions. According to him, the Bird Park is a benchmark in the preservation of the region's fauna and flora and stands out as an example of species protection. In addition, he reported that funds had been obtained from France, made possible through partnerships with local entities, for the revitalization of the Moissique River, a watercourse that runs through the city and has recurring flooding problems. The initiative seeks to simultaneously resolve this conflict and promote the preservation of the river.

Furthermore, President A emphasized that both the POD and the Technical Chamber of Employability address specific issues related to sustainability and the environment. According to him, these entities, together with CACIOPAR, work in a coordinated and intensive manner to promote sustainability, strengthening each other. The issues discussed in these forums are then passed on to the TAs, which, in turn, are responsible for disseminating this information to their members, thus contributing to the economic, social, and environmental development of the Western Region of Paraná.

A social project that brings cinema to schools on Children's Day was developed by TA President D. The collection of electronic devices for proper disposal was developed by TA President A; and a lecture on ESG on Industry Day for entrepreneurs, with the aim of helping the industrial sector to develop internal sustainability, was developed by TA President F.

The topics covered in the network are consistent with the literature presented by Machado and Kuhl (2023). They emphasize that, in order to achieve actions related to SOI practices, these topics must be addressed in the social, environmental, and economic spheres, first in a theoretical manner, so that, later, members can jointly develop projects and activities.

With regard to participation with public authorities, President B emphasized that, even though this topic is discussed at these meetings, he realizes that practical and effective actions

are not yet being carried out in his municipality because, according to him, they involve monetary value, which often ends up not being the focus of small towns like his:

Some meetings I attended at City Hall also discussed this issue. I have often heard people talk about sustainability, and it is something that is being discussed a lot, but it has not yet been put into practice. I think something is still missing, mainly because it involves a lot of money and, in most cases, does not bring a return. In a small city like ours, with smaller commercial associations, it really ends up affecting the financial side a little bit (President B, 2024, our translation).

The vast majority of actions developed by network members, in partnership with entities, aim to resolve social problems in the community in which they operate, corroborating the literature of Bonassi and Lisboa (2003), given that associations are able to act as mediators between public authorities and community interests.

President F and President A, who are part of larger and more structured cities and TAs, reported that smaller and less structured TAs are often focused on providing their services and receiving monetary compensation to remain active, which can hinder the implementation of projects related to sustainability practices. It is up to larger TAs to find ways to assist and develop joint projects.

The literature by Bonassi and Lisboa (2003) shows that associations aim to promote economic activities in the region and carry out actions, projects, services, and processes that benefit the local community. However, for this to happen, interaction with different sectors of the economy is essential to intervene in demands for local, regional, and national development.

4.3.2 Common goals in networked knowledge sharing

Common goals within a network are important for actions and projects to be developed, since knowledge is only shared among members when they have collective interests, leading to the creation of joint goals for mutual benefit (Machado & Kuhl, 2023). Thus, interest in being part of a network arises when the group's goals are aligned with the individual's particular goal.

As described in item 4.2.2, the TAs that are part of the CACIOPAR network, and which are part of this study, have similarities in their mission, vision, and values, that is, they have similar objectives which, together, generate positive bonds and promote the pursuit of the

collective interest. This point also has an impact on CACIOPAR's mission and vision, mentioned in 4.1, based on “integrating, strengthening, and representing Trade Associations, aiming at the socioeconomic development of Western Paraná” and, as a vision, “being recognized by TAs and society as one of the main mobilizing and representative entities of the business class, driving sustainable development with each new administration.” In addition, CACIOPAR has objectives outlined in its Statute, focused mainly on representing its member TAs and the business community, establishing plans in conjunction with its network, advocating and collaborating with entities for the development of activities of regional, state, and national interest, as described in item 4.1.

Regarding CACIOPAR's mission, vision, values, and objectives, all eight presidents interviewed agreed that the coordination acts as a reference in its commitment, organization, and performance, guiding and providing all necessary support to the TAs that are part of the network and that both CACIOPAR's objectives and those of each TA are aligned and in agreement. According to President B, CACIOPAR and the TAs work together, creating a fundamental partnership for the proper development of both.

The values that guide a group are a basic condition for effective knowledge sharing. Interaction between members creates closeness and causes them to develop similar values and objectives, creating a contact that allows knowledge sharing within that context (Choo & Alvarenga, 2010). This concept is entirely linked to the similarity of the mission, vision, and values of the TAs interviewed.

President F, when asked about the agreement between the objectives of the TA and CACIOPAR, commented that he sees this partnership as a large system in which both are fundamental and necessary for knowledge sharing. He also notes that coordination is a model to be followed in the state:

We are under the umbrella of CACIOPAR, which is in turn under the umbrella of FACIAP, and so we have achieved, if we look at it, that the system does not exist on its own, we need to belong to something bigger. So, CACIOPAR is the oldest coordinating body in the state, it has the largest number of trade associations and is very likely the one that promotes the most actions and has the most representation. So, we understand that participation in these entities is fundamental, and not only in receiving, but also in providing subsidies for their development (President F, 2024, our translation).

President H and President A also commented that they understand that CACIOPAR's main goal is to strengthen TAs through partnerships for the commercialization of services to members, as they realize that the services offered by the entity work and generate a greater objective, which is to benefit and help the growth of the entire community in which they operate.

The portfolio of products and services was also cited by Presidents B, G, and H as an advantage for smaller TAs. According to them, all products and services offered originate from CACIOPAR, and whenever they encounter difficulties or lack information on a particular topic, CACIOPAR and larger TAs share their knowledge and experience, both theoretically, by presenting the topic, and practically, by presenting *case studies* and everyday situations. This exchange of knowledge takes place without major difficulties, precisely because all entities in the network have and are pursuing the same objectives.

According to Mannes and Beurer (2021), the capacity of a network directly affects its members, since networks with potential for innovation and good performance help their members achieve the network's objectives, as well as the objectives of each entity, given that the network acts as a manager of problems and proposed solutions. This point is described in the sharing of knowledge and experiences among network members.

In this context, President H reported that CACIOPAR acts as a school, being the most organized coordination body in Paraná and one of the best in Brazil. He added that “it has been well managed since its foundation and contributes enormously, especially to small associations, which are the ones that need support.”

Five presidents mentioned the joining of forces to share and receive information that generates knowledge and the varied portfolio of products and services offered by TAs. According to President B, CACIOPAR provides direction through the assistance and sense of strength and unity it conveys to the entities, emphasizing that “if we join forces for common goals, it is much easier to achieve something than if only my association tries, and CACIOPAR provides the support to make it happen.”

President B's statement is in line with the study by Hall et al. (2022), which highlights that collective interest within networks, through joint efforts, contributes significantly to the achievement of common goals and objectives. Such cooperation has a positive impact on both the quantity and quality of knowledge shared among network members.

Among the actions developed and reported, in accordance with common objectives, is CACIOPAR's fight, together with the TAs, for the duplication of BR in all the micro-regions it

covers, generating a movement to demand and take action so that these works are carried out and improve transportation conditions in western Paraná.

This alignment of purposes highlights the importance of cohesion between the entities in the network, an aspect reinforced by President D, who pointed out that without this harmony between the TAs and CACIOPAR's objectives, the certification in management with innovation would not have been achieved in 2024. This certification, awarded to TAs that met the parameters and best practices for management and process improvement, conferred gold, silver, or bronze seals, demonstrating that all this recognition is a direct result of the strong commitment and sharing of ideas within the network, focused on collective development.

The network therefore needs to develop a favorable environment, with space for knowledge sharing to take place, creating a facilitating environment for the creation of common goals among members (Hall et al., 2022; Urbancová & Vrabcová, 2023). In this regard, it is clear that the CACIOPAR network is on the right track. President F emphasized that because the network has common goals and fights for them, the entities gain visibility and achieve opportunities beyond their municipality through actions at the regional level. He also mentioned that this is the main objective of associationism: to create common agendas so that, through collective strength, they can negotiate and demand beneficial interventions for the region.

4.3.2.1 Common goals linked to SOI practices of network members

The TAs interviewed pointed out that CACIOPAR has a clear commitment to sustainability in its Statute, which is reflected in various practical actions aimed at the community and regional development. Among these actions, we highlight the encouragement of donations to people affected by floods in Rio Grande do Sul, the coordination for the implementation of public universities in the western region of Paraná, and the mobilization for the duplication of federal highways, with the aim of improving logistics conditions for both the population and the business and industrial sectors. This commitment is also evident in the choice of ESG as the central theme of the Congress held in 2024, in addition to the continuous search for sustainable solutions, such as Certificata and Paraná Energia, which enable the reduction of material waste and promote responsible environmental practices.

In order for the common goals linked to SOI practices within a network to be achieved, collaborative practices must be implemented and knowledge must be exploited by members.

This is because, for the development of SOI actions, an organizational change involving values, objectives, and goals is essential (Fiandrino et al., 2023).

In this context, an analysis of CACIOPAR's bylaws, available on its official website, reveals an alignment with these assumptions. The entity's objectives include projects aimed at defending fair wages, collective security, community development in the economic, social, sports, environmental, and cultural dimensions, as well as promoting solidarity, human dignity, and environmental preservation.

Furthermore, complementing this institutional perspective, only three TAs, represented by Presidents A, C, and F, stated that they have goals explicitly related to sustainability in their respective statutes or strategic maps. These objectives are in line with those of CACIOPAR, indicating a mutual commitment to creating social, environmental, and economic value. The four entities, therefore, demonstrate synergy by prioritizing actions aimed at lasting human development, the defense of rights, and the promotion of sustainable development.

This convergence of objectives reinforces the importance of active collaboration among network members. As Machado and Kuhl (2023) point out, for a group to achieve significant and sustainable results, there must be a collective commitment to promoting organizational change and innovating in products, services, or processes. The coordination between CACIOPAR and the aforementioned TAs exemplifies how this synergy can generate positive impacts for the entire region.

On this point, according to President A, in 2024, a five-year strategic plan was developed for his entity, citing as one of its objectives the guarantee of social, environmental, and economic sustainability, acting responsibly in these areas. Actions already taken in this regard include the exemption of monthly membership fees for MEIs and the creation of technical councils active in actions and projects, namely the Foz do Iguaçu Economic and Social Development Council (Codefoz), the technical council for security, the technical council for health, and the technical council for the environment. The creation of a technical council for economic development is currently in progress. Within these councils, the largest project developed was within the National Park, through actions for the care of the Atlantic Forest reserve.

President F mentioned that his entity seeks, above all, to modernize actions that bring positive results and are in line with sustainable practices. Among the modernizations that took place in 2024, he mentioned the elimination of physical invoices and tickets for events, migrating entirely to digital, reducing the use of paper and the movement of employees in the physical delivery of these documents.

In this regard, the use of solar panels for energy capture, the use of cisterns for rainwater collection, and the transition from plastic cups to biodegradable cups within the entity were achievements of both TA President A and President F.

According to President F, most of the achievements related to SOI practices originated from the ISO certification previously obtained by TA. Although the entity no longer maintains this certification, as it chose not to focus exclusively on the formal documentation required, the decision was strategic, in order to prioritize more effective actions aimed at the community. Even so, according to the president, the positive organizational behaviors implemented as a result of ISO continue to be practiced in the association's daily activities.

Regarding the Bylaws, President E and President G commented that they are in a period of adjustments for the end of 2024 and beginning of 2025, when objectives related to sustainable practices will be included. The other presidents stated that their entities seek to carry out actions and objectives related to sustainability, but that these are not properly recorded and mapped in their Statutes, dealing only with specific actions, as required.

4.3.2 Trust in sharing knowledge online

Trust within a sharing network involves both the security of sharing information and data from one's own organization with other members and the credibility attributed to the information received for application in the respective entities (Hall et al., 2022). All eight presidents interviewed stated that they fully trust the knowledge shared by both CACIOPAR leaders and the presidents of other TAs, and feel secure in sharing information from their own associations with the network.

Among the factors that sustain this trust, President D highlighted that, as she is new to the position, she trusts the experience of the other members and the content conveyed at the meetings, as she perceives the network as solid and well-structured. President H and President E also emphasized that whenever a topic is discussed at meetings, there is theoretical support through publications, legal regulations, or even the participation of external experts. This technical foundation contributes to increasing the credibility of the information shared within the group.

The history of the CACIOPAR network was also raised as a factor of trust in the information shared. CACIOPAR members are always at the forefront of issues of collective interest to TAs, representing the class in various demands, such as the duplication of highways,

letters to the Paraná Energy Company (Copel) seeking improvements in the electricity grid, in order to reduce power fluctuations, toll charges, and the demarcation of indigenous lands in 2024, according to news shared on the entity's website and in reports from the presidents.

In the same way that they are at the forefront of the region's demands and seek to bring the TAs together to fight, they also play the role of guiding the internal demands of the TAs, whether in difficulties with the management of products, services, and processes or specific demands of each region, with a direct member of CACIOPAR acting as an assistant to the entities and, similarly to what occurs in the meetings, also conveying the necessary trust to the presidents for the resolution of the requested demands.

At this point, it is clear that the network's capacity is a relevant factor in building trust among its members, which, in the view of network members, makes CACIOPAR a trusted network. Strong networks with a history of achievements allow members to develop a bond of trust to manage risks and problems in their own organizations (Mannes & Beuren, 2021).

A concrete example of this trust was highlighted by President F, who recounted CACIOPAR's role in the indigenous land demarcation agenda. For this issue, the entity mobilized specialized professionals, such as experts in reports, lawyers, and municipal representatives, who worked on the preparation of an anthropological report to support the proposed time frame. This action generated total trust in the TAs, demonstrating that the issue was being handled in a technical manner and monitored collectively by the network.

This episode exemplifies what Choo and Alvarenga (2010) highlight as an important factor facilitating knowledge sharing: the trust that allows tacit knowledge to be transformed into explicit knowledge. In other words, when members feel secure in sharing their personal knowledge, this knowledge can be collectively passed on, incorporated into the network's agenda, and converted into concrete actions. In addition, this trust strengthens the credibility of the information, as the topics discussed are supported by experts and theoretical foundations, as pointed out by other presidents interviewed.

Another relevant point in the trust category was volunteer work, raised by President B. As it is an associative system, all representatives of the network work on a voluntary basis, ensuring that the fight for common goals is based on the will of each member. According to President B:

I see that they are people just like me who are there fighting for common goals. No one is there for a paycheck; we are there to make things happen because we want to see everyone succeed. So I think that's what makes us so reliable: no one is there to gain

anything personally. Everyone is there with the goal of fighting for the common good. So I think that builds greater trust (President B, 2024, our translation).

He emphasized that all TAs share weaknesses and problems, especially in micro-region meetings and deliberative council meetings, which are exclusively for presidents. In these meetings, he noted that the entities are part of a network to seek solutions to common problems, without mistrust or superiority toward one another.

The category of trust, in this sense, has two divisions: trust based on benevolence, arising from a belief in the integrity of group members, and trust based on a belief in the ability of members to share knowledge that is relevant and important to members (Hall et al., 2022). Both forms of trust were identified through the respondents' answers, understanding that members have the ability and integrity to pass on their knowledge.

President F agreed that the deliberative council meetings brought about a closer connection between CACIOPAR leaders and TA presidents, fostering greater proximity and depth in the issues addressed, as these were closed meetings, which is a very positive point in terms of trust in the knowledge shared within the network. On the other hand, he also reported that, in certain situations, he did not feel that all the presidents in the network were fully committed to sharing strategic issues and business models, which, in his view, is an area for improvement in order to increase trust among members.

President H pointed out that, after the deliberative council meetings, she felt more comfortable asking for help from other TAs that do not belong to her micro-region, thanks to the trust that the network has built, bringing solutions from other TAs to her own.

With regard to sustainability issues that have been shared at network meetings and subsequently adopted as a model by other TAs, all the presidents interviewed said they could not recall any specific cases. President A, however, reiterated the importance of the ESG Congress held in 2024, highlighting that the cases presented, the lectures, and the knowledge shared during the event, especially about Certificata and Paraná Energia products, contributed significantly to making his understanding of the topic clearer and more structured. Nevertheless, he emphasized that, to date, no practical action has been effectively implemented in his TA based on this content.

However, when asked about their confidence in future sustainability-related agendas, all presidents agreed that the CACIOPAR network is solid and that all the actions it develops have a sustainability bias and, if the network brings any issue or activity to the network members, they are confident in carrying it out.

In this sense, President E pointed out that, despite this mutual trust, it is common for each TA to need to adapt actions according to their local reality. According to him, in all meetings, various topics and solutions are shared, and his TA always manages to absorb some learning. However, due to differences in size between associations, many of these actions need to be adjusted to their structure. Thus, the exchange of experiences and the adoption of solutions becomes more effective when it occurs between TAs of similar sizes and contexts, which facilitates implementation and ensures greater practical applicability of the ideas discussed in the network.

This view was also shared by President A, who said he had greater confidence in seeking solutions with larger TAs, given the similarity and reality of the municipality. On the other hand, his contact with smaller TAs is based precisely on assistance through the transfer of information, which is also based on trust in sharing knowledge, making it clear that there is trust on both sides, in the act of sharing and in the act of acquiring knowledge.

The search for contact with other entities within a group reflects a strong closeness and trust between members. One of the factors that favor this connection is the offer of similar products and services, which, according to Hallstedt et al. (2013), facilitates the sharing of support tools among themselves, promoting the creation of value (Neutzling et al., 2018).

In addition, the presidents interviewed stated that they felt a greater sense of trust within the deliberative council meetings, as they were exclusively for presidents and members of CACIOPAR, than in business meetings and micro-region meetings. These meetings play an important role in presenting problems, identifying similarities, and developing bonds of trust and friendship among the presidents of the network.

4.3.3 Communication channels for knowledge sharing in networks

Communication channels are the means by which members of a network interact and share information. They can be face-to-face or virtual, and involve the production, circulation, and storage of documents. These channels play a fundamental role in the dissemination of knowledge within the network (Scarabelli et al., 2022; Tura & Ojanen, 2022).

In the case of the CACIOPAR network, this communication dynamic mainly takes place through meetings. Business and deliberative council meetings are usually held in person, with the pandemic being the only period in which they took place virtually.

The meetings of the four micro-regions, organized by the corresponding TAs, are more flexible, taking place both in person and online, as reported by the presidents interviewed. CACIOPAR also offers various workshops and training courses to TAs, with explanations about new products, services, or processes, management and business topics, among others.

These meetings take place online and are open to employees and the board of directors of each entity. Furthermore, if any urgent matter involving the network arises, which, according to three presidents, occurred once in 2024, it is dealt with online, using the Zoom and Google Meet platforms.

Regarding the ease of sharing knowledge through the communication channels used, President F reported that he perceives the face-to-face meeting model as more effective, as it provides close contact between network members, making it easier to talk and discuss the agenda.

During the pandemic, we did some online, but now they are 100% in person. Both CACIOPAR and Micro. CACIOPAR, sometimes when it is a matter of some urgency, which is a very specific issue, it ends up happening online, but the vast majority are in person precisely to create this relationship (President F, 2024, our translation).

President D and President E agreed that face-to-face meetings are more detailed and that knowledge is absorbed and shared more intensively. They see the meetings as an excellent opportunity for networking and exchanging questions and activities carried out by network members, so that even if questions are not answered at that moment, doors are opened for future contacts through phone calls and visits to other entities in the network.

They are in person, because she really focuses on the social aspect of being together, and there is one meeting per month, so there are 12 meetings per year. Despite being in western Paraná, we, in the west as a whole, have a single coordination office, which is what strengthens us and allows us to be a more active and proactive coordination office within FACIAP (President D, 2024, our translation).

The communication channels used by the network, whether in physical, virtual, or combined spaces, need to be conducive to knowledge sharing. In other words, the chosen space must allow for creativity and interaction among members to develop easily, creating a culture

within the network that is focused on communication (Schraiber et al., 2021). In this sense, face-to-face meetings are seen as more suitable spaces for knowledge sharing.

This contact in the search for knowledge and solutions via networking was reported by President H. According to her, some cases presented at face-to-face meetings generate interest in taking them to her entity, making informal conversations during coffee breaks and after the meeting valuable for bringing innovations that have already been tested and proven successful in other entities.

On the other hand, President G pointed out that, due to the rush of everyday life and distance, he is unable to attend most face-to-face meetings and that if these meetings were held online, it would facilitate the participation of his TA. President D similarly emphasized that online workshops and training are valuable because they enable several TA employees to participate, since CACIOPAR's in-person business meetings, being held in other cities, prevent the entire team and management from traveling.

Lack of time and meeting locations within a sharing network are pointed out as factors of friction, inhibiting knowledge sharing among members (Busnello & Vieira, 2021), a point highlighted by President G. CACIOPAR's in-person meetings take place in various locations in western Paraná.

The entity's headquarters are located in the city of Cascavel, where meetings often take place. However, throughout the year, there are TAs that end up lending their auditoriums for these meetings to take place in their cities. However, smaller TAs do not have their own adequate structure to host these meetings, making it easier for TAs belonging to larger cities to host the meetings.

This alternation in meeting locations contributes to strengthening the bonds between different TAs throughout the year. This practice corroborates the literature of Hall et al. (2022), which highlights that strengthening ties between partners in the business context improves the management of relationship channels, enhances the collective performance of the group, and, through the strategic use of these channels, drives internal processes and expands the organizational capacity of the entities involved.

All network meetings are recorded in minutes and, if necessary, recorded. These minutes are signed by the network members present at each meeting and stored by CACIOPAR officials at the entity's headquarters.

Another communication channel used by all presidents and CACIOPAR is WhatsApp groups. Currently, the network has WhatsApp groups for TAs, such as presidents and other members of each entity as necessary, and an exclusive group for the presidents of each entity,

with the aim of disseminating information, news, and sharing various questions, as well as the issues discussed in face-to-face meetings, with the aim of sharing the issues discussed with TA members who were unable to attend that meeting. Issues are also frequently sent by email. This communication channel is extremely suitable for networks that wish to maintain close contact between their members, regardless of time and location, as it allows knowledge to be shared in real time and facilitates the exchange of information that is crucial for the smooth running of the network (Hall et al., 2022).

Other forms of knowledge sharing among network members occur through phone calls, technical visits to TAs, and private meetings with specific sectors of each TA, in the case of employee exchanges or the marketing of new services. President D reported that she regularly holds private meetings with nearby TAs, especially when demands related to systems, products, services, or processes arise. According to her, it is more practical and effective to talk directly with the person responsible for the sector in which there are questions, rather than addressing these issues at general network meetings.

With regard to ways of storing information from each TA belonging to the network, many of them produce manuals on products and services and internal processes for each sector, which are stored in the entity's own database, with the aim of facilitating the presentation of the subject at possible CACIOPAR meetings, through *case studies*, and in the hiring and training of new employees. These forms of storage enable the knowledge acquired by a particular group to be recorded and shared among all members of the entity (Nonaka & Konno, 1998).

In the context of SOI practices, all interviewees demonstrated familiarity with face-to-face meetings, in which sustainability-related topics are addressed, both theoretically and through the presentation of case studies. In online meetings, workshops, and training sessions, the topic was mainly mentioned in reference to the ESG postgraduate course offered by CACIOPAR in partnership with an educational institution. According to President D, this initiative represents an important step in consolidating the topic within the network.

Yes, these topics are always addressed. Today, with the advancement of the digital world, all kinds of information are processed, not only the issue of sustainability, but there is always an appeal in this regard. I can summarize it as something that cuts across all the actions we develop, that is, across all the topics we discuss within CACIOPAR (President D, 2024, our translation).

With regard to information storage, President F said that all actions and activities carried out by the entity, whether related to SOI practices or not, are stored on the entity's server, as a result of the certification by Great Place to Work (GPTW) and actions during 2024, as they are presented at board meetings and in the form of *case studies* on the network, when requested.

In addition, four presidents emphasized that, on the CACIOPAR website and on Instagram, the entity shares sustainability-related activities carried out throughout the year, such as the topics discussed at the ESG Congress, Associativism Week, and products and services such as Certificata and Paraná Energias, which are the most used and viewed online communication channels by network members.

4.3.3.1 Communication channels for disseminating the activities of network members

The TAs that are part of the CACIOPAR network use digital media to promote their products and services, actions, projects, and other relevant information, with the aim of disseminating the activities carried out by the association system to its members and the community in which they operate. Thus, through interviews and searches on the TAs' digital communication channels, it was possible to map the channels used by each entity, as well as the activities disseminated in 2024.

According to Darroch (2005), the use of technological means within a group facilitates knowledge sharing. Communication via written documents, whether physical or virtual, becomes more effective in disseminating this information.

Based on the search conducted, it was found that the communication channels used by all TAs and CACIOPAR are concentrated in WhatsApp groups, social networks such as Instagram and Facebook, advertisements in newspapers and online news outlets in the city, emails to members, and business meetings with board members and associates. Table 5 shows the channels used to publicize activities.

Table 5 - Channels for publicizing activities

Communication channels used to publicize activities		C A C I O P A R	C o r b é l i a	F o z d o I g u a ç u	G u a r a n i a ç u	M a r e c h a l C . R o n d o n	M a t e l â n d i a	S ã o J . d a s P a l m e i r a s	T r ê s B . D o P a r a n á	T u p ã s s i
1	Entity app					X				
2	WhatsApp	X	X	X	X	X	X	X	X	X
3	Instagram	X	X	X	X	X	X	X	X	X
4	Facebook	X	X	X		X		X	X	
5	Entity website	X	X	X	X	X	X			X
6	City newspapers and news companies	X	X	X	X	X	X	X	X	X
7	Email	X	X	X	X	X	X	X	X	X
8	Meetings with entity members	X	X	X	X	X	X	X	X	X
Total		7	7	7	6	8	6	6	6	6

Source: Research data (2024).

Among the channels listed, WhatsApp, Instagram, Facebook, and local newspapers and news outlets are the most used by the organization to publicize its activities, as they believe that information reaches members more quickly and reaches a larger audience.

Social media, whether formal or informal, is an effective means of sharing knowledge. It allows activities to reach audiences beyond the limits of the network itself, generating new ideas in other groups and enabling members to acquire knowledge and develop through these communication channels (Hall et al., 2022).

This statement by the authors is also reflected in the statements made by the presidents. President C emphasized that CACIOPAR frequently shares posts and artwork in WhatsApp groups so that TAs can disseminate them on their social networks and via email, generating a trend toward greater dissemination in this medium.

According to President D, TA meetings with the entity's members are the most effective means of disseminating the activities carried out and discussing upcoming activities, as they involve the members of the board and the entity's employees.

According to President B, the website of each entity is not highly valued and has little access by members and the community, meaning that it does not receive much attention and

usually ends up becoming outdated, with actions being publicized more frequently in newspapers and online news outlets in the city. The organization's app is only used by TA in Marechal Cândido Rondon, mainly for registering resumes for job openings and maintaining a contact list of members, with no direct connection to publicizing activities carried out during the year.

Among the SOI-related practices disclosed in the communication channels used by network members, three presidents highlighted actions carried out during Associative Week, the promotion of the Certificata platform and the Paraná Energia program, services that aim, respectively, to reduce paper use and encourage the consumption of renewable energy sources. Photos of these actions were shared on CACIOPAR's WhatsApp group so that each TA could disseminate them on their own social networks and websites.

Associative Week, mentioned by the presidents, takes place in April with the aim of promoting Business Associativism in the region. During this period, CACIOPAR creates artwork and posts for social media and shares them in the WhatsApp groups of its member TAs, so that they can also share them on their social media and websites. In addition, CACIOPAR encourages TAs to develop initiatives for their members and the community, enabling them to demonstrate, through their actions, the culture of association in western Paraná.

During Associative Week 2024, three TAs carried out actions focused on SOI practices, which were publicized on the CACIOPAR website and Instagram profile. The initiatives included collecting food for a senior citizens' association, distributing and planting tree seedlings throughout the city, and implementing a spring restoration project.

To complement the statements on SOI practices developed by the presidents interviewed, a search was conducted on Instagram and Facebook and on the news tab of the websites of both the TAs and CACIOPAR to map the activities related to SOI practices undertaken during 2024 and disclosed in these electronic media.

Based on the research conducted, it was possible to identify that CACIOPAR usually discloses some actions, projects, products, and services related to SOI practices carried out by TAs on its news tab on the website. On the other hand, the TAs surveyed also disclose some of the activities carried out by CACIOPAR on social media and on the news tab on their websites. Furthermore, it was found that the TAs in Foz do Iguaçu and Marechal Cândido Rondon disclose and have a greater number of actions and projects independently, that is, developed outside the network. Table 6 presents the activities developed.

Table 6 - Activities promoted

Activities promoted on digital channels in 2024		CACIOPAR	Corbélia	Foz de Iguaçu	Guaraní	Marçhal C. Rondon	Mateelândia	São João das Palmeiras	Três Barras	Tupãssi
1	Actions during Pink October (lectures, talks, and cash donations to the Cancer Hospital)	X		X	X	X	X			X
2	Actions during Blue November (lecture)			X						
3	Collection of food and hygiene products for families affected by flooding in Rio Grande do Sul	X		X		X	X			
4	Collection of food for needy families in the city			X						
5	Food and hygiene product drive for a senior citizens' association (Association Week)						X			
6	Toy drive, popcorn distribution, and a day of free games in celebration of Children's Day			X						
7	Plastic-free July campaign (reducing consumption of plastic bags and other plastics and promoting the use of eco-bags)			X						
8	Blood donation campaign for hospitals			X						
9	CACIOPAR ESG Congress (Practices and case studies)	X	X	X		X	X			X
10	Achievement of the Great Place to Work (GPTW) Seal	X				X				
11	Presentation of plaques recognizing the best companies in the city in 2024		X			X				X
12	Sustainability Center: conversation with members about zero waste, safe food, and sustainable and conscious fashion			X						
13	Sustainability Center: internal discussion to seek practices and opportunities to make the entity's events eco-friendly and socially responsible			X						
14	Sustainability Center: lecture to members on ESG, intelligent environmental management, case studies, and environmental compliance			X						
15	Environmental consulting center: mentoring for companies that want to become more sustainable			X						
16	Employability workshop for entrepreneurs (challenges, young audience, and labor shortage)	X		X		X				
17	PEA – Internship program to help young people get their first job									X
18	Certificata services (security and reduction of printed documents)	X	X	X		X	X	X		
19	Paraná Energias services (consumption of renewable energy sources)	X				X				
20	Prize draws for the community on special dates (Mother's Day, Father's Day, and Christmas)		X	X	X	X	X	X	X	X

21	Free training (Emotional management and business protection through technology)	X								
Total practices promoted		7	4	15	2	10	6	2	1	5

Source: Research data (2024).

Among the actions, projects, products, and services found and disseminated, nine of them have incentives or originate from the CACIOPAR network. That is, they are actions that were commented on and encouraged or brought about by the network, namely: actions during Pink October, with lectures and talks with women in each city to encourage breast cancer prevention, as well as cash donations to the Uopeccan Hospital in the city of Cascavel, mentioned by President F; collection of food and hygiene products for families affected by the floods in Rio Grande do Sul; actions during Associativism Week; ESG Congress promoted by CACIOPAR; employability workshop for entrepreneurs; Certificata services; Paraná Energia services; the Internship Program (PEA) to help young people get their first job; and a prize draw and shopping vouchers for people who shop at local businesses.

These actions and services are developed through the network and encouraged by CACIOPAR, but there is no obligation for TAs to carry them out in their cities and publicize them through their communication channels. In addition to the network's actions and services, four TAs develop and publicize their own actions and projects related to SOI practices, namely the Corbélia Commercial and Industrial Association (ACICORB), the Commercial and Business Association of Foz do Iguaçu (ACIFI), the Commercial and Business Association of Marechal Cândido Rondon (ACIMACAR), and the Commercial and Industrial Association of Tupãssi (ACIATU), totaling 12 outside the CACIOPAR network.

ACIATU, ACICORB, and ACIMACAR annually present plaques of recognition to the best companies in the city through a business event. The selection is made by the city's community and companies through anonymous voting, in which, within each category created, a company is chosen as the best in that category, with the aim of recognizing companies and encouraging purchases within local commerce for the development of the region.

In addition to recognizing the best companies in the city, ACIMACAR carried out two other initiatives in 2024: providing free training to the community on topics related to sustainability, emotional management, and protecting companies through technology. Other courses related to sales, marketing, human resources, and finance were also developed free of charge, with the aim of empowering the community.

Finally, ACIFI carried out nine independent actions related to SOI practices in 2024, many of which originated from its sustainability and environmental consulting centers,

composed of member companies seeking to grow in a sustainable manner. Among the actions carried out are a lecture in honor of Blue November on the fight against prostate cancer, food drives for needy families in the city, toy drives and free games in honor of Children's Day, the July Without Plastic campaign, with the goal of reducing plastic consumption and encouraging the use of eco-bags, and a blood donation campaign for hospitals in the city.

In turn, actions specifically aimed at sustainability and environmental consulting centers included dialogues with members on topics such as zero waste, safe food, and sustainable and conscious fashion. Internal actions were also carried out among the members of the centers, with meetings aimed at identifying opportunities to make events more *eco-friendly* and socially responsible. In addition, a lecture on ESG and smart environmental management was held, cases of environmental regularization were presented, and mentoring was offered to companies interested in becoming more sustainable.

All actions carried out and disseminated by the TAs that are not directly linked to CACIOPAR network initiatives are organized through meetings with the board members of each entity and through partnerships with other local organizations, such as cooperatives, industries, city halls, credit institutions, and non-governmental organizations. As reported by Presidents F and A, the larger TAs have the structure, autonomy, and responsibility to promote sustainability-related issues among their members, directors, and the community. Both highlighted that, with the support of other entities, it is possible to develop more comprehensive actions and achieve positive results.

President F pointed out that associationism needs to be developed through actions and projects and that larger TAs have a duty to assist smaller TAs in whatever way necessary to ensure growth, according to him:

Associativism cannot be a line written on paper to make it sound good. We are associativists, we work for the movement. It needs to be something practiced on a daily basis, which is why we need to reach out to those who are on our side. In associativism, there is no strong or weak, there is only us. If we work collectively, the result will certainly be better for everyone, because together we are stronger (President F, 2024, our translation).

4.3.4 Hierarchy and leadership in networked knowledge sharing

The hierarchy and leadership category addresses how network leaders share their knowledge with other members, encouraging and motivating members to share their knowledge and develop themselves (Srivastava et al., 2006; Van Houten, 2023). In the network in question, leadership positions in the hierarchy are composed of CACIOPAR members, formed by a president, two vice presidents, two secretaries, two treasurers, 24 board members, four directors, the latter four being the directors of each of the micro-regions, three members of the fiscal council, a president of the deliberative council, a vice president of the deliberative council, and a secretary of the deliberative council.

According to the eight presidents interviewed, the leaders perform their roles within the hierarchy with excellence, by developing the meeting schedule, the agenda for each meeting, organizing the speeches between the TAs, and assisting with requests raised by the presidents. In this vein, the role of a leader is precisely to share their knowledge on the subject at hand, ensuring that this knowledge is understood by all members in an effective manner (Li et al., 2023).

In line with President E, much of the information and *case studies* shared by CACIOPAR leaders were adapted to the reality of their TA. One example cited was the implementation of prize draws for the community that shops locally, promoted through campaigns on commemorative dates. According to him, CACIOPAR provided support to the TA at all stages, from planning to execution of the campaign.

Regarding the topics covered in the meetings, President B said that, in general, they are theoretical approaches accompanied by examples or *cases* from companies in the region. However, he could not recall any more significant actions, such as joint initiatives with other entities or those conducted directly by the network leaders. President G highlighted the discussion on employability, an issue he raised as a relevant social problem. According to his report, issues such as labor shortages, the profile of the current generation, and the need for companies to adapt to this new professional profile in the market were addressed.

I have used information from many cases, always adapting it to our reality, to our municipality, but I have taken a lot of cases, even for our end-of-year promotion, I took a little from each city that worked and adapted it for us. We distributed almost 300 prizes. This is great because then the members see it too. Sometimes we do so much that

the members don't see it, and when we show them something like this, they think, “Wow, I'm a member and I'm getting something back” (President E, 2024, our translation).

Outside of business meetings, the deliberative council, and micro-regions, leaders are also present. All presidents commented that, at some point during their term, they needed to contact a CACIOPAR member regarding a request, and whenever this happened, they were able to easily arrange a conversation or meeting, and their requests were met.

These aspects show that a leader must act in three ways: as a designer, creating policies, strategies, and systems within the entity, guiding their leaders; as an administrator, reporting their visions and stories to their leaders to create joint ideas; and as a teacher, helping members and guiding them to achieve their individual results and the results of the group (Senge, 1990). On this topic, President C stated that he also made several requests to the president of his micro-region, as he is closer to him. In the same way that the CACIOPAR directors are present, the president of his micro-region also assists with his requests and, if he does not have the power to do so, refers them to a direct member of CACIOPAR.

With regard to employability, President G reported that, after a meeting, he asked the executive secretary of CACIOPAR to send the files and research on the profile of the professionals discussed, with the aim of addressing this issue internally at a meeting with the directors of his entity. The request was promptly met by the leaders. In addition, he mentioned that he also asked the CACIOPAR secretary to mediate contact with the president of another TA to address financial issues, as he was reorganizing his entity's accounting and system. This request was also granted, allowing the problem to be resolved.

The behavior of sharing among members of a group is directly associated with the role of leadership. Leaders who readily share their knowledge and motivate their subordinates tend to encourage other members to take on leadership roles, increasing trust and results (Van Houten, 2023). Thus, knowledge sharing among CACIOPAR network members reflects the ease with which these members communicate and exchange information directly with the entity's leadership.

With an active leadership role, CACIOPAR encourages TA presidents and executives to take a leading role in meetings, conferences, and other gatherings promoted by the network. In this way, they are expected to share their problems, achievements, and relevant topics for discussion, allowing the network to meet the demands of its members and motivate them to maintain active and engaged participation.

The members of a group represent an essential source of information for entities, which means that most of the search for activities and solutions for the network is carried out internally, by the members themselves, without the need for external assistance. This highlights the importance of the place of speech and leadership for effective knowledge sharing (Srivastava et al., 2006; Urbancová & Vrabcová, 2023).

As a way to encourage the active participation of presidents in response to the network's demands, two leaders reported that CACIOPAR implemented a leadership training program, called PDLA, aimed at presidents, vice presidents, and board members of each TA who are part of the presidential line of succession. The program consisted of four online meetings and one in-person meeting, culminating in the awarding of certificates. Throughout the training, topics such as the role of the manager in a trade association, the importance of associationism, as well as unity and collective commitment in the pursuit of results were discussed.

Topics related to internal management and leadership were also addressed throughout the program. As discussed by President H, the importance of leadership that knows how to listen and is open to dialogue with subordinates was discussed, as an authoritarian or toxic attitude tends to alienate members of the entity. For her, building positive leadership throughout the network is essential so that activities are not compromised. In addition, the succession structure for the CACIOPAR presidency was presented, highlighted as a well-organized example that ensures the continuity of the actions and projects developed by the network.

CACIOPAR has a very well-established model, and even internally, we always say that the issue of succession is very important in any entity. And within CACIOPAR there is also a succession model, precisely because of this. So that what has been built over time and what has been elected as a priority is not lost. So, for the next administration, which begins at the start of next year, we have already decided who will be the current president, who will be the first vice president, who will be the second vice president, and who will be the president of the deliberative council. Why? So that all the actions that have been taken and disseminated over time are shared and people can follow this path alongside the current president, and so that the new administration does not have to start from scratch building a new agenda. (President F, 2024, our translation).

This search for training and topics developed directly with directors, mentors, and colleagues within the organization itself confirms the findings of Nonaka and Konno (1998),

highlighting how this interaction stimulates effective knowledge sharing. According to the authors, it is up to leaders not only to manage knowledge, but also to promote it, recognizing that it must be constantly nurtured and improved. Thus, it is essential to create favorable conditions for this process to occur continuously and strategically.

In addition, three other forms of motivation developed by the CACIOPAR network aimed at TAs are: the *Outstanding President* award, the *Outstanding Executive* award, and the *TA Compliance Certification*. These initiatives, mentioned by all eight presidents interviewed, were highlighted as important strategies for valuing members who demonstrate a real commitment to the association system.

The *Presidente Destaque* and *Executivo Destaque* (Outstanding President and Outstanding Executive Officer, respectively) awards are given based on nominations from the TAs. The criteria for selecting the winners include participation in meetings, compliance with the TA management plan, actions taken within the municipality, growth in the number of members, among other requirements. In 2024, the awards, in the form of certificates, were presented during the CACIOPAR Congress, at which President Paulo Adriano Grenzel, of the Commercial and Business Association of Marechal Cândido Rondon, was chosen as *Presidente Destaque*, and executive Thais Cristina da Costa, of the Commercial and Business Association of Foz do Iguaçu, was chosen as *Executivo Destaque*.

In this context, complementing these recognition strategies, the TA Certification of Conformity evaluates various aspects of the entities' management and performance, such as updating their statutes, defining their mission, vision, and values, the existence of a suggestion box for members, innovations and actions carried out during the year, services offered, headquarters structure, management quality, and number of training courses promoted. Based on these criteria, each TA is awarded a gold, silver, or bronze seal.

According to the presidents interviewed, this award is given to recognize the president, the executive, and the TAs who are truly contributing and delivering beyond their described duties, going above and beyond their obligations. The awards cannot be repeated, i.e., it is not possible to win twice in a row. This is a means used by CACIOPAR to motivate network members every year to not only participate and meet the requirements, but also to give of themselves to the association system and perform their duties with excellence and commitment.

Another point related to CACIOPAR's leadership and hierarchy was highlighted by President F, who mentioned that the entity adopts an established model of succession for the positions of president and vice president. In order for a member to assume the presidency, they must have previously served on the board and held the position of vice president. This structure

focuses on ensuring that CACIOPAR and its leaders maintain a consistent trajectory, with long-term projects and continuous management. This model is even cited as a reference for TAs to adopt similar planned succession practices.

Regarding issues related to SOI practices, the presidents reported that leaders address theoretical concepts of sustainability, present case studies of sustainable companies, and seek to encourage TAs to take action within the community and incorporate sustainability internally in their day-to-day activities. President H also mentioned, once again, the postgraduate course related to ESG, which was shared by CACIOPAR and, according to her, is seen as the first step towards sustainability being treated with greater emphasis in the CACIOPAR network, with joint actions and projects involving all members of the network.

Thus, it is understood that the role of social exchange directly affects knowledge sharing. Voluntary actions by individuals stem from the motivation and return that their leaders present, increasing their act of sharing knowledge to the same extent that they perceive that their members improve their own work (Van Houten, 2023). In this regard, it is noted that the leaders of the CaciopaR network seek to motivate and direct TAs to carry out actions and projects within their regions, as well as provide the necessary support.

4.3.5 Analysis of network knowledge-sharing practices for the development of SOI practices

Based on the results presented, we sought to compare them with the literature discussed in the theoretical framework, with the aim of identifying whether the categories analyzed correspond to the reality observed in the TAs participating in this study.

4.3.5.1 Category: Participation

Based on their participation category, most of the presidents interviewed are actively involved in the CACIOPAR network, as well as in partnerships with the city government and other entities. In the CACIOPAR network, issues related to practices and SOI within the year 2024 were: ESG congress, internship program, products and services from Certificata and Paraná Energias, resolutions on issues related to tolls and the demarcation of indigenous lands, and assistance among network members for problem solving.

Outside the network, the topics covered and activities carried out were: assistance with job vacancies in partnership with the city government, lectures in partnership with the Autism

Association, a project on waste collection and disposal with Itaipu, financial assistance for APAE events, food collection for flood victims in Rio Grande do Sul in partnership with the fire department, assistance to MEIs, preservation of the city's fauna and flora in partnership with technical councils, movies in schools, lectures on ESG to entrepreneurs, and proper collection and disposal of electronic devices.

The category of participation for knowledge sharing in the network was cited in studies by Penttinen and Frösén (2022), Scarabelli et al. (2022), Yu et al. (2023), and Srivastava et al. (2006). According to the authors' research and results, the participation of an entity within an organization, group, or network showed positive results in knowledge sharing and acquisition. This result was confirmed in the interviews conducted—all presidents reported that they acquire knowledge on the network and pass it on when necessary.

The participation category is also in line with the results of the study by Machado and Kuhl (2023), who emphasize that organizations, through their actions and partnerships, become drivers of sustainability. Similarly, the study by Özlem (2022) shows that the development of more effective and comprehensive actions is intensified by active participation in councils and groups with other entities.

Furthermore, the results of knowledge improvement and growth of the Association, cited by all presidents, are in line with the study by Hillman et al. (2018) and Özlem (2022), who argue that the intense participation of members within a network has the potential to develop individual knowledge and activities that are lasting for members.

For Bonassi and Lisboa (2003), members of a network seek to establish partnerships, mainly with the government, to develop activities with social purposes, a fact confirmed by the actions and projects mentioned by the presidents interviewed, in partnerships made with both the city hall and other entities in the Western Region of Paraná.

The network seeks to meet demands by discussing topics at its meetings, within the economic, social, and environmental spheres, for the development of practices linked to SOI (Machado & Kuhl, 2023). From this perspective, participation within and outside the network has led to the development of actions, products, services, and organizational change linked to sustainability, confirming the author's theory.

Furthermore, the activities developed by the associations fall within the field of social responsibility with the community, in the context of the associative system, as pointed out by Campos Junges and Campos (2022). These actions involve aspects such as support for local infrastructure, promotion of sustainable growth, strengthening of employability, active participation in the community for the development and implementation of projects, as well as

the establishment of relationships with local organizations and the implementation of policies aimed at social projects.

Thus, based on the results found and the theory presented, it can be concluded that the category of participation, in the sharing of knowledge in the network of the present study, contributes to the development of SOI practices.

4.3.5.2 Category: Common goals

According to the results presented, it was found that the network formed by CACIOPAR works towards common goals, promoting knowledge sharing among its members to generate positive results for the entire network, such as improvements in highways and the marketing of products and services by TAs. Thus, its objectives are based on promoting the development of its members through these activities.

All members interviewed agree with the network's objectives, as they understand that this coordination body has a history of fighting for the interests of the business class and is a reference within the state of Paraná.

The similarity between the mission, vision, and values of the entities is in line with the theme addressed by Choo and Alvarenga (2010) and Hall et al. (2022), portraying that agreement within the values of a group and a favorable environment help in the interaction and construction of a beneficial relationship for knowledge sharing.

The shared goals, objectives, and vision were addressed by Hall et al. (2022), who identified that, in the context of networks, common goals and visions are associated with higher quality and quantity of results, acting in the collective interest for mutual benefit. In addition, Urbancová and Vrabcová (2023) and Mannes and Beuren (2021) observed that entities that promote innovation are those that collaborate closely with other members, establishing joint goals and objectives. In this sense, it was found that the network has shared objectives and develops actions, even if, at certain times, these actions are carried out individually, always with the purpose of achieving the network's objectives.

The study by Machado and Kuhl (2023) sought to understand how collaboration between companies promotes the development of innovation and sustainability. The authors distinguished that companies tend to collaborate to overcome disadvantages and acquire knowledge. In addition, they highlighted that the social dimension is closely linked to business

collaboration, as collective involvement in generating actions with common goals in this dimension is fundamental to driving innovation.

Finally, Fiandrino et al. (2023) concluded in their study that strategies and activities related to SOI practices are developed from a shared vision within a group. With a common mindset, members set goals and define strategies for decision-making.

With regard to common goals related to SOI practices, CACIOPAR has, in its Statute, as do other TAs, that sustainability must be addressed, and this is reflected in actions for the community, such as encouraging donations to people affected by the floods in Rio Grande do Sul, the search to bring public universities to the Western Region and the fight for the duplication of the BR highway to facilitate transportation for the community and the business and industrial sectors, the ESG theme developed within its Congress in 2024, and the search for products and services that reduce the disposal of materials in the environment, such as Certificata and Paraná Energia.

Thus, based on the results found and the theory presented, it can be concluded that the category of common objectives in knowledge sharing in the network of this study contributes to the development of SOI practices by network members, both jointly and in actions specific to each TA, as described by Presidents A and F.

4.3.5.3 Category: Trust

The CACIOPAR network, as reported by the presidents interviewed, demonstrates a high level of trust among its members. They indicate that the network's solidity, its consolidated history, and consistency in addressing issues generate the trust necessary for sharing. Issues related to products, services, processes, and activities are discussed both in collective meetings and individually, either directly with CACIOPAR or with other TAs, as members feel safe to expose their difficulties within this environment of trust.

The trust generated among network members is in line with the theme addressed by Choo and Alvarenga (2010), who note that personal knowledge is shared within a group when trust and relationships between the parties are positive. Mannes and Beuren (2021) also emphasize that the network's ability to manage risks and propose solutions results in trust among members, reflecting trust in both sharing and acquiring knowledge in the CACIOPAR network, as commented by the presidents interviewed.

This trust in knowledge sharing among network members is also in line with the findings of Hallstedt et al. (2013), who identified, in the context of groups of companies, that similar products, routines, and support tools focused on sustainability were common to all companies. This increased the strength and closeness between them, generating trust to develop joint projects. Similarly, the study by Neutzling et al. (2018) pointed out that trust contributes to the development of sustainable projects and products within the supply chain context.

This topic is consistent with knowledge sharing among TAs, in which, even if they do not carry out joint actions, one TA ends up inspiring another to develop its own initiatives, in addition to supporting each other to ensure the success of these actions and projects.

Hall et al. (2022) emphasized the tendency for greater trust within a network on the part of members of smaller entities, which, because they have limited resources, end up exploring and becoming more involved in the network, understanding that they have a lot to learn. This point was highlighted in the responses of the presidents, who demonstrated confidence in the CACIOPAR network by recognizing that its members have greater ownership and knowledge of issues of common interest, in addition to effectively presenting results for the entire network.

Along these lines, Machado and Kuhl (2023) emphasized that entities with greater proximity and collaboration with each other are able to develop more actions aimed at economic, social, and environmental innovations, showing that building a solid and reliable network provides a more robust balance for sustainability.

Among the activities related to SOI practices associated with the category of trust, the CACIOPAR Congress stood out, in which the presidents reported trust in both the shared knowledge and the marketing of the services of Certificata and Paraná Energia. However, the development of SOI practices directly linked to trust was not so evident, indicating that most TAs tend to rely on the CACIOPAR network mainly for resolving problems related to processes, services, specific issues that impact their members, and management.

Thus, based on the results found and the theory presented, it can be concluded that the category of trust causes TAs to share knowledge among themselves to develop actions, processes, and projects aimed at assisting their members, as commented by the presidents, but that SOI practices are not yet being explored by the network in question within this factor.

4.3.5.4 Category: Communication channels

Within the category of communication channels, the CACIOPAR network uses physical and virtual means to hold its meetings and training sessions. The actions, projects, and services developed, whether or not related to SOI practices, are disseminated on social media, the entity's websites, and other means of communication available in the region, with positive results in both physical and virtual media.

For knowledge storage, network members provide meeting minutes, an information storage system, and process and procedure manuals.

The authors Schraiber et al. (2021), through a systematic review of the literature, identified that both physical and virtual channels, when they offer an environment conducive to creativity and easy interaction among members, facilitate and provide better knowledge sharing within a specific group. This finding is consistent with face-to-face meetings, as well as with online meetings and training sessions held on the CACIOPAR network, which are mostly perceived as effective means of sharing and acquiring knowledge. Furthermore, the authors point out that members who have the opportunity to participate in activities and interact face-to-face with colleagues, especially in a business context, find it easier to acquire knowledge.

Hall et al. (2022) investigated communication channels through social networks and websites, seeking to understand whether knowledge sharing occurs more quickly and continuously on the network with the use of these tools. However, the study did not find a significant contribution of communication channels via social networks to effective knowledge sharing.

The use of communication channels, in conjunction with technology, was addressed by Tura and Ojanen (2022), within a smart city scenario, where they were able to understand that the use of technologies is a strong ally for the development of innovations in systems, processes, and activities focused on sustainability. In this context, the online postgraduate course on ESG, presented by one of the presidents, confirms the use of technologies aimed at developing SOI practices.

In the present study, communication channels through social networks and websites showed a positive relationship with knowledge sharing among network members, in addition to favoring the dissemination of actions, projects, products, and services related to SOI practices, both developed by the CACIOPAR network and individually by each TA.

WhatsApp groups and email were analyzed by Scarabelli et al. (2022), whose study found that both are effective technologies for knowledge sharing in groups, although WhatsApp was not as widely used in the group surveyed. These results contradict those found in the present study, in which WhatsApp is widely used by the network and considered by participants as an effective means of sharing knowledge and developing other activities related to the network.

Busnello and Vieira (2021), in their study within a sectoral cluster in an TA, identified that knowledge sharing through networks with similar activities, which come together to develop joint projects, tends to generate high results related to innovation and value creation. In addition, the authors pointed out that the use of tools for online meetings, dissemination on social networks, and physical spaces for collaborative work are the main means for knowledge sharing. These points corroborate the results found in this study, in which both face-to-face and online meetings and training, as well as social networks, contributed to knowledge sharing within the network and to the dissemination of practices aimed at OSI.

Finally, Nonaka and Konno (1998) and Darroch (2005) highlight the ways in which knowledge is stored within an entity, emphasizing that the knowledge acquired must be disseminated among all its members. This perspective is in line with the practices observed in the TAs, which use data storage, internal process manuals, and records of SOI practices carried out in their regions.

Thus, based on the results obtained and the theoretical framework presented, we conclude that the category of communication channels contributes significantly to knowledge sharing in the network studied, allowing members to develop and disseminate their sustainability-oriented innovation practices, both through joint actions and individual actions of each TA.

4.3.5.5 Category: Hierarchy and leadership

Regarding hierarchy and leadership, the presidents described how CACIOPAR leaders always share their knowledge and help where needed, demonstrating a close and trusting relationship with the presidents. They also motivate the presidents to participate in the network so that activities are built by all members. These results consolidate the study by Sarafan et al. (2022), which highlights that, in shared leadership, all members of a network are motivated to participate, generating a positive result in knowledge sharing for the development of actions, projects, products, services, and processes.

Furthermore, Li et al. (2023) portray that a leader needs to possess three competencies: social cognitive skills, interpersonal skills, and strategic guidance skills. The first refers to the leader's ability to pass on knowledge to all members, using the necessary methods, so that everyone understands, paying attention to those who need more help. The second refers to the ability to build positive relationships with members, seeking to resolve conflicts and achieve results. The third states that leaders must involve their subordinates, encouraging them to participate and work towards objectives and activities.

The closeness and positive relationship between the presidents and CACIOPAR in sharing knowledge also corroborate the theoretical study by Senge (1990), which demonstrates that leaders must guide their subordinates, manage them, and help them achieve results. In addition, the study by Srivastava et al. (2006), conducted through interviews in the business sector, noted a positive relationship between leadership that supports, empowers, and motivates and knowledge sharing among group members, which increases the effectiveness and performance of the network.

Regarding the effect of leadership and hierarchy on knowledge sharing, Van Houten (2023), in a study conducted in a teaching group, noted two key elements that influence this process. According to his results, leaders with longer participation in the group tend to share their knowledge more easily than younger leaders. Furthermore, knowledge confers status on certain members, causing those who share and assume leadership roles—even without occupying higher hierarchical positions—to be followed and sought out by other members when necessary.

Both of these points were identified in the present study. The presidents recognize that, as the oldest coordinating body in the state and with a solid track record of achievements, CACIOPAR offers its members a greater variety of knowledge and activities, both in management and development practices and in actions aimed at SOI. Furthermore, presidents of other entities often seek assistance from TAs considered leaders, as they perceive them as having greater knowledge and influence, even when both are at the same hierarchical level.

CACIOPAR leaders' demand that presidents adopt a proactive stance in the search for solutions is in line with the theoretical studies of Nonaka & Konno (1998) and Urbancová & Vrabcová (2023). Both emphasize that, in most cases, solutions are present in the knowledge of the network members themselves and that, for these solutions to materialize, it is essential that leadership create a welcoming environment conducive to knowledge exchange. Furthermore, Urbancová & Vrabcová (2023) emphasize that leaders who develop strategies

focused on sustainability and innovation and encourage their members to act accordingly have a positive impact on employee performance.

This study is consistent with the results found in the present research, in which the presidents affirm that CACIOPAR leaders present topics focused on SOI practices in the network, through theoretical and practical approaches, using cases as examples. In addition, these leaders encourage TAs to develop social and environmental actions in their respective cities, promoting a culture focused on innovation and sustainability at the regional level.

Thus, based on the results found and the theory presented, it can be concluded that the category of hierarchy and leadership in knowledge sharing in the network of this study contributes to network members developing and sharing their sustainability-oriented innovation practices both jointly and in actions specific to each TA.

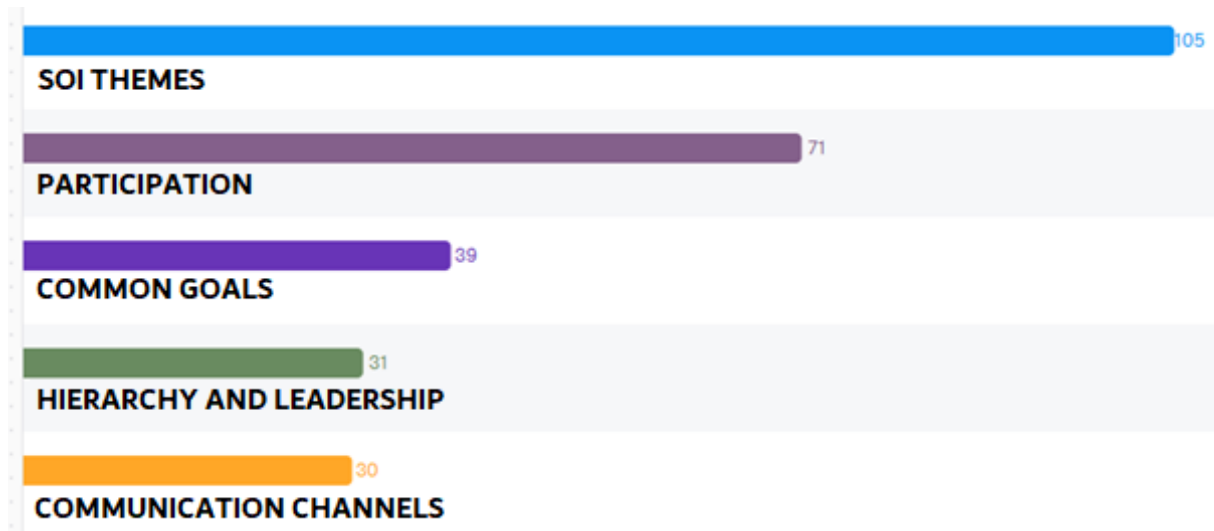
4.4 SUSTAINABILITY-ORIENTED INNOVATION PRACTICES

After characterizing the profile of the CACIOPAR network, the presidents interviewed, and the TAs participating in the research, as well as understanding how they behave in the network and which knowledge-sharing factors contribute to the development of innovation practices oriented towards sustainability, we sought to map the SOI practices carried out by the CACIOPAR network. We also aimed to classify them into three categories: SOI practices in products and services, in processes, and in organizational aspects.

For this stage, we used the responses of the presidents obtained in the interviews, both in the section related to knowledge-sharing factors and in specific questions focused on SOI practices in the organizational environment, organized into three blocks: SOI practices in products and services, SOI practices in processes, and organizational SOI practices.

In order to identify mentions of SOI practices more accurately, a specific subcategory was created for the topic within the Atlas.ti Web platform. This subcategory made it possible to analyze the content associated with the categories of participation, common goals, hierarchy and leadership, and communication channels. Thus, in addition to the direct responses related to Block 3, it was possible to map how SOI themes were addressed in the other categories analyzed. Figure 5 shows the subcategories of SOI themes.

Figure 5 - Subcategory of SOI Themes



Source: Data from Atlas.ti web (2024).

SOI is related both to the transformation of values and organizational philosophy and to the implementation of changes in products, services, processes, and practices. Its objective is to align the organization's actions with the generation of social and environmental value, without neglecting economic returns. In this way, organizations demonstrate a clear commitment to the future, considering the social, environmental, and financial impacts of their decisions and activities (Adams et al., 2016; Kneipp et al., 2022).

In this context, the authors highlight that SOI can manifest itself at different levels within an organization: incrementally, with small and progressive improvements in existing activities; at the redesign or “green boundaries” level, with broader adaptations to current products; at the functional level or with alternative products, through the creation of new product and service concepts; and, finally, at the systemic level, focused on projects that aim at structural transformations towards a sustainable society.

In this sphere, the presidents interviewed were asked about SOI practices in products and services, processes, and at the organizational level, within the CACIOPAR network. According to presidents B, C, and G, TAs are not yet strongly engaged in SOI practices, as they focus their efforts on supporting members in ensuring their survival and profitability. Thus, the topic of SOI is still in its infancy in some entities, being addressed mainly in theoretical agendas and discussions within the CACIOPAR network, but with little effectiveness in the implementation of practical actions.

I think that sustainability is not the main focus of associations today, because there are many problems within associations, problems that I would say are focused on the members, and TAs are more concerned with this than with sustainability itself. This is not a strong issue, not the main one yet. That is why I believe it is still a very timid issue, but it is a subject that is being addressed and discussed. Over time, I believe it will take shape and, together with other issues, it will help solve many of the other problems that are also coming up (President B, 2024, our translation).

Presidents C and D commented that their main initiatives related to SOI practices are focused on exchanging experiences with other TAs in the CACIOPAR network, primarily through conversations, presentation of *case studies*, and topics discussed at meetings. President H emphasized that, in the field of sustainability, her TA has focused its efforts mainly on social sustainability actions, considering this dimension to be more aligned with the principles and themes of associativism.

President E pointed out that TAs are able to carry out a greater number of SOI practices, especially jointly, which is not so widely explored today, so that both larger, more structured TAs and smaller, less structured TAs can contribute to the theme. According to him, the CACIOPAR network explores this theme in a theoretical way, but some members still lack the initiative to transform theoretical issues into practical ones for the network.

President F emphasized that he understands that the role of the CACIOPAR network is precisely to show the way forward for TAs, bringing the subject of SOI practices to meetings, conferences, and events, helping everyone to be as close and equal as possible in terms of their development and knowledge of the areas involved in associationism.

I think CACIOPAR has been working very hard on this issue. As I said, a conference was organized where this was practically the main topic. So, it is something that has been widely disseminated and discussed, yes. Internally, when we talk about trade associations, I always say that you need to look at your potential in this regard. Sometimes, there are several items that your investment capacity may prevent you from implementing. But we see it this way: the incentive is to publicize and ask people, especially those with certification from managers and associations, to allow their employees to participate in the network. I say this to level the playing field, so that people know what is being discussed and you never come back the same as you were

before. You always learn something, you exchange experiences with someone else (President F, 2024, our translation).

According to President F, this issue needs to be addressed on a daily basis, ensuring that TAs with more effective actions and greater knowledge in the area are also able to provide guidance to TAs that are experiencing certain difficulties, thus initiating a collective movement and progress on the issue of SOI practices in a practical manner within the associative system.

4.4.1 Sustainability-Oriented Innovation Practices in Products and Services

SOI practices applied to products and services relate to the creation, improvement, or elimination of products or services by the entity, with the aim of generating positive impacts on the environment in which it operates. This includes, for example, the development of products with lower raw material use and lower environmental impact, sustainable certifications, methods for measuring resource consumption and environmental impacts throughout the product life cycle, and the reduction of materials or their replacement with sustainable alternatives, such as reusable packaging (Kneipp et al., 2022).

In this context, TAs are entities that act mainly as service providers, not offering physical products for sale. Based on the survey data, three services developed within the CACIOPAR network were identified, i.e., resulting from knowledge sharing between entities related to SBI practices, in addition to a service implemented independently by an TA. Table 7 shows the SOI practices in services.

Table 7 - *SOI practices in services*

SOI practices in services in 2024	Number of TAs	Origin of SOI
Paraná Energia to offer renewable energy to members	4	CACIOPAR, through meetings
Certified for the use of digital signatures, avoiding paper printing	2	CACIOPAR, through meetings
Online postgraduate course focused on ESG in partnership with Anhanguera institution	1	CACIOPAR, through meetings
Free training, lectures, and courses throughout 2024 for members and non-members	1	Internal action by TA

Source: Research data (2024).

The services provided by Paraná Energia and Certificata were mentioned by all presidents during the interviews. However, of the eight presidents interviewed, only four and two, respectively, included these services in their TAs. Paraná Energia is a quota acquisition service that allows cooperative members, even if they do not have solar panels, to use a renewable energy source and pay a more affordable price, generating savings in the final price of electricity for cooperative members and promoting the use of renewable energy sources.

Certificata is an electronic document signing platform that replaces physical signatures and the need to print documents. This service was cited by the presidents as being related to CACIOPAR's incentive to reduce and seek to eliminate the use of paper in order to reduce the environmental and economic impacts on entities.

The online postgraduate course focused on ESG, offered in partnership with the Anhanguera institution, was mentioned by President H. She highlighted that the topic has been widely discussed within the CACIOPAR network, which has been encouraging TAs to delve deeper into the area. The partnership, which offers discounted tuition for TA members and associates interested in pursuing the specialization, represents a practice with positive social, environmental, and economic impacts for the entities involved.

Outside the CACIOPAR network, one TA held most of its training sessions, lectures, and courses free of charge during 2024. The only paid events were those that had sponsors involved. According to President F, this initiative is based on encouraging the training of its members and the community within the business area, reaching different types of audiences.

Finally, it should be noted that all services related to SOI practices originate from partnerships with other entities so that, through the CACIOPAR network and other networks, they can be marketed by the TAs.

In this context, it was found that practices related to SOI in services, both in the CACIOPAR network and in the TAs' own actions, have an incremental focus, according to Adams et al. (2016). These practices involve gradual improvements in activities already existing in the entities, as well as the incorporation of new service concepts, especially through partnerships established by the network with specialized providers.

4.4.2 Sustainability-Oriented Innovation Practices in Processes

SOI practices within a process, in an organizational context, are related to reducing impacts and improving sustainability within these processes, involving processes that reduce

their environmental impacts, the correct disposal of unnecessary materials, reducing water use, practices to reduce energy and material consumption, replacing inefficient processes and forms of transportation that contribute to reducing environmental impact (Kneipp et al., 2022).

In this regard, TAs have processes focused mainly on administrative services, based on assisting members, and therefore do not present a context of traditional production processes. Thus, within the existing administrative processes, two practices related to the CACIOPAR network were identified, i.e., processes linked to SOI practices that arise from knowledge sharing within the network, in addition to three SOI practices specific to two TAs. Table 8 shows the SOI practices in processes.

Table 8 - *SOI practices in processes*

SOI practices in processes in 2024	Number of TAs	Origin of SOI
Internal program focused on eliminating paper use	6	CACIOPAR, through <i>case studies</i> and topics presented at meetings
Proper separation of administrative waste (paper, electronic materials, plastic, organic, and recyclables)	6	CACIOPAR, through <i>case studies</i> and topics presented at meetings
Internal program focused on replacing plastic cups with paper cups in the administrative sector.	2	Internal action by TA
Use of solar panels	1	Internal action by TA
Use of cisterns to collect rainwater	1	Internal action by TA

Source: Research data (2024).

Within SOI practices in processes, the eight presidents interviewed reported having at least one practice in this regard. A common example, present in six of the eight TAs, is the internal program focused on eliminating paper use. This initiative aims to minimize the printing of bills, contracts for signature, and other documents that can be managed digitally. According to President F, this practice is often discussed at CACIOPAR meetings, as network members recognize that it contributes to reducing waste and facilitates the daily lives of employees.

Proper waste separation is also associated with the CACIOPAR network, which emphasizes the importance of TAs separating and disposing of materials properly. This practice aims to reduce improper disposal, facilitate the work of recycling associations in the region, and contribute to improving their financial results.

On the other hand, with regard to the actions of each TA, President A and President F reported the implementation of an internal practice aimed at eliminating the use of plastic cups,

replacing them with paper and biodegradable cups, both in administrative activities and in training, courses, and lectures held with the community.

Finally, the use of solar panels and cisterns for rainwater harvesting was cited by President F as an SOI practice in processes. According to him, the entity's headquarters was designed and built in 2016, which, because it is its own headquarters, allowed the entity to install such equipment.

Thus, practices related to SOI in processes, in the CACIOPAR network, and in its own actions, have their focus, according to Adams et al. (2016), on incremental improvements in the entities' existing activities.

4.4.3 Organizational Sustainability-oriented innovation practices

SOI practices in an organizational context involve reorganizing existing internal systems and implementing new forms of management and operation aligned with the principles of sustainable development. These practices include adopting certifications that guide sustainability, formulating environmental preservation policies, using environmental accounting tools, and employing local labor. In addition, they include the involvement of stakeholders in sustainable actions, the creation of departments dedicated to sustainability, the provision of training aimed at raising environmental awareness among employees, and the promotion of employee health and safety (Kneipp et al., 2022).

In this regard, most TAs engage in community-oriented volunteer activities, a policy that is in line with the principles of the associative system, as highlighted by the presidents interviewed. Within the organizational structure of TAs, 21 SOI practices related to the management and operation of the entities were identified. Of these, ten practices originate from knowledge sharing within the CACIOPAR network; four practices are carried out in partnership with other entities in the city where the TAs are located, i.e., partnerships outside the CACIOPAR network; and seven practices correspond to initiatives of four TAs. Table 9 presents the organizational SOI practices.

Table 9 - *Organizational SOI practices*

Organizational SOI practices in 2024	Number of TAs	Origin of SOI
ESG Congress, addressing technical aspects, the importance and impacts of the topic, and ESG in the daily lives of companies	8	CACIOPAR, through Congress

Use of local labor	8	CACIOPAR, through meetings
Concern for the health and safety of employees, directors, and associates	8	CACIOPAR, through meetings
Lectures and collection of cash and product donations in campaigns such as Pink October, Women's Day, and Blue November	5	CACIOPAR, through meetings
Employee involvement in actions related to SOI practices promoted by TAs	4	Actions originating from CACIOPAR and specific to TAs
Collection of donations for people affected by the floods in Rio Grande do Sul	3	CACIOPAR, through meetings
Director involvement in actions related to SOI practices promoted by TAs	3	Actions originating from CACIOPAR and specific to TAs
Environmental preservation policy within the TA Statute	3	CACIOPAR, through meetings
Sustainability portfolio within the TA board, as well as actions carried out by portfolio members	2	Internal action by TA
Actions during Associativism Week (planting and distribution of tree seedlings)	2	CACIOPAR, through the objectives of the week of associationism
Actions to protect native forests and springs	2	Action within bordering towns, POD, technical councils, and public authorities
Environmental protection and species rescue and preservation actions within the Bird Park	1	Technical council of Codefoz
Sustainability program to introduce a culture of sustainability to employees through conversations on the topic and internal waste elimination policies	1	Internal action by TA
"Cell phone disposal" project for the proper disposal of electronic devices at the end of their useful life	1	Internal action by TA
Training and participation of employees in environmental sustainability within the Codefoz technical council	1	Technical council of Codefoz
Actions within the city's Autism Association, through lectures and training with a psychologist for inclusion in the workplace	1	Internal action by TA
GPTW certification, ranking as an excellent place to work	1	Internal action by TA
Training with associates on the correct separation, collection, and distribution of waste	1	Internal action by TA
Donations of basic food baskets to the city's Waste Pickers Association, seeking to assist associates after a fire	1	Action by TA and partnership with city cooperatives
Lectures on ESG within industries	1	Internal action by TA
Action to bring cinema to public schools in the city on Children's Day	1	CACIOPAR, through meetings

Source: Research data (2024).

Linked to the CACIOPAR network, practices such as the ESG Congress, mentioned by all eight presidents interviewed, and the prioritization of local labor, both for internal hiring and for contracting services and purchasing necessary materials, stand out.

With regard to employees and directors, the TAs reported concern for the health of their employees, offering benefits such as health plans, dental plans, and other internal activities aimed at valuing employees, including birthday gifts, relaxing massages after high-demand events, and recognition for work performed. In addition, there is strong involvement by employees and directors in volunteer activities linked to SOI practices.

As for actions with members and the community, several initiatives were mentioned, such as lectures to collect cash and product donations, campaigns such as Pink October, Women's Day, and Blue November, solidarity actions for those affected by the floods in Rio Grande do Sul, activities during Association Week, and movie screenings in public schools on Children's Day. All of these actions are aligned with the TA and CACIOPAR Statutes, through policies that promote environmental preservation.

The four organizational SOI practices resulting from partnerships with entities outside the CACIOPAR network consist of actions aimed at protecting native forests, conserving springs, preserving species, training and participating in environmental sustainability councils, and donating basic food baskets to waste picker associations in the city. These initiatives are developed by only two of the TAs interviewed.

Finally, with regard to the seven internal SOI practices specific to each TA, actions aimed at board members responsible for sustainability-related portfolios stand out, in addition to the introduction of a sustainable culture among employees and the pursuit of GPTW certification. Outside the TAs, that is, in actions that directly impact the community, there are projects for the proper disposal of electronic devices, lectures and training conducted in partnership with autism associations, training on the separation, collection, and proper disposal of waste, as well as lectures on ESG aimed at the industrial sector.

Within the context of the organizational SOI, President A pointed out that some TAs, because they have a larger structure in terms of management, employees, and number of members, do not depend as much on CACIOPAR for the development of actions aimed at sustainable innovation. These TAs tend to develop their own initiatives or in partnership with local entities, especially cooperatives, public agencies, and other non-profit organizations. However, the president emphasized that such actions are aligned with CACIOPAR's objectives and, because they have been supported by the coordination for many years, they have been able to develop and grow, reaching their current size and achievements.

Thus, it was identified that organizational SOI practices, both within the CACIOPAR network and in partnerships with other entities and in the TAs' own actions, have, according to Adams et al. (2016), an incremental character, presenting gradual improvements in existing

activities, as well as the implementation of new concepts and initiatives, especially through network partnerships for volunteer projects and actions.

4.5 KNOWLEDGE SHARING AND ITS CONTRIBUTION TO THE DEVELOPMENT OF SUSTAINABILITY-ORIENTED INNOVATION PRACTICES

To answer the research question, we figured out how the categories of knowledge sharing help develop SOI practices. So, the categories of participation, common goals, communication channels, and hierarchy and leadership help network members develop innovation practices focused on sustainability, both together and through each TA's own actions.

The trust category showed positive results in network knowledge sharing, i.e., this factor strengthens the exchange of knowledge in the CACIOPAR network, although its direct role in supporting network SOI practices has not been identified.

The participation category focused on the participation of TA presidents in meetings within the CACIOPAR network and in networks outside CACIOPAR of which the TAs are part. Within the CACIOPAR network meetings, the main SOI practices identified are the CACIOPAR Congress, held in September 2024, whose central theme was “ESG: The challenge of generating opportunities with creativity and sustainability,” the entity's partnerships with the company Certificata and Paraná Energias, the availability of an online postgraduate course focused on ESG, and awareness-raising actions in campaigns for Pink October, Women's Day, and Blue November, as well as prize draw campaigns at the end of the year, Mother's Day, and Father's Day.

The category of common goals focused on recognizing the goals of the CACIOPAR network and the individual goals of each TA that makes up the network. Among the SOI practices aimed at common goals, the commitment to sustainability is recorded in the CACIOPAR Statute. According to the president, this is reflected in actions for the community, such as encouraging donations for people affected by the floods in Rio Grande do Sul, seeking to bring public universities to the Western Region, and fighting for the duplication of the BR highway to facilitate transportation for the community and the business and industrial sectors, the ESG theme developed within its Congress, in 2024, and the search for products and services that reduce the disposal of materials in the environment, such as Certificata and Paraná Energia.

The communication channels category addressed the means, whether physical or digital, through which TAs communicate to share and acquire knowledge. In this category, related SOI practices focus both on discussing the topic in person, as was the case with the ESG-related Congress, and on social media, such as the CACIOPAR network or their own initiatives, such as campaigns during Pink October, Women's Day, and Blue November, services such as Certificata and Paraná Energias, community awards, among others, passing on their actions in the region to their members and the community.

In the hierarchy and leadership category, the relationship between the leaders of the CACIOPAR network and the affiliated TAs was analyzed, seeking to understand how these leaders encourage SOI practices. It was identified that leaders exercise their role by imparting knowledge and encouraging members to express and discuss ideas within the group. This environment favors the discussion of topics such as employability, campaigns for local commerce, theoretical concepts about sustainability, and the presentation of cases of sustainable companies. In addition, leaders encourage TAs to carry out community actions and incorporate sustainability internally, in their daily practices, thus demonstrating a positive relationship with networked SOI practices.

Based on the analysis of the data obtained, it was possible to identify how the knowledge sharing categories helped implement the SOI practices mentioned by the presidents interviewed. Table 10 shows the SOI practices aided by network knowledge sharing.

Table 10 - SOI practices aided by networked knowledge sharing

SOI practices in services in 2024	Number of TAs	Categories that help knowledge sharing
Paraná Energia to offer renewable energy to members	4	Participation, common goals, and communication channels
Certified for the use of digital signatures, avoiding paper printing	2	Participation, common goals, and communication channels
Online postgraduate course focused on ESG in partnership with Anhanguera institution	1	Participation, communication channels, and hierarchy and leadership
SOI practices in processes in 2024	Number of TAs	
Internal program focused on eliminating paper use	6	Participation, common goals, hierarchy, and leadership
Proper separation of administrative waste (paper, electronic materials, plastic, organic, and recyclables)	6	Participation, hierarchy, and leadership
Organizational SOI practices in 2024	Number of TAs	
ESG Congress, addressing technical aspects, the importance and impacts of the topic, and ESG in the daily lives of companies	8	Participation, common goals, communication channels, hierarchy, and leadership
Use of local labor	8	Communication channels, hierarchy, and leadership
Concern for the health and safety of employees, directors, and associates	8	Common goals, hierarchy, and leadership
Lectures and collection of cash and product donations in campaigns such as Pink October, Women's Day, and Blue November	5	Participation, common goals, communication channels, hierarchy, and leadership
Employee involvement in actions related to SOI practices promoted by TAs	4	Participation, common goals, communication channels, hierarchy, and leadership
Collection of donations for people affected by the floods in Rio Grande do Sul	3	Participation, common goals, communication channels, hierarchy, and leadership
Director involvement in actions related to SOI practices promoted by TAs	3	Participation, common goals, communication channels, hierarchy, and leadership
Environmental preservation policy within the TA Statute	3	Participation, common goals, communication channels, hierarchy, and leadership
Activities during Associativism Week (planting and distribution of tree seedlings)	2	Participation, common goals, communication channels, hierarchy, and leadership
Bringing cinema to public schools in the city on Children's Day	1	Participation, common goals, hierarchy, and leadership

Source: Research data (2024).

Thus, as a finding of this study, it can be discerned that participation factors, common goals, trust, communication channels, and hierarchy and leadership are categories that helped develop the SOI practices described in the CACIOPAR network through knowledge sharing among members.

5 FINAL CONSIDERATIONS

Based on the analyses performed and the evidence obtained throughout the research, it was possible to answer the research question and meet the general objective and the four specific objectives proposed in this dissertation. Initially, the network formed by CACIOPAR was characterized and mapped through structured interviews, complemented by information extracted from the official websites of the entities involved. The categories of knowledge sharing in the network, as well as practices aimed at developing OSI in products and services, processes, and in the organizational context, were identified with the support of the theoretical framework and previously analyzed studies. Finally, it was understood in which categories of knowledge sharing the network presented effective development of OSI practices in the three dimensions analyzed: products and services, processes, and organization.

The overall objective of this research was to identify how network knowledge sharing contributes to the development of SOI practices in TAs. Based on studies related to network knowledge sharing and SOI practices in the dimensions of products and services, processes, and organization, eight TAs that are part of the CACIOPAR network were analyzed. The data were obtained through document analysis and structured interviews, allowing for an in-depth understanding of the dynamics between knowledge sharing and the development of sustainable practices in these entities.

The conclusions of this study indicate that the network effectively promotes knowledge sharing, which, in turn, contributes to the development of SOI practices. In this scenario, it was possible to identify that participation factors related to member engagement in the network, common objectives involving both the network's and each TA's purposes, communication channels comprising the means used for interaction, and hierarchy and leadership addressing the role of leaders in promoting SOI are fundamental elements for strengthening knowledge sharing. These factors result in positive impacts on the development of the TAs that are part of the network, manifested through actions, processes, and projects that aim to benefit their members.

With regard to the contribution of network knowledge sharing factors to the development of SOI practices in TAs, the factors of participation, common objectives, communication channels, and hierarchy and leadership contribute to the development of SOI practices by network members, both jointly and in actions specific to each TA. The trust category showed positive results in network knowledge sharing, but it was not possible to observe its direct assistance within network SOI practices.

The mapped SOI practices were classified into three categories: products and services, processes, and organizational. In the area of products and services, the network highlights partnerships that enable access to the services of Paraná Energias and Certificata, as well as an online postgraduate course focused on ESG, and free training, lectures, and courses offered to the community.

As for process-oriented practices, internal programs that promote the elimination of paper use, the correct separation of administrative waste (paper, electronic materials, plastic, organic and recyclable), the replacement of plastic cups with paper cups in the administrative sector, as well as the use of solar panels and cisterns for rainwater harvesting stand out.

Finally, organizational SOI practices were those that showed the highest adherence and impact among TAs. Among the most widespread initiatives are the ESG congress, which addresses technical aspects, the relevance, and impacts of the topic in everyday business; the prioritization of hiring local labor; concern for the health and safety of employees, directors, and associates; lectures and campaigns to collect cash and product donations linked to initiatives such as Pink October, Women's Day, and Blue November; and employee engagement in SOI initiatives promoted by TAs.

In this sense, this study contributes by highlighting how knowledge sharing can foster the development of SOI practices within a network composed of entities in the same industry and located in nearby regions. By mapping the SOI practices originating in the network, it was also possible to identify the categories of knowledge sharing in which these practices were developed or discussed, providing a complete overview from the conception to the implementation of SOI practices.

Thus, considering specifically the TAs that are part of the CACIOPAR network, the research pointed out that these entities incorporate SOI practices into their culture and values, in line with the associative system. These practices aim to develop products, services, actions, processes, and projects that benefit member companies and promote positive impacts on the economic, social, and environmental dimensions of the communities where they operate.

For future research, we suggest investigating how the diversity of trade association members can influence the creation and dissemination of SOI practices, taking into account aspects such as the region and size of the TA. In addition, indicators could be developed to assess how trade associations implement and maintain their SOI practices. Finally, we suggest a study that delves deeper into the external partnerships that these entities have, such as with city halls, companies, and other entities, highlighting the process of knowledge sharing between these organizations for the development of SOI practices.

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APPENDIX A – APPLIED INTERVIEW GUIDE

INTERVIEW GUIDE – PRESIDENTS OF TAs	
SET A: Profile of respondents	
What is your gender? How old are you? What is your educational background? What positions have you held within the organization? How long have you been with the organization?	
SET A: Profile of the TA	
How many years has the organization you work for been in existence? How many years has the organization you work for been part of the CACIOPAR network? How many employees does TA have? How many members does TA have? How many directors does TA have? Which business sector has the highest number of TA members?	
SET B: To identify factors that favor knowledge sharing in trade associations; Identify practices aimed at developing SOI in products and services, processes, and organizations; Identify how knowledge sharing factors assist in the development of practices aimed at developing SOI.	
The Participation category, in terms of knowledge sharing within networks, contributes to the development of innovation practices geared towards sustainability.	Bonassi & Lisboa (2003); Hillman, Axon & Morrissey (2018); Campos Junges & Campos (2022); Özlem (2022); Penttinen & Frösén (2022); Scarabelli, Sartori & da Cruz Urpia (2022); Yu, Zheng, Lin & Yuan (2023); Srivastava, Bartol & Locke (2006); Machado & Kuhl (2023).
How many monthly meetings does CACIOPAR hold and how many do you attend? How long has your TA been participating in CACIOPAR meetings? If not, why not? Besides CACIOPAR, what other meetings does your TA participate in? Please comment. Are sustainable innovations a topic discussed at these meetings? Please comment. After participating in the meetings, do you notice that sustainable products and services are being developed or improved? Which ones? Please comment. After participating in the meetings, do you notice that sustainable internal processes are being developed or improved at TA? Which ones? Please comment. After participating in the meetings, do you notice that internal policies or standards for sustainable management are being developed or improved at the organization? Which ones? Please comment.	
The category Common Goals in knowledge sharing in networks contributes to the development of innovation practices geared towards sustainability.	Machado & Kuhl (2023); Choo & Alvarenga Neto (2010); Hall, Ellis & McArthur (2022); Urbancová & Vrabcová (2023); Fiandrino, Gromis di Trana, Tonelli & Rizzato (2023); Mannes & Beuren (2021).
What are the objectives of the CACIOPAR network? Which objectives are linked to sustainability? Does the TA you work for identify with these objectives? Which ones? What are the advantages of being part of the CACIOPAR network? Which ones? Please comment. Are sustainable services, solutions, and/or ideas being developed within the network? Which ones? Please comment.	
The category Trust in knowledge sharing in networks contributes to the development of innovation practices geared towards sustainability.	Choo & Alvarenga Neto (2010); Mannes & Beuren (2021); Hall, Ellis & McArthur (2022); Machado & Kuhl (2023); Hallstedt, Thompson & Lindahl (2013); Neutzling, Land, Seuring & do Nascimento (2018).
Do you trust the knowledge shared by network members? Do you trust network members to solve problems? What about developing innovative practices related to sustainability? Comment below. Do you trust the network's sustainability-related activities? Name a few.	
The category Communication channels in networked knowledge sharing contributes to the	Nonaka & Konno (1998); Scarabelli, Sartori & da Cruz Urpia (2022); Hall, Ellis & McArthur (2022); Schraiber, de Melo & Franzoni (2021); Darronch

development of innovation practices geared towards sustainability.	(2005); Busnello & Vieira (2021); Tura & Ojanen (2022).
Are network meetings held in person and/or via digital platforms? What channels does the network use for communication between members? Please comment. Does the network use digital platforms to store information and/or share new knowledge related to sustainability with its members? Does the network use social media to share its sustainability-related activities with its members?	
The category Hierarchy and leadership in network knowledge sharing contributes to the development of practices aimed at developing SOI.	Van Houten (2023); Li, Martins, Vasconcelos & Peng (2023); Nonaka & Konno (1998); Srivastava, Bartol & Locke (2006); Sarafan, Lawson, Roehrich & Squire, (2022); Senge (1990); Urbancová & Vrabcová (2023).
Do network leaders encourage their members to share knowledge for the development of sustainable innovation practices? Comment. Do network leaders share knowledge for the development of sustainable innovation practices with network members? Comment. Do leaders reward members who share knowledge for the development of sustainable innovation practices within the network?	
SET C: To classify practices aimed at developing SOI, which are aided by factors such as knowledge sharing in networks, product/service innovations, processes, and organizational innovations.	
Sustainability-oriented innovation practices in products/services that have been aided by networked knowledge sharing factors.	Adams, Bessant, Jeanrenaud, Bessant, Denyer & Overy (2016); Klewitz & Hansen (2014); Kneipp, Gomes, Favarin, Motke & Cassol (2022).
Does TA have products or services that are designed to be less harmful to the environment and reduce the use of raw materials? Which ones? Does TA offer services that incorporate sustainable actions, practices, and/or certifications? Which ones? Does TA have ways to measure resource consumption, environmental impacts, and waste generation throughout the entire life cycle of a product or service? Which ones? Are there any innovations aimed at reducing the amount of materials used or replacing them with sustainable ones? Which ones? Does TA use reduced or reusable packaging? Which ones?	
Sustainability-oriented innovation practices in processes that were aided by networked knowledge sharing factors.	Adams, Bessant, Jeanrenaud, Bessant, Denyer & Overy (2016); Klewitz & Hansen (2014); Kneipp, Gomes, Favarin, Motke & Cassol (2022).
Have internal processes been developed to reduce environmental impacts? Which ones? Are unnecessary materials correctly disposed of in internal processes? Which ones? Do you have practices in place to reduce energy, water, and material/resource consumption and replace inefficient processes? Which ones? Do you use any form of transportation that contributes to reducing environmental impact? Which ones?	
Innovation practices geared toward organizational sustainability that were aided by factors related to knowledge sharing in networks.	Adams, Bessant, Jeanrenaud, Bessant, Denyer & Overy (2016); Klewitz & Hansen (2014); Kneipp, Gomes, Favarin, Motke & Cassol (2022).
Does TA have certifications that guide its activities in favor of sustainability? Which ones? Does TA have policies that promote environmental preservation? Which ones? Does TA have environmental accounting tools, i.e., records and controls that contribute to assessing the environmental impact of business activities? Which ones? Does TA have new processes that bring greater efficiency and contribute to sustainable practices? Which ones? Is there a department, team, or committee responsible for sustainability? Comment. Are various stakeholders such as employees, suppliers, and the community involved in sustainable actions? Which ones? Is there a concern for employee health and safety? What is done? Is there development and training for employees to perform activities related to sustainability? What training? Are there standards that guide employee behavior toward sustainable practices in the organization? What are the standards?	